

# The Drax Power (Generating Stations) Order

Land at, and in the vicinity of, Drax Power Station, near Selby, North Yorkshire

## Applicant's Responses to Written Questions

(Submitted for Deadline 2)



The Planning Act 2008

## Drax Power Limited

Drax Repower Project

Applicant: DRAX POWER LIMITED  
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## Glossary

| Abbreviation                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| Above Ground Installation (AGI) | The Minimum Offtake Connection (MOC) which will be operated by National Grid Gas and the PIG Trap Launching station (PTF-L) which will be operated by Drax. The AGI is described as Work No. 6 in Schedule 1 of the draft DCO (Examination Library AS-012).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Application                     | The DCO Application.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| The Applicant                   | Drax Power Ltd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Associated Development          | <p>Associated development is defined by section 115(2) of the Planning Act 2008 as development which is associated with a Nationally Significant Infrastructure Project (NSIP). In the case of the Proposed Scheme, the term Associated Development includes:</p> <ul style="list-style-type: none"> <li>- the up to two gas insulated switchgear banking buildings (described as Work No. 4 in Schedule 1 of the Order);</li> <li>- the natural gas receiving facility and natural gas compression building (described as Work No. 5 in Schedule 1 of the Order);</li> <li>- the AGI (described as Work No. 6 in Schedule 1 of the Order);</li> <li>- the Gas Pipeline (described in Work No. 7 in Schedule 1 of the Order);</li> <li>- the electrical connections to the existing 400 kilovolt National Grid substation (described in Work No. 8 in Schedule 1 of the Order);</li> <li>- temporary construction laydown areas (described in Work No. 9 in Schedule 1 of the Order);</li> <li>- landscaping and biodiversity enhancement measures (described in Work No. 11 in Schedule 1 of the Order);</li> <li>- decommissioning and demolition of sludge lagoons and construction of replacement sludge lagoons (described in Work No. 12 in Schedule 1 of the Order);</li> <li>- removal of existing 132 kilovolt overhead line and associated towers and foundations (described in Work No. 13 in Schedule 1 of the Order);</li> <li>- passing place on Rusholme Lane (described in Work No. 14 in Schedule 1 of the Order); and</li> <li>- further associated development as set out in Schedule 1 of the Order.</li> </ul> <p>These developments are associated with the NSIP, i.e. Unit X and Unit Y and the battery storage facilities (described in Work Nos. 1-3 in Schedule 1 of the Order).</p> |
| Carbon capture readiness        | Carbon Capture readiness, with respect to a combustion plant's emissions of CO <sub>2</sub> , is achieved when the following conditions are met: (a) suitable storage sites are available (b) it is technically and economically feasible to retrofit the plant with the equipment necessary to capture that CO <sub>2</sub> ; and it is technically and economically feasible to transport such captured CO <sub>2</sub> to the storage sites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Abbreviation                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Carbon capture readiness reserve space | Space to be set aside to accommodate future carbon capture equipment, making the proposed plant in effect “carbon capture ready” for when the Carbon capture readiness state is achieved. The Carbon capture readiness reserve space is described as Work No. 10 in Schedule 1 of the draft DCO (Examination Library AS-012).                                                                                                                                                                                                                          |
| Combined Cycle Gas Turbine (CCGT)      | A combined cycle gas turbine is an assembly of turbines that convert heat into mechanical energy. Combustion of a fuel within a gas turbine produces hot gases that expand over a complex series of blades that cause the turbine to rotate which in turn drives an electrical generator. The principle of combined cycle is that the exhaust gases from the turbine are used as a heat source in a heat recovery steam generator (HRSG), increasing the system's overall efficiency by utilising energy from the fuel that would otherwise be wasted. |
| Development Consent Order (DCO)        | A Development Consent Order (DCO) is made by the Secretary of State (SoS) pursuant to the Planning Act 2008 (PA 2008) to authorise a Nationally Significant Infrastructure Project (NSIP).                                                                                                                                                                                                                                                                                                                                                             |
| Drax Power Station                     | The existing biomass and coal fired power generation facility at the Existing Drax Power Station Complex.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Environmental Impact Assessment (EIA)  | A systematic means of assessing a development project's likely significant environmental effects undertaken in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.                                                                                                                                                                                                                                                                                                                                         |
| EIA Regulations 2017                   | The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 which prescribe the information to be included in the Environmental Statement and the consultation to be carried out in connection with development requiring an Environmental Statement.                                                                                                                                                                                                                                                                               |
| Environmental Statement (ES)           | A statement that includes the information that is reasonably required to assess the environmental effects of a development and which the applicant can, having regard in particular to current knowledge and methods of assessment, reasonably be required to compile, but that includes at least the information required in the EIA Regulations 2017 and which is prepared in accordance with the latest Scoping Opinion adopted by the Secretary of State (where relevant).                                                                         |
| Existing Drax Power Station Complex    | The facilities comprising the existing Drax Power Station, and the land upon which it is situated.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Gas Pipeline                           | <p>The approximately 3 km underground pipeline which connects the Gas Receiving Facility to the National Transmission System.</p> <p>The Gas Pipeline is described as Work No. 7 in Schedule 1 of the Order (Examination Library AS-012).</p>                                                                                                                                                                                                                                                                                                          |
| Gas Receiving Facility (GRF)           | This is required to receive the natural gas from the Gas Pipeline. The GRF is described as Work No. 5 in Schedule 1 of the draft DCO (Examination Library AS-012).                                                                                                                                                                                                                                                                                                                                                                                     |



| Abbreviation                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Limits of deviation                                  | The limits shown on the Works Plans within which the Proposed Scheme may be built.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Nationally Significant Infrastructure Project (NSIP) | A project meeting the criteria for a “nationally significant infrastructure project” set out in section 14 of the Planning Act 2008, and therefore requiring authorisation under the PA 2008 by way of a DCO.<br>The Proposed Scheme constitutes a Nationally Significant Infrastructure Project (NSIP) by virtue of s.14(1)(a) and s.15 of the PA 2008 as it is an onshore generating station in England of 50 MW capacity or more.                                                   |
| The Order                                            | The DCO which, if made by the SoS, will authorise the construction, operation and maintenance of the Proposed Scheme and which will be known as “The Drax Power (Generating Stations) Order”. A draft of the Order is (Examination Library AS-012).                                                                                                                                                                                                                                    |
| Order land                                           | The land shown coloured pink, blue, green and yellow on the Land Plans which is within the Order limits and which is the subject of compulsory acquisition, extinguishment of easements servitudes and other private rights and temporary possession.                                                                                                                                                                                                                                  |
| Order limits                                         | The limits shown on the Works Plans (Examination Library refAPP-009) within which the development authorised by the Order may be carried out.                                                                                                                                                                                                                                                                                                                                          |
| PA 2008                                              | The Planning Act 2008 (as amended) which is the legislation in relation to applications for NSIPs, including pre-application consultation and publicity, the examination of applications and decision making by the SoS.                                                                                                                                                                                                                                                               |
| Pipeline Area                                        | The area required in connection with the construction, operation and maintenance of the Gas Pipeline, the AGI and the GRF, comprising the Pipeline Construction Area and the Pipeline Operational Area.                                                                                                                                                                                                                                                                                |
| Pipeline Construction Area                           | The extent of land needed for the construction phase of the Gas Pipeline, the AGI, the GRF and the Rusholme Lane Area.                                                                                                                                                                                                                                                                                                                                                                 |
| Pipeline Operational Area                            | The area within which the Gas Pipeline, the AGI and the GRF will be situated once constructed.                                                                                                                                                                                                                                                                                                                                                                                         |
| Planning Inspectorate (PINS)                         | The government agency responsible for administering and examining applications for development consent for NSIPs under the Planning Act 2008 on behalf of the SoS.                                                                                                                                                                                                                                                                                                                     |
| Power Station Site                                   | Areas within the Existing Drax Power Station Complex where:<br>1. The temporary construction Laydown Area is to be located described in Work No. 9A in Schedule 1 of the draft DCO (Examination Library AS-012);<br>2. The Generating station equipment is proposed to be located;<br>3. The Electrical connection is proposed to be located; and<br>4. The decommissioning and demolition of sludge lagoons and construction of replacement sludge lagoons is proposed to take place, |

| Abbreviation    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                 | described as Work No. 12 in Schedule 1 of the draft DCO (Examination Library AS-012).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Proposed Scheme | <p>Drax Power Limited is proposing to repower up to two existing coal-powered generating units (Units 5 and 6) at the Existing Drax Power Station Complex with new gas turbines that can operate in both combined cycle and open cycle modes. The term "repower" is used as existing infrastructure, such as the steam turbine and cooling towers, that are currently used for the coal fired units would be reutilised for the new gas fired generating units/stations.</p> <p>The repowered units (which each constitute a new gas fired generating station) would have a new combined capacity of up to 3,600 MW in combined cycle mode (1,800 MW each), replacing existing units with a combined capacity to generate up to 1,320 MW (660 MW each). This is explained further below:</p> <p>Each gas generating station would have up to two gas turbines, with each gas turbine powering a dedicated generator of up to 600 MW in capacity. The gas turbines in each generating station (or unit), therefore, would have a combined capacity of up to 1,200 MW. The gas turbines in each generating station (or unit), in combined cycle mode, would provide steam to the existing steam turbine (through Heat Recovery Steam Generators (HRSGs)) which would generate up to 600 MW per unit. Each unit would have up to two HRSGs. This results in a capacity for each generating station of up to 1,800 MW and, should both units be repowered, a combined capacity of up to 3,600 MW. The new gas turbine generating units have been designated the terms "Unit X" and "Unit Y". In OCGT mode, the combined capacity would be up to 2,400MW (as in OCGT mode, there would be no HRSG capacity).</p> <p>Each unit would have (subject to technology and commercial considerations) a battery energy storage facility. The battery units may be stored within a single structure.</p> <p>The total combined capacity of the two gas fired generating stations and two battery storage facilities (i.e. the total combined capacity of the Proposed Scheme) is therefore 3,800 MW.</p> <p>Drax is seeking consent for the flexibility to either:</p> <p>Repower one unit (either Unit 5 or 6) and construct Unit X as a gas fired generating station; or</p> <p>Repower both Units 5 and 6 and construct Unit X and Unit Y as two gas fired generating stations.</p> <p>In the single unit scenario, up to two gas turbines and up to two HRSGs and (subject to technology and commercial considerations) a battery energy storage facility would be constructed. The maximum size of the</p> |

| Abbreviation       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                    | <p>battery storage cells and any structure built to protect them would not change, as the battery storage cells for one Unit could be one larger battery which would allow the output associated with one Unit to be sustained for a longer duration. However, the fuel gas station and gas insulated switchgear would be smaller.</p> <p>In the event that two units are repowered and two new generating stations are constructed, then construction works would be undertaken consecutively rather than concurrently.</p> <p>In order to repower to gas, a new Gas Pipeline would be constructed from the Existing Drax Power Station Complex to the National Transmission System (NTS) operated by National Grid. Pipeline infrastructure would be the same for both one and two unit scenarios.</p> <p>A gas receiving facility (GRF) comprising Pipeline Inspection Gauge (PIG) Trap Facility (PTF), Pressure Reduction and Metering Station (PRMS) and compressor station is proposed south of woodland to the east of New Road.</p> <p>At the connection to the NTS there will be an AGI comprising - a Pig Trap Launching station (PTF-L) which will be operated by Drax, and a Minimum Offtake Connection (MOC), which will be operated by National Grid.</p> <p>The Proposed Scheme also includes the electrical connection.</p> <p>Drax's Proposed Scheme is described in more detail in Chapter 3 (Site and Project Description) of the ES Volume 1 (Examination Library ref APP-071).</p> <p>Schedule 1 of the Order (Examination Library AS-012) lists out the elements comprised within the Proposed Scheme.</p> |
| Requirements       | <p>The 'requirements' at Schedule 2 to the Order that, amongst other matters, are intended to control the final details of the Proposed Scheme as to be constructed and also to control its operation, amongst other matters, to ensure that it accords with the EIA and does not result in unacceptable impacts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rusholme Lane Area | <p>Area required for passing places during the construction of the Gas Pipeline, AGI and GRF (described as Work No. 14 in Schedule 1 to the Order).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Site               | <p>The Site refers to the Power Station Site, the Carbon capture readiness reserve space (which is also the location of temporary construction laydown described as Work No. 9B in Schedule 1 to the Order) and the Pipeline Area.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Abbreviation               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Reconfiguration Works | <p>The Site Reconfiguration Works or Stage 0 refers to the works described below that are necessary to prepare the Power Station Site for the construction of the generating station equipment and the electrical connection. The works comprise:</p> <ol style="list-style-type: none"> <li>1. Demolition of the private squash court (no replacement), Learning Centre (consolidated into existing facilities); and</li> <li>2. Demolition of and reconstruction of car parking, turbine outage stores, contractor's compounds and welfare facilities.</li> <li>3. Construction of a cooling water spray screen between relocated facilities and the southern cooling towers.</li> </ol> <p>The Site Reconfiguration Works were the subject of a separate planning application under the Town and Country Planning Act 1990 (planning reference 2018/0154/FULM) which was approved by Selby District Council on 24 May 2018. The Applicant has started to carry out the Site Reconfiguration Works by implementing planning permission 2018/0154/FULM. At the time of submitting this document, the Applicant has submitted a non-material amendment application to the Examining Authority to remove these works from the Proposed Scheme being authorised under the DCO. The DCO Application makes it clear that these works may be carried out under either:</p> <ol style="list-style-type: none"> <li>1. Any TCPA planning permission that may be granted; or</li> <li>2. The Order.</li> </ol> |
| Unit X                     | <p>The construction of a gas fired generating station capable of operating in CCGT and OCGT modes and which would have a generating capacity of up to 1,800 MW. Unit X would be connected to a battery storage facility. Unit X is described in Work No. 1 of Schedule 1 to the draft DCO (Examination Library ref AS-012).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Unit Y                     | <p>The construction of a gas fired generating station capable of operating in CCGT and OCGT modes and which would have a generating capacity of up to 1,800 MW. Unit Y would be connected to a battery storage facility. Unit Y is described in Work No. 2 of Schedule 1 to the draft DCO (Examination Library ref AS-012).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Work No. / Work Number     | <p>Work number, a component of the Proposed Scheme, described at Schedule 1 to the Order.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



## Abbreviations

| Abbreviation | Term in full                                            |
|--------------|---------------------------------------------------------|
| AEL          | Associated Emissions Levels                             |
| AEL          | Associated Emission Limit                               |
| AoS          | Appraisal of Sustainability                             |
| APAC         | Asia and the Pacific                                    |
| BECCS        | BioEnergy                                               |
| BNG          | Biodiversity Net Gain                                   |
| BReF         | Best Available Techniques Reference                     |
| CCGT         | combined cycle                                          |
| CCR          | Carbon Capture Readiness                                |
| CCS          | Carbon Capture and Storage                              |
| CEMP         | Construction Environmental Management Plan              |
| EA           | Environment Agency                                      |
| EMEA         | Europe, Middle East and Africa                          |
| ES           | Environmental Statement                                 |
| FCAS         | Frequency Control Ancillary Services                    |
| FES          | Future Energy Scenarios                                 |
| GHG          | Greenhouse Gas                                          |
| IAQM         | The Institute Air Quality Management                    |
| MAFF         | The Ministry of Food and Fisheries                      |
| NEXA         | Network Exit Agreement                                  |
| NPS          | National Policy Statement                               |
| NTS          | National Transmission System                            |
| OCGT         | Open Cycle                                              |
| PARCA        | Planning and Advanced Reservation of Capacity Agreement |
| SEA          | Strategic Environmental Assessment                      |
| YWT          | Yorkshire Wildlife Trust                                |

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# 1 INTRODUCTION

## 1.1 Purpose of this Document

- 1.1.1 On 29 May 2018, Drax Power Limited ("Drax" or "the Applicant") made an application ("the Application") for a Development Consent Order to the Secretary of State for Business, Energy and Industrial Strategy ("the SoS"). The Application relates to the Drax Repower Project ("the Proposed Scheme") which is described in detail in chapter 3 of the Environmental Statement (document reference 6.1.4, Examination Library reference APP-071).
- 1.1.2 The Application was accepted for Examination on 26 June 2018.
- 1.1.3 This document, submitted for Deadline 2 of the Examination, contains the Applicant's responses to the Examining Authority's ("ExA's") First Written Questions ("FWQ"), issued by the ExA on 11 October 2018.
- 1.1.4 This document follows the order of the FWQs as set out by the ExA
- 1.1.5 At Deadline 1 and at this Deadline 2, the Applicant has submitted new documents or revised versions of documents submitted with the Application. These documents are referred to in the responses to FWQ and for ease of reference those documents are:
- Deadline 1 documents:
    - 8.1.1 Statement of Common Ground between Drax Power Limited and Historic England Rev 001 (Examination Library Reference [REP1-003](#));
    - 8.1.2 Statement of Common Ground between Drax Power Limited and Natural England Rev 001 (Examination Library Reference [REP1-004](#));
    - 8.1.4 Statement of Common Ground between Drax Power Limited and East Riding of Yorkshire Council Rev 001 (Examination Library Reference [REP1-005](#));
    - 8.1.4 Statement of Common Ground between and North Yorkshire County Council and Selby District Council (draft) (Examination Library Reference [REP1-006](#));
    - 8.5.1 Applicant's Responses to Relevant Representations Rev 001 (Examination Library Reference [REP1-013](#));
    - 8.5.2 Accompanied Site Inspection – Suggested Locations and Justifications Rev 001 (Examination Library Reference [REP1-014](#));
    - 1.2 Application Guide Rev 005 (Examination Library Reference [REP1-002](#))
    - 8.2.1 Schedule of Changes for Deadline 1 Rev 001 ([REP1-007](#));
    - 8.3.1 Errata – Environmental Statement (Chapters 7, 8 and 11) Rev 001 (Examination Library Reference [REP1-008](#));
    - 8.4.1 Revised Viewpoints and Additional Photomontage Rev 001(Examination Library Reference [REP1-009](#))
    - 8.4.2 Supplemental Environmental Information - Breeding Birds Rev 001;
    - 8.4.3 Supplemental Environmental Information - Reptiles Rev 001; and
    - 8.4.5 Electric and Magnetic Fields (EMF) Assessment Report Rev 001.

1.1.6 Submission documents for Deadline 2 of the Examination include:

- Updated Application Documents
  - 1.2 Application Guide
  - 2.1 Site Location Plan
  - 2.2 Land Plans
  - 2.3A Works Plans
  - 2.3B Indicative Works Associated with Unit X
  - 2.3C Indicative Works Associated with Unit Y
  - 2.4 Access and Rights of Way Plans
  - 2.5A Two Unit Option Indicative Plant Layout
  - 2.5B One Unit Option Indicative Plant Layout
  - 2.6C Indicative Above Ground Gas Installation Elevations
  - 3.1 Draft Development Consent Order
  - 4.2 Funding Statement
  - 4.3 Book of Reference (clean and track changed versions)
  - 4.4 Compulsory Acquisition Schedule
  - 5.8 Other Consents and Licences
  - 6.2.5.1 Environmental Statement – Volume 2 – Appendix 5.1 – Outline Construction Worker Travel Plan
  - 6.2.5.2 Environmental Statement – Volume 2 – Appendix 5.2 – Outline Construction Traffic Management Plan
  - 6.2.9.10 Environmental Statement – Volume 2 – Appendix 9.10 – Biodiversity Net Gain Assessment
  - 6.4 Environmental Statement Commitments Register
  - 6.5 Outline Construction Environmental Management Plan
  - 6.7 Outline Landscape and Biodiversity Strategy
  - 6.8 Flood Risk Assessment
- Additional Examination Documents
  - 8.1.8 Statement of Common Ground with the Health and Safety Executive
  - 8.2.2 Schedule of Changes for Deadline 2
  - 8.4.4 Supplemental Environmental Information – Bat Activity Survey
  - 8.4.6 Outline Public Rights of Way Management Plan
  - 8.4.7 Landscape and Visual Amenity Effects – Appropriateness of Mitigation
  - 8.5.2 Accompanied Site Inspection – Suggested Locations and Justifications (updated)
  - 8.5.3 Applicant's Response to Examining Authority's First Written Questions
  - 8.5.4 Supplemental Statement of Reasons
  - 8.5.5 Removal of Stage 0 Mitigation Review
  - 8.5.6 Plans Identifying Additional Land
  - 8.5.7 Additional Land Application
  - 8.5.4 Schedule of Negotiations

## 2 ALTERNATIVES, NEED AND CLIMATE EFFECTS

Table 2-1 - ExA Written Question – ANC 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.1 | Applicant   | <p><b>Baseline</b></p> <p>Chapter 3 ES and subsequent ES Chapters set out the baseline conditions for each aspect matter and at each stage of the Proposed Development process. The current baseline is defined as three units operating using biomass and three units using coal. The future baseline is defined as four units operating biomass and two units on coal.</p> <p>i) Confirm when the proposed unit to be converted from coal to biomass will be operational.</p> <p>ii) Confirm whether any conversion earlier than late 2018 affects the scope and assessment in the ES.</p> |

2.1.1 With respect to part (i) of the question, the fourth unit was commissioned as a biomass unit in August 2018.

2.1.2 With respect to part (ii) of the question, the date of conversion is consistent with the assumptions of the Environmental Statement (with respect to the future baseline) and as a result the scope and assessment are unaffected.

Table 2-2 - ExA Written Question - ANC 1.2

| ExA Ref | Question to | Question                                                                                                                                                               |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.2 | Applicant   | <p><b>Do Nothing</b></p> <p>Explain why the 'Do Nothing' Scenario is described only in the Air Quality, Noise and Vibration and Climate aspect Chapters of the ES.</p> |

2.1.3 The stages assessed as part of the ES are set out in the Environmental Statement Chapter 3 – Site and Project Description (Examination Library ref APP-071), Table 3-8. These are the current baseline, future baseline, Site Reconfiguration Works (Stage 0, now removed from the DCO Application), Construction of Unit X (Stage 1), Operation of Unit X and construction of Unit Y (Stage 2) and Operation of Units X and Y (Stage 3).

2.1.4 The “do nothing” scenario referred to in the Air Quality (Examination Library ref APP-074), Noise and Vibration (Examination Library ref APP-075) and Climate (Examination Library ref APP-083) Chapters is the same as the future baseline. This describes a scenario in which Drax Power Station continues to operate in the absence of the Proposed Scheme with four biomass fired units and two coal fired units from late 2018 onwards. The Transport (Examination Library ref APP-073) and Biodiversity Chapters (Examination Library ref APP-

077) also assess the impact of the Proposed Scheme against the future baseline of four biomass fired units and two coal fired units.

- 2.1.5 In all other ES Chapters (heritage, landscape and visual amenity, ground conditions, waste, socio economic, and major accidents) the future baseline scenario (i.e. the “do nothing” scenario) is considered. However, as there is no change between the current baseline and future baseline scenarios in so far as they affect those particular assessments, only the current baseline is assessed in those chapters.

Table 2-3 - ExA Written Question - ANC 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.3 | Applicant   | <p><b>Fuel Source</b></p> <p>Chapter 4 of the ES sets out the alternatives to the Proposed Development examined by the Applicant. Paragraph 4.8.3 states that, aside from natural gas and biomass, the only other alternative fuel sources considered were waste and nuclear.</p> <p>Both were ruled out on viability grounds.</p> <p>Mr May in his Relevant Representation (RR) suggests fuel sources such as biogas and synthetic gas should also have been considered.</p> <p>i) Explain why these fuel sources were not explored.</p> <p>ii) Explain whether any assessments were undertaken of other types of energy production.</p> <p>iii) Justify the approach that an assessment of waste and nuclear fuel sources represents a reasonable assessment of alternatives.</p> |

- 2.1.6 One of the key objectives of the Proposed Scheme is the re-use of existing facilities and infrastructure onsite, including the steam turbine sets associated with Units 5 and 6, the cooling water infrastructure including abstraction and discharge facilities, and the electrical connection infrastructure and existing capacity within the 400kV substation. The use of these facilities improves overall efficiency, reduces construction time and also drives down the capital costs of the Proposed Scheme.
- 2.1.7 In order to repower the two remaining existing coal units, it is necessary to have a fuel source which is available at sufficient capacity, reliable in terms of volume, quality and chemical composition and with a lower carbon intensity than coal, as well as allowing the Proposed Scheme to be economically feasible. The only two fuels capable of fulfilling this remit are natural gas and biomass. The conversion of Units 1 to 4 from coal to biomass was economic due to the support from subsidies. With no future subsidies envisaged to assist in making biomass viable, the Applicant has ruled out converting Units 5 and 6 to biomass. With respect to part (i) of the question, biogas and synthetic gas were not explored as options because neither power generation systems nor associated infrastructure have been developed and tested at the scale required to repower the existing gas turbines and steam turbines associated with Units 5 and 6 and do not, therefore, meet the Applicant's objectives.
- 2.1.8 Other considerations associated with biogas generation onsite include:



- Volume of waste required to be processed and the time taken to generate and store the quantities of biogas to fuel the gas turbines.
- Transport of waste to the Drax site would encompass hundreds of HGV movements per day.
- Area onsite required to be identified for waste reception, processing and then biogas generation which would be challenging to provide within the Existing Drax Power Station Complex.
- Impact on the gas turbines of off-spec biogas, e.g. acid content and corrosion issues.
- Biogas attracts higher Associated Emissions Levels (AELs) compared with natural gas with recognition that the composition and quality will be variable and not easily controlled. Biogas by its very nature is generated from a range of different feedstocks resulting in gas with varied calorific values, moisture content and chemical composition. Biogas technology is listed within the LCP BREF Document which quotes a maximum output of 15MWe and a wide range of efficiencies between 28% and 38% (Table 7.19). The relevant BREF chapter (chapter 7.2 Combustion of Biogas) goes on to state that:

*'As biogas contains sulphur, its combustion may generate higher SOX emissions than when combusting natural gas and the use of CO catalysts may be constrained, causing higher CO emissions.*

*Furthermore, the impurities of the biogas may lead to deposits forming on the SG [spark-ignited] engine's internal components, which could restrict the achievable NOX level.*

*NOX levels far below 190 mg/Nm<sup>3</sup> at 15 % O<sub>2</sub> are difficult to achieve over the operational life of an engine, because of the drift of emissions caused by the resulting isolation effects and the change in combustion chamber geometry.*

Link to Large Combustion Plant Best available technology reference document (BREF Note): <http://eippcb.jrc.ec.europa.eu/reference/lcp.html>

- 2.1.9 In addition, there is currently no national transmission system for either biogas or syngas which Drax could connect into, and no agreed technical specification for biogas and syngas, for example calorific value, moisture, chemical composition etc. This would make the operation of any combustion plant and compliance with emissions limits extremely challenging since the fuel composition may change significantly from one day to the next. Accordingly, the use of biogas or syngas to repower Units 5 and 6 is technically challenging, not practical or feasible.
- 2.1.10 With respect to part (ii) of the question, assessments of other types of energy generation were not undertaken as no other source was considered to be suitable to meet Drax's objectives. The key focus for Drax is to look for a fuel which can provide National Grid with flexible, reliable electricity generation which is economically competitive and hence is highly efficient. The only fuel which can genuinely fulfil this remit and maintain a diverse fuel blend is natural gas. Drax has historically looked at various energy generating technologies and has invested significantly in electricity generation from low carbon fuels such as biomass, converting 4 of its 6 units from coal to biomass, investing in its biomass supply chain, port handling facilities and specialised rolling stock to transport the biomass wood pellets from ports to the power station. Currently, Drax has commenced looking at the possibility of

BioEnergy Carbon Capture and Storage (BECCS). Drax is a forward looking, innovative company. In respect of its objectives for Units 5 and 6, only natural gas can meet those objectives and meet the Government's aim of producing more electricity, given demand is increasing, whilst decreasing carbon emissions per MW.

- 2.1.11 With respect to part (iii) of the question, National Policy Statement (NPS) EN-1 refers in numerous places to the UK's energy mix and the need for this mix to be diverse in its make-up. This energy mix consists of renewables, fossil fuels and nuclear. The assessment of alternatives including nuclear and wastes meets two of the listed energy types referenced in the NPS as essential for the future UK energy mix; the fuel selected, namely gas, meets the remaining energy type.
- 2.1.12 Further, the requirement in Regulation 14(2)d) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 is that the ES include "*a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics...*". The Applicant has therefore assessed the reasonable alternatives it has considered as being able to meet its objectives for the Proposed Scheme (as set out in paragraph 4.1.2 of Chapter 4 of the ES (Examination Library ref APP-072), and which are therefore relevant to the specific characteristics of the Proposed Scheme. As explained above in response to this question, other fuel sources were not considered as reasonable alternatives, as they did not meet the scheme objectives, in particular, the re-utilisation of as much existing infrastructure as possible, maximising the efficiency of the Drax Power Station, and increasing the flexible, response generating capacity of Drax Power Station to meet increasing demand across the UK.

Table 2-4 - ExA Written Question - ANC 1.4

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                              |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.4 | Applicant   | <b>Fuel Source</b><br>Comment on the assertions of a considerable majority RRs (too numerous to list here), and Interested Parties at the Open Floor Hearing held on Thursday 4 October that the Proposed Development would eventually be sourced by an unconventional gas source, such as shale gas. |

- 2.1.13 The Applicant has sought a Network Exit Agreement (NEXA) and Planning and Advanced Reservation of Capacity Agreement (PARCA) with respect to the Proposed Scheme with National Grid Gas, the owner and operator of the National Transmission System (NTS). Drax, as a customer of National Grid Gas, has no control or influence regarding where National Grid Gas sources its gas capacity from. It is for National Grid to source its gas and supply that gas to the Applicant and to its other customers.
- 2.1.14 The Government has made it clear in the Overarching National Policy Statement for Energy (EN-1) that gas will be a vital part of the UK's energy generation mix. UK Government decisions on planning policy with respect to the use of unconventional gas sources will be subject to separate scrutiny, including environmental and sustainability assessments. Similarly, projects to extract and supply the gas will be subject to their own approval process to ensure they are consistent with Government policies. It follows that consideration of gas

sources for the Proposed Scheme are outside the scope of the Examination of the Application.

Table 2-5 - ExA Written Question - ANC 1.5

| ExA Ref | Question to | Question                                                                                                                      |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.5 | Applicant   | <b>Battery Storage</b><br>Explain whether this technology is or has been widely used and available in other similar projects. |

- 2.1.15 A 100MW battery storage facility has been built by Tesla in South Australia, commissioned and active on 5th October 2017, to reduce incidents of lost power. This facility, like the Proposed Scheme, is co-located with power generation in the form of the Hornsdale Wind Farm. The battery is expected to power up to 30,000 homes for up to one hour and is used to support and stabilise the existing electricity supplies by providing Frequency Control Ancillary Services (FCAS).
- 2.1.16 Smaller banks of batteries are installed across the world in Southern California, Hawaii, New Zealand, in the UK and on several Pacific islands.
- 2.1.17 Next year, a battery storage facility 50% larger than Tesla's in South Australia will be turned on in South Korea. Chinese firms and many other innovative renewable energy firms, such as the Applicant, are installing battery storage systems for power suppliers around the world to support the grid and provide capacity at short notice.

Table 2-6 - ExA Written Question - ANC 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                   |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.6 | Applicant   | <b>OCGT and CCGT</b><br>i) Explain the circumstances and proportion of time that the proposed Units X and/or Y would operate on open cycle technology.<br>ii) Justify the approach to the use of open cycle, and whether this represents the most sustainable option and Best Available Techniques against combined cycle. |

- 2.1.18 With respect to part (i) of the question, there are three main scenarios where the Proposed Scheme would operate in Open Cycle (OCGT) mode. These scenarios and the justification for them are as follows

- 1) During periods when the plant is instructed by National Grid to supply electricity for short periods of time. This would fulfil one of the Applicant's objectives to provide services for (a) capacity shortfalls and (b) electricity grid (system) support services. National Grid is responsible for ensuring that the national transmission system is

operated within a number of defined technical limits to ensure its safety and stability, and it relies on thermal generation (such as gas fired power stations) to provide services that ensure this safety and stability. This is because gas fired power stations can increase or decrease their electrical output in response to the demands of the transmission system, making them particularly useful sources of flexibility when needed at short notice. Operating in OCGT mode enables the Proposed Scheme to meet this requirement by providing services for grid support, voltage control and black start capability. A major benefit of the OCGT mode is that it enables the plant to supply large amounts of electricity to the grid over relatively short periods of time. During these events, it is expected that the plant would not operate for extended periods (normally periods of up to a few hours). Should the plant be required to operate for longer periods (i.e. more than a few hours), then the preference would be to move the plant into combined cycle (CCGT) mode in order to benefit from the increased efficiency, thereby generating more units of electricity per unit of fuel used.

- 2) During periods of breakdown or maintenance of the steam components of the system. During these periods, the open cycle elements of the generating units would still be able to provide electricity to the grid to provide necessary capacity or system support services.
- 3) The OCGT option protects National Grid from a full load trip (i.e. the loss of the total capacity of Unit X or Unit Y). In OCGT mode, by bypassing the HRSG, the Proposed Scheme would maintain capacity of up to 1000MW if the steam turbine were to trip.

2.1.19 Under each of these scenarios, the amount of time that the Proposed Scheme would operate in OCGT mode would vary. The proportion of the number of hours in a year when the plant would operate in either OCGT or CCGT mode could vary significantly from year to year.

2.1.20 With respect to part (ii) of the question, under all of the above scenarios, the operation of the Units for 1,500 hours (as a rolling average over five years) represents BAT as acknowledged by the inclusion of this operating regime in the IED and the Best Available Techniques Reference (BReF) Notes Implementing Decision. The BReF accommodates operation in OCGT mode by providing specific Associated Emission Limit (AEL) values for gas turbines operating in this mode. Operation of plant in OCGT mode for a rolling average of 7,500 hours as a five year rolling average is an operating regime (equivalent to 1,500 hours per year) is a well established operating regime and plants operating under this regime have been granted Environmental Permits in England.

Table 2-7 - ExA Written Question - ANC 1.7

| ExA Ref | Question to | Question                                                                                                                                                                              |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.7 | Applicant   | <p><b>Carbon Capture Storage</b></p> <p>The Environment Agency in its RR states that additional information is required before they can conclude whether there are no foreseeable</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>barriers to carbon capture with regards to technical feasibility, including the following:</p> <ul style="list-style-type: none"> <li>○ A scaled plan to identify the CO<sub>2</sub> pipeline and exit point;</li> <li>○ Details of the space requirements for the carbon capture equipment, along with an explanation of how space allocations have been determined;</li> <li>○ A statement of estimated cooling demand and that the space allocated is sufficient;</li> <li>○ A statement of estimated additional compressed air requirements, along with the size of the compressor and their location;</li> <li>○ Details of the estimated additional waste water treatment needs and that the existing effluent treatment plant can meet this demand;</li> <li>○ Confirmation that emissions will be the same or lower in Open Cycle Gas Turbine (OCGT) mode than in Combined Cycle Gas Turbine (CCGT) mode, and if not, an assessment of carbon capture readiness against OCGT mode; and</li> <li>○ Confirm how the carbon capture equipment will be able to operate at 90% efficiency in OCGT mode.</li> </ul> <p>i) Justify why this information is not required for this Application; or</p> <p>ii) Provide this information, and confirm the extent to which it alters the assessment presented in the ES.</p> <p>iii) Confirm that the parameters of the buildings as set out in the dDCO [AS-012] leave sufficient space for the carbon capture readiness.</p> |

2.1.21 As noted in the question, as part of their RR, the Environment Agency (EA) has reviewed application document 5.7 Carbon Capture Readiness Statement (Examination Library ref APP-067) and asked the Applicant to provide additional information or clarification (as outlined in the question above). The Applicant has addressed each request from the EA as set out below. Where the response to the EA has indicated that further information will be provided in the revised Carbon Capture Readiness Statement, this has been included in a revised version of this document which is being discussed with the EA and which will be submitted to the Examination at a future deadline.

2.1.22 With respect to a scaled plan to identify the CO<sub>2</sub> pipeline and exit point, the Applicant has responded to the EA on 12<sup>th</sup> October 2018 as follows:

*Figure 5 of Appendix 1 of the CCR Statement provides the favoured route (1km corridor for first 10km and 10km corridor after).*

*The final stage of the process before the CO<sub>2</sub> is piped away is to the CO<sub>2</sub> compressor plant. The proposed exit point for CO<sub>2</sub> has been considered when locating the compressor plant within the Plot Plan. The CCR Statement and plot*



*plans will be updated to provide clearer details of the CO2 pipeline exit point from the CCR Plant.*

- 2.1.23 With respect to details of the space requirements for the carbon capture equipment, along with an explanation of how space allocations have been determined, the Applicant has responded to the EA on 12<sup>th</sup> October 2018 as follows:

*a) Flue gas pre-treatment and CO2 drying and compression is provided on Figures 3 and 4 in Appendix 1, Legend Item 1, 2, 3, 4, 6, 7, 9, 10 and 11. The areas have been sized based on Siemens Plot Plan for a Siemens designed CCP (Drawing – “Info Package Reference Power Plant SCC5-8000H 1S”. Siemens have confirmed that the plots for the equipment do not need to be increased for a 9000HL GT).*

*b) Route for flue gas duct shown to CCR Plant in Figure 3 and Figure 4 in Appendix 1. The exact location of the flue gas stacks has not been finalised, so route shown is indicative only. It has been confirmed that there is sufficient space to locate the duct to the CCR Plant.*

*c) Section 7.4.10 of the CCR statement assumes steam is extracted from the cold reheat (CRH) lines through installation of off-take ports. To allow retrofitting and integration, this would require space for an off-take port on each CRH line as well increasing the de-superheating capability. The new Proposed Scheme is based on a design from Siemens. Siemens have confirmed that there is suitable space provision in the design to allow for retrofitting and integration.*

*d) Space allocation for unloading, storage and handling of amines is provided on Figures 3 and 4 in Appendix 1, Legend Item 5. Space allocation for infrastructure for handling of CO2 is provided on Figures 3 and 4 in Appendix 1, Legend Item 7. The areas have been sized based on Siemens Plot Plan for a Siemens designed CCP (Drawing – “Info Package Reference Power Plant SCC5-8000H 1S”. Siemens have confirmed that the plots for the equipment do not need to be increased for a 9000HL GT).*

- 2.1.24 With respect to a statement of estimated cooling demand and that the space allocated is sufficient, the Applicant has responded to the EA on 12<sup>th</sup> October 2018 as follows:

*Drax and Siemens have provided confirmation that the existing cooling towers can be utilised to meet the full cooling demand for the CCP when the Proposed Scheme is operating in OCGT mode and CCGT mode. The CCR Statement will be updated to provide detail of use of the existing cooling towers and remove reference to cooling from air cooled units. The area designated for “9. Cooling and Utilities” on the CCR Statement Plot Plans will be reduced in size so it accommodates the space required for utilities only.*

- 2.1.25 With respect to a statement of estimated additional compressed air requirements, along with the size of the compressor and their location, the Applicant has responded to the EA on 12<sup>th</sup> October 2018 as follows:

*Process compressed air will not be required.*



*Service air and instrument air will be required intermittently (continuous flow not required). It is envisaged this will be provided by a new air compressor system on the CCP site in the utilities area. Alternatively, a compressed air supply could be taken from the Existing Drax power Station Complex. It has been confirmed there is adequate reserve in the existing system to supply the intermittent requirements for the CCP.*

- 2.1.26 With respect to details of the estimated additional waste water treatment needs and that the existing effluent treatment plant can meet this demand, the Applicant has responded to the EA on 12<sup>th</sup> October 2018 as follows:

*Estimated waste water discharge for the CCP is provided below:*

- 60 kg/s for the 1,800 MW case
- 120 kg/s for the 3,600 MW case

*Drax have confirmed that the process waste water discharge from the CCP can be sent to either the existing effluent treatment plant or the existing flue gas desulphurisation unit. Both options independently have the capacity to take in the waste water discharge from the CCP.*

Note, following the Applicant's response to the EA, Siemens provided additional information based on refined waste water discharge flows. These flows are listed below and have been revised in the CCR Statement which has been submitted to the EA for discussion:

- 30.85 kg/s for the 1,800 MW case
- 61.7 kg/s for the 3,600 MW case

- 2.1.27 With respect to confirmation that emissions will be the same or lower in Open Cycle Gas Turbine (OCGT) mode than in Combined Cycle Gas Turbine (CCGT) mode, the Applicant has responded to the EA on 12<sup>th</sup> October 2018 as follows:

*For OCGT mode, the overall plant electrical output will be less than in CCGT mode but the operation of the gas turbine will essentially be unchanged and so the CO<sub>2</sub> emissions from the gas turbine flue gases in OCGT mode will be the same as in CCGT mode.*

- 2.1.28 With respect to confirmation on how the carbon capture equipment will be able to operate at 90% efficiency in OCGT mode, the Applicant responded to the EA on 12<sup>th</sup> October 2018 as follows:

*To allow for an overall 90% capture efficiency (for capture of CO<sub>2</sub> from all flue gases) to be maintained for OCGT mode, the following additional plant equipment / requirements will be detailed in the updated CCR Statement:*

- *Alternate steam supply due to OCGT mode of operation and so no steam supply from CRH line. In OCGT mode of operation, steam will be provided from new auxiliary boilers to be located on the CCP site. (As the space provision for the air-cooling unit is not required, there is sufficient space to locate the auxiliary boilers. This has been demonstrated in updated Figure 3 and 4 in Appendix 1).*

- *To offset the additional CO<sub>2</sub> emitted from the auxiliary boilers in OCGT mode, the CCS chain will need to increase in size to allow for an increased capture rate from the power plant flue gases. A conservative scaling factor of 1.2 (20% increase) has been assumed. An increased capture rate is required through the CCS chain to ensure an overall 90% capture rate can be maintained for all flue gases (power plant and auxiliary boiler flue gases). (As the space provision for the air cooling unit is not required, there is sufficient space to locate the scaled-up CCS chain equipment. This has been demonstrated in updated Figure 3 and 4 in Appendix 1).*
- *Higher temperature flue gas so an additional flue gas cooler will need to be included within the design and space provision included on the plot plan. (As the space provision for the air cooling unit is not required, there is sufficient space to locate the additional flue gas cooler. This has been demonstrated in updated Figure 3 and 4 in Appendix 1). The additional flue gas cooler will be installed prior to the other flue gas cooler and only be used when the power plant is being operated in OCGT mode. The additional flue gas cooler will be bypassed when the plant is operating in CCGT mode.*
- *Increased cooling load to provide cooling water to the additional flue gas cooler. It has been confirmed that the cooling load from the existing cooling towers can provide the load required for the additional flue gas cooler and the other CCP cooling requirements.*

- 2.1.29 Application document 5.7 Carbon Capture Readiness Statement has been updated to incorporate the additional information / clarification required from the EA.
- 2.1.30 In response to part (ii) of question ANC 1.7, it is confirmed that the additional information added to the CCR Statement does not alter the assessment presented in the ES,
- 2.1.31 In response to part (iii) of question ANC 1.7, it is confirmed that the parameters of the buildings as set out in the dDCO (Examination Library ref AS-012, with a revised version submitted at this Deadline 2) leave sufficient space for carbon capture readiness. This has been demonstrated in Figure 3 and Figure 4 in Appendix 1 of the updated CCR Statement (which is currently with the EA and which will be submitted to the Examination at a future deadline).

Table 2-8 - ExA Written Question - ANC 1.8

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.8 | Applicant   | <p><b>Combined Heat and Power</b></p> <p>The Environment Agency in its RR states that a site layout plan has not been submitted indicating that sufficient space exists for combined heat and power. It also states that the selection of heat loads also could have planning implications as it could dictate the site infrastructure and affect the footprint of any development required.</p> <p>i) Provide a justified response to both concerns raised.</p> <p>ii) Provide this plan.</p> |

2.1.32 As noted in the question, as part of their RR, the Environment Agency (EA) has reviewed application document 5.6 Combined Heat and Power Statement (Examination Library ref APP-066) and have asked the Applicant to provide additional information or clarification (as outlined in the question above).

2.1.33 With respect to the selection of heat loads, the Applicant has responded to the EA on 1st October 2018 as follows:

*The maximum available heat load from the Drax Repower plant has been identified in the CHP Statement as 458.8MW (Heat load from both Unit X and Unit Y). It is noted that a 458.8MW heat load is considered a significant amount of heat and can be compared to the heat demand for a city the size of Leeds or Manchester. Realistically, this extent of heat demand would never be required in the assumed 15 km radius around the Proposed Scheme. For comparison, the largest existing single load identified in the CHP assessment was from a large industrial site and was 41,000MWh (equivalent to a continuously supplied heat load of 4.7MW).*

*Based on the location of the power plant and the potential future heat demand available, we believe a more realistic size for a CHP Scheme would be a maximum of 100MW. A CHP Scheme of this size will be more than a sufficient heat load to provide for multiple large industrial plants and / or new large domestic dwellings. As such, a CHP Scheme to provide up to 100MW heat load has been assumed for plot sizing.*

2.1.34 With respect to whether sufficient space exists for combined heat and power, the Applicant has responded to the EA on 1st October 2018 as follows:

*The space required for a CHP Scheme depends on a several factors, with the main one being steam / water parameters of user. As any potential users parameters are unknown, we can assume a worst case in terms of required plant footprint, which would be provision of heat load for district heating.*

*Required footprint would be based on the following:*

- *Retrofit of the Proposed Scheme to allow installation of a steam extraction line off the cold reheat line. It has been confirmed that design of the cold reheat line will enable future retrofit to install a steam extraction line.*
- *Plot area on the Existing Drax Power Complex to locate equipment required for a district heating scheme. Equipment will include steam-to-LTHW (low temperature hot water) plate heat exchangers, back up boilers, thermal storage vessel, expansion vessels, district heating pumps and electrical auxiliaries building. Based on real project data, we have assumed a plot of 2000 m2 (conservative estimate) would be required to locate this plant.*

*Drax Power Ltd have confirmed there is sufficient space on the Existing Drax Power Complex to locate this 2000m2 plot. The exact location of this plot will be driven by the location of any future heat load user and the exit point for the water / steam pipes. As this location is not known, it was decided to not include a site layout plan. It is however proposed to update the CHP Assessment to include the additional detail on plot size and list potential areas within the Existing Drax Power Complex that the CHP Scheme can be located.*

- 2.1.35 The Applicant intends to update document 5.6 Combined Heat and Power Statement (Examination Library ref APP-066) to include the additional detail outlined above, following the receipt of further comments (if any) from the EA in response to the information provided. At that time, the revised Combined Heat and Power Statement will be submitted to the Examination. As a result of the additional information that will be provided in the CHP Statement, the Applicant does not intend to submit a plot plan.

Table 2-9 - ExA Written Question - ANC 1.9

| ExA Ref | Question to  | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.9 | Client Earth | <p><b>Need</b></p> <p>Paragraph 3.1.2 of National Policy Statement (NPS) EN-1 states that it is for industry to propose new energy infrastructure projects within the strategic framework set by Government, and that the Government does not consider it appropriate for planning policy to set targets for or limits on different technologies.</p> <p>In your RR [RR-273] you state that the Proposed Development would not be consistent with NPSs EN-1 and EN-2 as there is no need for this additional capacity in view of current Government projections.</p> <p>Substantiate your views in light of the NPS paragraph cited above.</p> |

- 2.1.36 The Applicant will respond to this question once it receives Client Earth's response.

Table 2-10 - ExA Written Question - ANC 1.10

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.10 | Applicant   | <p><b>Need</b></p> <p>In addition to the views of Client Earth in its RR, Mr May in his RR states that the Proposed Development would exceed 10% of the current UK energy demand.</p> <p>i) Explain the relevance of national targets for energy generation.</p> <p>ii) Provide these targets.</p> <p>iii) Explain whether both Units X and Y, are required to meet current energy need and/or demand.</p> <p>iv) If Unit X alone is sufficient to meet UK energy need and/or demand, explain how the additional Greenhouse Gas Emissions (GHG) that would be generated by the Proposed Development (Units X and Y) is justified.</p> <p>v) Provide a response to Client Earth's and Mr May's RRs.</p> |

- 2.1.37 With respect to part (i) of the question, the Applicant is not aware of any overall energy generation targets. Generation will evolve to supply demand and there are a range of industry forecasts for this, notably the National Grid Future Energy Scenarios (FES). There are, however, binding targets for renewables in the energy mix.
- 2.1.38 National Policy Statement EN-1 states at paragraph 3.3.14 that Government *expects "that demand for electricity is likely to increase, as significant sectors of energy demand (such as industry, heating and transport) switch from being powered by fossil fuels to using electricity. As a result of this electrification of demand, total electricity consumption (measured in terawatt hours over a year) could double by 2050. Depending on the choice of how electricity is supplied, the total capacity of electricity generation (measured in GW) may need to more than double to be robust to all weather conditions. In some outer most circumstances, for example if there was very strong electrification of energy demand and a high level of dependence on intermittent electricity generation, then the capacity of electricity generation could need to triple. The Government therefore anticipates a substantial amount of new generation will be needed."*
- 2.1.39 Whilst paragraph 3.3.23 of EN-1 states that *"Government therefore believes it is prudent to plan for a minimum need of 59GW of new electricity capacity by 2025", paragraph 3.3.24 goes on to say that "[i]t is not the Government's intention in presenting the above figures to set targets or limits on any new generating infrastructure to be consented in accordance with the energy NPSs. It is not the [Secretary of State's] role to deliver specific amounts of generating capacity for each technology type. The Government has other mechanisms to influence the current delivery of a secure, low carbon, affordable electricity mix. Indeed, the aim of the Electricity Market Reform project (see Part 2 of this NPS for further details) is to review the role of the variety of Government interventions within the electricity market."*
- 2.1.40 With respect to part (ii) of the question, as part of its membership of the European Union, the UK has committed to a national target to provide 15% of its energy needs from renewable sources by 2020. The overall obligation includes three sub-targets: 30% in electricity, 12% in heat and 10% in transport. According to the Department for Business, Energy and Industrial Strategy's Digest of UK Energy Statistics 2018, renewable generation in the electricity sector increased to 29.3% in 2017 – just 0.7% short of the 2020 target.
- 2.1.41 Beyond 2020 there are no binding targets in the power sector in terms of the amount of renewable generation on the system or quotas for specific technologies.
- 2.1.42 With respect to part (iii) of the question, National Grid in its capacity as the operator of the national electricity system publishes its Future Energy Scenarios report every year, which considers how the energy sector in the UK could evolve through to 2050 across four illustrative pathways. These pathways take into consideration a range of sensitivities including behavioural change from consumers and innovation in technology. These pathways are rigorously tested, reviewed and developed with input from stakeholders across the energy sector to ensure they are robust, credible and reflect the changing energy landscape.



- 2.1.43 In the 2018 version of the Future Energy Scenarios report, all four of National Grid's scenarios show that electricity demand is forecast to rise from 2030 onwards. This is due to a range of factors, including the electrification of the transport system in all scenarios and then the electrification of heat in some scenarios. Compared to electricity demand of 297 TWh today, this rise ranges from 25% (373 TWh, Two Degrees Scenario) to 48% (441 TWh, Community Renewables Scenario for 2050)<sup>1</sup>. Taking into consideration this expected increase in the demand, alongside the expected decommissioning of a number of aging coal and nuclear power stations throughout the 2020s, it is clear that additional new build thermal generation is required on the system to ensure national electricity demand and supply can continue to be balanced in real time.
- 2.1.44 In addition to balancing demand and supply, National Grid, as the system operator, is also responsible for ensuring that the national transmission system is operated within a number of defined technical limits to ensure its safety and stability. It does this by procuring a range of services from generators to maintain the stability of the national transmission system. These services include:
- Voltage control: transferring power across the network.
  - Frequency response: ensuring the speed of the system is synchronised nationally at 50 Hz.
  - Inertia: slowing the rate of a sudden frequency change.
  - Reserve power: reacting quickly to a sudden loss on the system.
  - Black start: kick-starting the transmission network in the event of a catastrophic failure.
- 2.1.45 Further detail about these services can be found at <https://www.nationalgrideso.com/balancing-services/system-security-services>.
- 2.1.46 National Grid is reliant on coal and gas-fired power stations to provide these services because they can increase or decrease their output at relatively short notice when required (i.e. they are dispatchable). In contrast, intermittent sources of generation such as wind and solar are not able to provide all of these services as they are weather-dependent and hence are not controllable and cannot adjust their output when required.
- 2.1.47 Therefore, as wind and solar accounts for an even greater share of the power sector in the future, it is going to be increasingly important to have dispatchable forms of generation to complement their output. This is consistent with National Grid's Future Energy Scenarios, which forecasts that 30.7 GW–31.7 GW of gas capacity would be required on the power grid in 2030 whilst at the same time staying on track to meet our carbon budget targets.
- 2.1.48 There is no dispute that electricity generation demand is increasing and is set to increase to 2050. As NPS EN-1 at paragraph 3.3.14 makes clear, it is not the planning system's role to "deliver specific amounts of generating capacity for each technology type." To meet the urgent need established in NPS EN-1, therefore, there is a need for both Unit X and Unit Y.

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<sup>1</sup> The Two Degrees and Community Renewables Scenarios are the two Future Energy Scenarios forecast to meet the UK's 2050 decarbonisation target.



- 2.1.49 When these plants come forward post consent, would then be down to the Electricity Market Reform. As paragraph 3.3.23 of NPS EN-1 states, the “*Government has other mechanisms to influence the current delivery of a secure, low carbon, affordable electricity mix. Indeed, the aim of the Electricity Market Reform project (see Part 2 of this NPS for further details) is to review the role of the variety of Government interventions within the electricity market.*” Every year, the Electricity Market Reform Delivery Body on behalf of the UK Government awards payments – known as ‘capacity contracts’ – to different technologies to ensure that the Great Britain power system has enough capacity on the system to maintain energy security. These contracts are awarded through a competitive auction four years in advance of the electricity being required, providing an incentive for existing generators to continue operating and sufficient timescales for new generators to construct their plant.
- 2.1.50 With respect to part (iv) of the question, the Applicant's position is that both Unit X and Unit Y is required to meet the rising electricity generation demand. The delivery of the Units, post any DCO, is then down to the Electricity Market as explained above. Whilst the precise level of electricity demand between now and 2050 is not known (as clearly demonstrated by National Grid's own Future Energy Scenarios (FES), as per the see data extracted from National Grid's FES in the answer to question ANC 1.15), what is certain (as similarly demonstrated by National Grid's FES) is that there will be an increase in electricity demand due the move towards electrification and decarbonisation. It is for this reason (i.e. that there is a clear increase in demand) that Drax is promoting both Unit X and Unit Y. The increase in GHG emissions in connection with Unit Y (although it should be noted that the GHG emissions are lower per megawatt than the existing coal fired units) is therefore justified on this basis.
- 2.1.51 With respect to part (v) of the question, Drax has responded to Client Earth's and Mr May's relevant representations in the Applicant's Responses to Relevant Representations Rev 001 (Examination Library ref REP1-013). The Applicant relies on its responses to those Relevant Representations, in particular at section 5.2, in respect of this question as well. The Applicant also intends to fully respond to Client Earth's answer to ANC 1.09, should they provide one.

Table 2-11 - ExA Written Question - ANC 1.11

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.11 | Applicant   | <p><b>Coal Units 5 or 6 and Gas Unit Y</b></p> <p>i) Explain why Unit Y is only optional.</p> <p>ii) What are the circumstances envisaged in which Unit Y would not be commenced.</p> <p>iii) Comment on the likelihood that Units 5 or 6 would operate beyond 2025 (with coal abatement) should Unit Y not be commenced given that the Proposed Development seeks only to provide land for carbon capture storage.</p> |

- 2.1.52 Unit Y is not "optional" and it is incorrect to refer to it as such. As with Unit X, and indeed as with any infrastructure project of this scale, investment decisions need to be taken before construction commences. Given Unit Y would follow the construction of Unit X, an investment decision would be taken over Unit X and then an investment decision would be taken over Unit Y. This is no different to other significant infrastructure projects. Of key importance in this decision is the capacity contract process referred to in answer ANC 1.10. Any changes to this process by the current or any new Government could impact the investment decision. Whilst the Applicant has visibility on the capacity contract process in respect of the timescale for Unit X, it does not have the same visibility in respect of Unit Y. For this reason, the decision whether to invest in Unit Y will be made in light of the Applicant's assessment of the market conditions at the time, taking into account market forecasts from industry experts.
- 2.1.53 With respect to part (iii) of the question, similar market conditions will determine whether Unit 5 or 6 would operate post 2025 as an abated coal-fired unit. Until Units 5 or 6 are repowered, there is the possibility of those units continuing to operate, including with abated coal post 2025. However, the land area identified to comply with the Carbon Capture Readiness (CCR) requirements does assume that both Units X and Y are repowered. If only Unit X was repowered and a scenario of developing an abated coal fired unit was taken forward, then the land area identified for Unit Y and the associated land area identified for carbon capture (Work Number 10) would both be available for the relevant infrastructure required for carbon capture from an abated coal fired unit.

Table 2-12 - ExA Written Question - ANC 1.12

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.12 | Applicant   | <p><b>Climate Effects</b></p> <p>The ExA is not convinced that the information contained within Chapter 15 of the ES contains a complete picture of the effect of the Proposed Development on climate change. Friends of the Earth in their RR also cite similar but vague concerns.</p> <p>Only two scenarios are provided. Firstly, the continued coal usage of Units 5 and 6 (the 'do nothing' scenario) and accounting for the change in regulations in 2025, Tables 15-8 and 15-15 of Chapter 15 of the ES state that GHG emissions will amount to 188,323,000 tonnes of CO<sub>2</sub> (tCO<sub>2</sub>e) for the period 2020-2050. Secondly, the scenario of both Units X and Y being built, which Tables 15-12 and 15-15 of Chapter 15 of the ES state that the total GHG emissions would be 287,568,000 tCO<sub>2</sub>e for the period 2023- 2050.</p> <p>The Proposed Development may only result in Unit X being built. Yet no information is provided on the scenario of Unit 5 operating alongside Unit X with abated coal, where Unit Y is not commenced. Those scenarios being:</p> <ul style="list-style-type: none"> <li>○ The total GHG emissions for the period 2023-2025 where Unit 5, operating under the existing Regulations, runs alongside Unit X;</li> </ul> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <ul style="list-style-type: none"> <li>○ The total GHG emissions for the period 2026-2046, where Unit 5 operating under new Regulations of emissions abatement, runs alongside Unit X;</li> <li>○ The total GHG emissions for the period 2047-2050 whereby Unit 5 operates following the closure of Unit X;</li> </ul> <p>While the ExA understand that the Applicant may be presenting the worst-case scenarios, the ExA nevertheless feels the Secretary of State will be assisted in a better understanding of the case if these figures were provided. Provide a table of all GHG emissions figures totals for all possible scenarios, broken down into the relevant time periods, and to clearly show the increase in GHG emissions in quantum and percentage terms over the existing baseline for each scenario.</p> <p>Specifically, the ExA requires the GHG emission increase should only Unit X be constructed.</p> |

2.1.54 The greenhouse gas (GHG) emissions have been calculated for a series of potential scenarios including that specified above. These calculations applied the same method and assumptions as presented in Chapter 15 of the ES (Examination Library APP-083), except where stated.

2.1.55 For each scenario, results are presented for three time-periods;

- 2023-2025: covering the period of operation of any new gas-powered unit, as well as coal-powered units prior to the government's proposed emissions intensity limit.
- 2026-2046: covering the period of operation of any new gas-powered unit(s), as well as coal-powered units following the government's proposed emissions intensity limit.
- 2047-2050: following de-commissioning of the proposed gas-powered unit X (as a worst-case, it is assumed that the remaining coal unit continues to operate throughout this period).

2.1.56 In each case, results are presented in terms of;

- Total electricity generation output (Million MWh)
- Total GHG emissions for the period (Million tCO<sub>2</sub>e)
- GHG emission intensity for the period per unit of electricity generation (gCO<sub>2</sub>e/kWh)

2.1.57 Scenario 1 represents the 'do nothing' baseline as referred to in the ES, whereby coal-powered Units 5 and 6 continue to generate, albeit after 2025 the emissions are abated to the government's proposed limit of 450 gCO<sub>2</sub>e/kWh.

Table 2-13 - Scenario 1

| <b>Scenario 1 (do nothing baseline in ES) – Units 5 and 6 abated coal generation post 2025</b> |                            | <b>2023-2025</b> | <b>2026-2046</b> | <b>2047-2050</b> |
|------------------------------------------------------------------------------------------------|----------------------------|------------------|------------------|------------------|
| Total generation output                                                                        | Million MWh                | 35               | 243              | 46               |
| Total GHG emissions (generation and 'Well to Tank' - WTT)                                      | Million tCO <sub>2</sub> e | 29               | 109              | 21               |
| GHG emission intensity (generation and WTT)                                                    | gCO <sub>2</sub> e/kWh     | 840              | 450              | 450              |

2.1.58 Scenarios 2, 3 and 4 are compared to Scenario 1: the 'do nothing' baseline, in absolute and percentage terms.

2.1.59 Scenario 2 represents no change to present operation, i.e. coal-powered Units 5 and 6 continue to generate electricity at the present emissions intensity (no emission abatement after 2025 and therefore not meeting the government's proposed limit, should that limit not come into force).

Table 2-14 - Scenario 2

| <b>Scenario 2 (no change) - Units 5 &amp; 6 continuing unabated coal generation</b> |                                 | <b>2023-2025</b> | <b>2026-2046</b> | <b>2047-2050</b> |
|-------------------------------------------------------------------------------------|---------------------------------|------------------|------------------|------------------|
| Total generation output                                                             | Million MWh                     | 35               | 243              | 46               |
| <i>Change compared to baseline (do nothing)</i>                                     | <i>Million MWh</i>              | -                | -                | -                |
| <i>Change compared to baseline (do nothing)</i>                                     | <i>%</i>                        | <i>0%</i>        | <i>0%</i>        | <i>0%</i>        |
| Total GHG emissions (generation and WTT)                                            | Million tCO <sub>2</sub> e      | 29               | 204              | 39               |
| <i>Change compared to baseline (do nothing)</i>                                     | <i>Million tCO<sub>2</sub>e</i> | -                | 95               | 18               |
| <i>Change compared to baseline (do nothing)</i>                                     | <i>%</i>                        | <i>0%</i>        | <i>87%</i>       | <i>87%</i>       |
| GHG emission intensity (generation and WTT)                                         | gCO <sub>2</sub> e/kWh          | 840              | 840              | 840              |
| <i>Change compared to baseline (do nothing)</i>                                     | <i>gCO<sub>2</sub>e/kWh</i>     | -                | 390              | 390              |
| <i>Change compared to baseline (do nothing)</i>                                     | <i>%</i>                        | <i>0%</i>        | <i>87%</i>       | <i>87%</i>       |

- 2.1.60 Scenario 3 includes the construction of one gas-powered Unit X (only) with one coal-powered unit retained, albeit after 2025 the emissions for this are abated to the government's proposed limit of 450 gCO<sub>2</sub>e/kWh. From 2047 Unit X is decommissioned in this scenario, and, as a worst-case assumption, one coal-powered unit remains in operation, with abated emissions.

Table 2-15 - Scenario 3

| <b>Scenario 3 – Unit X (only) constructed. Units 5 continues unabated coal post 2025</b> |                                 |  | <b>2023-2025</b> | <b>2026-2046</b> | <b>2047-2050</b> |
|------------------------------------------------------------------------------------------|---------------------------------|--|------------------|------------------|------------------|
| Total generation output                                                                  | Million MWh                     |  | 65               | 453              | 23               |
| <i>Change compared to baseline (do nothing)</i>                                          | <i>Million MWh</i>              |  | 30               | 210              | - 23             |
| <i>Change compared to baseline (do nothing)</i>                                          | %                               |  | 86%              | 86%              | -50%             |
| Total GHG emissions (generation and WTT)                                                 | Million tCO <sub>2</sub> e      |  | 33               | 228              | 19               |
| <i>Change compared to baseline (do nothing)</i>                                          | <i>Million tCO<sub>2</sub>e</i> |  | 3                | 118              | - 1              |
| <i>Change compared to baseline (do nothing)</i>                                          | %                               |  | 12%              | 108%             | -7%              |
| GHG emission intensity (generation and WTT)                                              | gCO <sub>2</sub> e/kWh          |  | 503              | 503              | 840              |
| <i>Change compared to baseline (do nothing)</i>                                          | <i>gCO<sub>2</sub>e/kWh</i>     |  | - 336            | 53               | 390              |
| <i>Change compared to baseline (do nothing)</i>                                          | %                               |  | -40%             | 12%              | 87%              |

- 2.1.61 Scenario 4 is the 'proposed scheme' as presented in Chapter 15 of the ES, with two gas-powered units constructed to replace the existing coal-powered units. Unit X begins operation in 2022 and continues to 2046 when it is decommissioned. Units Y begins operation in 2027 and continues to 2050 when it is decommissioned.

Table 2-16 - Scenario 4

| <b>Scenario 4 – operation of Unit X (2022-2046) and Unit Y (2027-2050)</b> |                    |  | <b>2023-2025</b> | <b>2026-2046</b> | <b>2047-2050</b> |
|----------------------------------------------------------------------------|--------------------|--|------------------|------------------|------------------|
| Total generation output                                                    | Million MWh        |  | 65               | 646              | 63               |
| <i>Change compared to baseline (do nothing)</i>                            | <i>Million MWh</i> |  | 30               | 404              | 17               |

| <b>Scenario 4 – operation of Unit X (2022-2046) and Unit Y (2027-2050)</b> |                            | <b>2023-2025</b> | <b>2026-2046</b> | <b>2047-2050</b> |
|----------------------------------------------------------------------------|----------------------------|------------------|------------------|------------------|
| <i>Change compared to baseline (do nothing)</i>                            | %                          | 86%              | 166%             | 36%              |
| Total GHG emissions (generation and WTT)                                   | Million tCO <sub>2</sub> e | 33               | 246              | 24               |
| <i>Change compared to baseline (do nothing)</i>                            | Million tCO <sub>2</sub> e | 3                | 136              | 3                |
| <i>Change compared to baseline (do nothing)</i>                            | %                          | 12%              | 125%             | 15%              |
| GHG emission intensity (generation and WTT)                                | gCO <sub>2</sub> e/kWh     | 503              | 380              | 380              |
| <i>Change compared to baseline (do nothing)</i>                            | gCO <sub>2</sub> e/kWh     | - 336            | - 70             | - 70             |
| <i>Change compared to baseline (do nothing)</i>                            | %                          | -40%             | -16%             | -16%             |

Table 2-17 - ExA Written Question - ANC 1.13

| <b>ExA Ref</b> | <b>Question to</b>       | <b>Question</b>                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.13       | Yorkshire Wildlife Trust | <p><b>Climate Effects</b></p> <p>In your RR [RR-320], you state that the Proposed Development would be incompatible with the Climate Change Act 2008, having regard to its requirements of carbon emissions being 80% lower than 1990 baseline levels.</p> <p>i) Justify this assertion.</p> <p>ii) Explain how the Proposed Development is incompatible with the legislation given that the compliance date is 2050.</p> |

2.1.62 The Applicant will respond to this question once it receives the Wildlife Trust's response.

Table 2-18 - ExA Written Question - ANC 1.14

| <b>ExA Ref</b> | <b>Question to</b> | <b>Question</b>        |
|----------------|--------------------|------------------------|
| ANC 1.14       | Applicant          | <b>Climate Effects</b> |



| ExA Ref | Question to | Question                                                                                                                                                    |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | Yorkshire Wildlife Trust in its RR considers the Proposed Development would be incompatible with the Climate Change Act 2008. Provide a justified response. |

- 2.1.63 First, it is not clear which provisions of the Climate Change Act Yorkshire Wildlife Trust (YWT) believes the Proposed Development would be incompatible with. It is felt noteworthy that YWT did not make the same assertion in their RR for the Eggborough project which constitutes 2.5GW of CCGT capacity and 299 MW of OCGT capacity (a total of 2.799GW of gas capacity).
- 2.1.64 In any event, the Proposed Scheme is not incompatible with the Climate Change Act 2008, given it complies with the relevant National Policy Statements and is in line with National Grid forecast scenarios, both of which have had regard to the UK Government's 2050 carbon budget.
- 2.1.65 Section 104(3) of the PA 2008 states that the Secretary of State ("SoS") must decide the Application in accordance with any relevant national policy statement ("NPS"). The Proposed Scheme is classed as an energy Nationally Significant Infrastructure Project ("NSIP") and as such must be assessed against the government's suite of Energy NPSs. Of relevance to gas fired generating stations are the Overarching National Policy Statement EN-1 and the National Policy Statement for Fossil Fuel Electricity Generating Infrastructure EN-2. National Policy Statements for Gas Supply Infrastructure EN-4 and National Policy Statement for Electricity Networks EN-5 are also relevant for the Proposed Scheme.
- 2.1.66 The purpose of the Energy NPSs is to transpose into planning policy the Government's commitment on climate change and the drive towards a low carbon economy. To date, the main driver of the country's carbon reduction has been the power generation sector, but all industry sectors have roles to play in decarbonisation. The electrification of non-power sectors is an important part of overall carbon emission reductions, as recognised by NPS EN-1, paragraph 2.2.1 *"We are committed to meeting our legally binding target to cut greenhouse gas emissions by at least 80%, compared to 1990 levels. Analysis done on possible 2050 pathways shows that moving to a secure low carbon energy system is challenging, but achievable. It requires major investment in new technologies to renovate our buildings, the electrification of much of our heating, industry and transport, prioritisation of sustainable bioenergy and cleaner power generation."*
- 2.1.67 It is clear that the country's pathway to a successful 2050 carbon budget must involve wider transitions outside of the power generation sector. As paragraph 2.2.1 of EN-1 states, decarbonisation of transport, industry, agriculture and the home are key areas that must reduce non-power sector emissions. However, it is only logical that to enable this wider transition, the power generation sector must increase in capacity whilst also looking for ways to reduce in carbon intensity.

Paragraph 3.3.14 of EN-1 states that "[Government] expect[s] the demand for electricity is likely to increase, as significant sectors of energy demand (such as industry, heating and transport) switch

*from being powered by fossil fuels to using electricity. As a result of this electrification of demand, total electricity consumption...could double by 2050."*

Whilst the country's total **energy demand** will likely reduce by 2050, **electricity demand** is expected to grow. NPS EN-1 recognises this, and the policy contained in NPS EN-1 therefore seeks to address it.

- 2.1.68 In addition, NPS EN-1 recognises that decarbonisation is just one aspect of the country's energy policy – low carbon generation brings with it other challenges. Energy policy also needs to ensure that security of supply is maintained and that electricity is affordable. So, NPS EN-1 is not only a policy that aims to reduce carbon emissions from the power generation sector, but to ensure security of supply and affordability:

*"...energy is vital to economic prosperity and social well-being and so it is important to ensure that the UK has secure and affordable energy." (EN-1, paragraph 2.1.2)*

*"...the Government believes that the NPSs set out planning policies which both respect the principles of sustainable development and are capable of facilitating, for the foreseeable future, the consenting of energy infrastructure on the scale and of the kinds necessary to help us maintain safe, secure, affordable and increasingly low carbon supplies of energy." (EN-1, paragraph 2.2.19)*

*"The Government needs to ensure that sufficient electricity generating capacity is available to meet maximum peak demand, with a safety margin or spare capacity to accommodate unexpectedly high demand and to mitigate risks such as unexpected plant closures and extreme weather events." (EN-1, paragraph 3.3.2)*

*"The larger the difference between available capacity and demand...the more resilient the system will be in dealing with unexpected events, and consequently the lower the risk of a supply interruption." (EN-1, paragraph 3.3.3);*

*"[A] diverse mix of all types of power generation...helps to ensure security of supply." (EN-1, paragraph 3.3.4)*

- 2.1.69 In summary, the policy contained in the Energy NPSs therefore seeks to (1) reduce carbon emissions in the power generation sector whilst balancing that need with (2) ensuring security of supply in an era when electricity demand is growing and (3) ensuring that electricity is affordable.

- 2.1.70 The policy in the Energy NPSs was the subject of consultation and assessment before being adopted as national planning policy to achieve those three aims. In particular, as part of the Appraisal of Sustainability ("AoS"), alternative policies were considered as required by the Strategic Environmental Assessment ("SEA") Directive. Paragraphs 1.7.5, 1.7.8 and 1.7.9 of NPS EN-1 provide a useful overview to that process. Those paragraphs state:-

*"1.7.5 As required by the SEA Directive, Part 3 of the AoS of EN-1 also includes an assessment of reasonable alternatives to the policies set out in EN-1 at a strategic level. In particular, this involved a generic assessment of alternatives which placed more emphasis on three key drivers of policy which are highly relevant to the planning context: securing low cost energy (Alternative A1); reducing greenhouse gas emissions (Alternative A3); and reducing other environmental impacts of energy infrastructure development (Alternative A4). There are many different possible changes which could be made to the individual planning policies set out in EN-1 to EN-5, and very large numbers of possible combinations of those different possible policies. However, any change which was*

*consistent with the overall aims of the energy policies that the consenting of new infrastructure in accordance with the energy NPSs is intended to help achieve, would be motivated by the desire to do more in one or more of the areas represented by Alternatives A1, A3 or A4.*

...

*1.7.8 Alternative A3, placing more emphasis on a reduction in CO2 emissions would, by definition, be beneficial from a climate change point of view. There is also the possibility that it may compare favourably with EN-1 from a human health and well-being and economic perspective.*

*1.7.9 However it is not clear that it would be possible to give practical effect to such an alternative through the planning system in the next ten years or so without risking negative impacts on security of supply. Equally the planning policies in the energy NPSs as drafted do not put any unjustified barriers in the way of the development of low carbon energy infrastructure (or the networks infrastructure needed to support it). Accordingly, Alternative A3 has not been preferred to EN-1 at this stage, but Government is actively considering other ways in which to encourage industry to accelerate progress towards a low carbon economy, particularly through the Electricity Market Reform project (see Section 2.2 of this NPS)."*

- 2.1.71 Further, paragraph 5.2.2 of NPS EN-1 provides that the Examining Authority and Secretary of State do "*not, therefore need to assess individual applications in terms of carbon emissions against carbon budgets*".

It follows from the above that:

1. The Energy NPSs implement the government's commitment on climate change, and the policies in the NPS are not an issue for the examination of the Proposed Scheme. This was further made clear by the Examining Authority at the Preliminary Hearing and at the Open Floor Hearing both held on 4 October 2018; and
2. As the Proposed Scheme falls within the remit of the Energy NPSs, it is not incompatible with a transition to a low-carbon economy, UK climate obligations under the Paris Agreement, nor the Climate Change Act 2008. If it were, then the Energy NPSs would also be incompatible with the Climate Change Act 2008. It must be remembered that the policy contained in NPS EN-1 is designed to cover the three pillars of government energy policy - decarbonisation, security of supply and affordability. The Proposed Scheme falls within NPS EN-1 and, therefore, the "need" for the Proposed Scheme in the context of these three pillars is not up for debate. It also follows that sections 104(4), 104(5) and 104(6) of the PA 2008 are not engaged. It only remains, therefore, in accordance with section 104(7), for the Examining Authority and the Secretary of State to determine, following the Examination, as to whether the Proposed Scheme's effects outweigh its benefits, which, as the Applicant has demonstrated in its application, they do not.

2.1.72 In addition, National Grid's Future Energy Scenarios (FES), published annually, consider how the energy sector in the UK could evolve through to 2050 across four illustrative pathways, taking into consideration behaviour change from consumers and innovation in technology.

2.1.73 The following text has been lifted from the introduction to the FES summary<sup>2</sup>:

*"Our new scenarios highlight some important themes and future developments. For example, gas will remain crucial for both heating and electricity generation in all scenarios for the coming decades."*

2.1.74 This clearly demonstrate that the system operator, National Grid, envisages a need for gas fired generating capacity in order to meet the 2050 carbon targets, in accordance with the Climate Change Act.

2.1.75 The Proposed Scheme is in accordance with the NPS policies and the National Grid forecast scenarios, and is therefore not incompatible with the Climate Change Act 2008.

Table 2-19 - ExA Written Question - ANC 1.15

| ExA Ref  | Question to | Question                                                                                                                                                                                                                   |
|----------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.15 | Applicant   | <p><b>Climate Effects</b></p> <p>Mr Plunkett and AJ Rushton in their RRs suggest that Units 5 and 6 should be decommissioned without replacement to reduce the effects of GHG emissions. Provide a justified response.</p> |

2.1.76 The relevant representations referred to in the question suggest there is no need for fossil-fuel generating stations. However, as set out in response to this, and earlier, questions, such an approach is inconsistent with both national policy and industry forecasts, both of which have been developed in the context of the UK Government's 2050 carbon reduction targets and international obligations in this respect. Accepting that that need exists, there are significant advantages to repowering the Units 5 and 6 rather than decommissioning them and providing a new facility elsewhere, on land that potentially would not already have an electricity generating land use.

2.1.77 NPS EN-1 is the Government's energy planning policy on achieving a low carbon energy system from the electricity generating sector. However, EN-1 makes it clear Government policy is not as simple as decarbonising the electricity generating sector, rather Government's commitment to meeting its legally binding target to cut greenhouse gas emissions is just one of three pillars. Policy also has to satisfy the need for a secure supply and be affordable to the UK consumer.

2.1.78 NPS EN-1 confirms the urgent need that exists in the UK for new electricity nationally significant infrastructure projects, including new fossil-fuel generating stations. The Proposed Scheme will help meet this need. The NPSs emphasise the need for an energy

<sup>2</sup> <http://fes.nationalgrid.com/media/1357/fes-2018-in-5-minutes-web-version.pdf>

mix in the UK to maintain flexibility in supply. The response provided to question ANC 1.14 is relevant in terms of the need for gas generation, in line with the NPSs, and the response provided to question ANC 1.10 is relevant in terms of the need for controllable, reactive, dispatchable energy generation (such as gas) in order to provide system security and stability to support the move to increased reliance on renewable energy sources.

- 2.1.79 When considering the future electricity demand of the country, analyses indicates that this demand (annual and peak) will only increase over the next 30 years. Increases in electricity demand will be driven by, for example, the electrification of the transport system and the further development of electric vehicles as fossil fuelled vehicles are phased out.
- 2.1.80 Modelling by National Grid and the publication of their four Future Energy Scenarios indicates that future electricity demand could increase to 308 TWh by 2030 and 441 TWh by 2050 and with a peak demand of 64 GW in 2030 and 87 GW in 2050 (See Figure 2-1, 2030 and Figure 2-2, 2050, extracted from Future Energy Scenarios 2018 Summary Report). These data and forecasts demonstrate that demand is only likely to increase over time and hence removing and not replacing capacity is not a sustainable option.

Figure 2-1 - Extracted from Future Energy Scenarios 2030

|                                        | 2017 | 2030 |     |     |     |
|----------------------------------------|------|------|-----|-----|-----|
| Electricity                            |      | CR   | TD  | SP  | CE  |
| Annual demand (TWh)*                   | 297  | 302  | 293 | 304 | 308 |
| Peak demand (GW)                       | 59   | 62   | 64  | 62  | 64  |
| Total installed capacity (GW)          | 103  | 158  | 161 | 134 | 131 |
| Low carbon and renewable capacity (GW) | 47   | 99   | 100 | 70  | 70  |
| Interconnector capacity (GW)           | 4    | 17   | 20  | 15  | 10  |
| Total storage capacity (GW)**          | 3    | 10   | 10  | 6   | 7   |
| Vehicle-to-grid total capacity (GW)    | 0    | 1.1  | 1.0 | 0.2 | 0.2 |



Figure 2-2 - Extracted from Future Energy Scenarios 2050

| 2050 |      |      |      | Electricity                            |
|------|------|------|------|----------------------------------------|
| CR   | TD   | SP   | CE   |                                        |
| 441  | 373  | 386  | 392  | Annual demand (TWh)*                   |
| 83   | 79   | 87   | 87   | Peak demand (GW)                       |
| 268  | 224  | 189  | 199  | Total installed capacity (GW)          |
| 178  | 160  | 110  | 116  | Low carbon and renewable capacity (GW) |
| 17   | 20   | 15   | 10   | Interconnector capacity (GW)           |
| 50   | 35   | 27   | 34   | Total storage capacity (GW)**          |
| 20.6 | 17.9 | 15.5 | 17.7 | Vehicle-to-grid total capacity (GW)    |

- 2.1.81 Removing Units 5 and 6 equates to the loss of 1320MW of generating capacity. It is important to recognise that the type of capacity being removed from the system is conventional thermal generating capacity which is capable of providing reliable and flexible electricity generation as well as providing system support services. This is explained further below:
- 2.1.82 National Grid is responsible for ensuring that the national transmission system is operated within a number of defined technical limits to ensure its safety and stability. It does this by procuring a number of 'system needs' and by instructing electricity generators to increase or decrease their generation in real time. The costs of procuring these services are ultimately passed on to consumers through charges on electricity bills. National Grid, as the system operator, is reliant on thermal generation to provide these services (specifically coal or gas-fired power stations), as these power stations can increase or decrease their electrical output in response to the demands of the transmission system, making them particularly useful sources of flexibility when needed at short notice. Thermal generators are also powered by large turbines that can increase or decrease their speed to synchronise with the national transmission system, which makes a significant contribution to the system needs National Grid relies on to manage the network.
- 2.1.83 In contrast, intermittent renewables such as wind and solar are reliant on the weather to generate their electricity. As a result, they cannot adjust their output when required and therefore cannot provide a full suite of controllable, dispatchable system services in the way thermal generation can. Therefore, as the power sector continues to decarbonise, it is crucial that Britain's power system retains and replaces a degree of flexible, dispatchable thermal generation alongside the continued deployment of low carbon technologies.



- 2.1.84 However, in recent years a significant number of thermal power stations around the country have closed. Since 2012, coal generation has reduced by 80%. The exponential growth of intermittent renewables such as wind and solar generation in recent years, displacing conventional thermal generation has led to the energy system becoming less predictable and more volatile. Output from these forms of generation can vary due to weather events, increasing the need for National Grid to intervene by commissioning dispatchable (usually thermal) plant to ramp up or down, often at short notice. Conversely, output from wind and solar can be high whilst electricity demand is low. As a result, the costs of managing the national transmission system – both in terms of matching supply with demand but also maintaining grid stability by procuring system services – have risen to over £1bn per annum and are forecast to rise to £2bn per annum by 2020.
- 2.1.85 Gas generation is therefore crucial not only to support the transition to a lower carbon economy and meeting carbon targets, but also to ensure security and affordability of electricity supply to the UK consumer.
- 2.1.86 Given the established need for thermal generation, there are considerable advantages to the Proposed Scheme being located at the Existing Drax Power Station Complex and repowering in order to utilise existing operational land and infrastructure (rather than decommissioning the existing coal-fired units). The existing Drax Power Station Site provides electricity connection into the National Grid, cooling water abstraction and discharge to the River Ouse, excellent transport connections to the M62 and the M18 as well as the inland port of Goole. Indeed, the recently published Inspector's recommendation report for the Eggborough Combined Cycle Gas Turbine Power Station commented as follows; with regard to the re-development on an existing power station site, these points also apply to the Proposed Scheme at Drax Power Station:

*4.5.6 I concur with the ES [APP-044], and deemed further examination of alternative locations for the Proposed Development as unnecessary, because the existing site is an obvious choice. This is because:*

- It has a long history of power generation;*
- The existing coal-fired power station is facing closure and future redevelopment of the Power Station site would create similar employment opportunities;*
- The site has excellent electrical grid, water and transport links and is a brownfield site which is considered more attractive to redevelop for large scale power generation than a greenfield one;*
- The majority of the Site (and particularly the Proposed Power Plant Site) is in the freehold ownership of the Applicant; and*
- The Proposed Power Plant Site is located relatively close to the National Grid gas transmission network; approximately 3.1 km to the north of the existing coal-fired power station site.*

- 2.1.87 In addition, re-powering rather than decommissioning the coal-fired units at the existing Drax Power Station lowers the carbon footprint compared with satisfying the need for thermal generation by constructing a new power station elsewhere. By reusing as much existing infrastructure as possible, it is possible to avoid the construction of new infrastructure that would be required on another site.

Table 2-20 - ExA Written Question - ANC 1.16

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                               |
|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANC 1.16 | Applicant   | <p><b>Climate Effects</b></p> <p>Respond to Yorkshire Wildlife Trust's comments raised in its RR stating that Carbon Capture Storage should not be considered an acceptable solution for increased carbon emissions as the technology is untested.</p> |

- 2.1.88 Although experience with Carbon Capture and Storage technology in the UK is limited, it is not correct to state that Carbon Capture and Storage technology is untested. By way of example, the link below provides a reference to the Global CCS institute webpage which lists over 30 large scale CCS plants which are, or have, captured carbon dioxide from coal or gas fired plants or other large carbon intensive processes, please see Table 1.

Link to the relevant website from where data has been derived:

<https://www.globalccsinstitute.com/projects/large-scale-ccs-projects>  
<https://www.globalccsinstitute.com/projects/large-scale-ccs-projects>  
<https://www.globalccsinstitute.com/projects/large-scale-ccs-projects>  
<https://www.globalccsinstitute.com/projects/large-scale-ccs-projects>

- 2.1.89 As part of its commitment to enabling a low-carbon future by moving away from coal and towards renewable and cleaner fuels, the Applicant has also announced that it is to pilot the first bioenergy carbon capture storage ("BECCS") project of its kind in Europe, which, if successful, could make the renewable electricity produced at its North Yorkshire power station carbon negative.
- 2.1.90 The Drax Repower project, and indeed all fossil fuel proposals which have a gross electrical output of 300MW or more, is required to comply with the Carbon Capture Readiness requirements to demonstrate that CCS can be installed when the technology required advances to a mature state and becomes economic as a standard abatement technology in the same way that Flue Gas Desulphurisation did for coal-fired generating plant across Europe.
- 2.1.91 The Applicant has submitted a Carbon Capture Readiness Statement (Examination Library ref APP-067) to demonstrate its compliance with the CCS requirements in this respect and, following discussions with the Environment Agency (EA)), is preparing additional information to demonstrate that there are no foreseeable barriers to carbon capture with regards to technical feasibility (as set out above in response to question ANC 1.7).

- 2.1.92 As part of the Proposed Scheme, Drax would safeguard land for future use for carbon capture equipment for when carbon capture become feasible in the future. The draft DCO submitted in support of the Application includes requirements to secure both the safeguarding of this land and regular monitoring and reporting on the feasibility of carbon capture in future.
- 2.1.93 Therefore, whilst Carbon Capture Storage is not currently a feasible option for inclusion in the Proposed Scheme, the Applicant is piloting technology in this respect, and appropriate safeguarding and feasibility reporting are secured by the draft DCO, and there is scope for such technology to become a means by which to mitigate the carbon impacts of the Proposed Scheme in future.

Table 2-21 - Carbon Capture and Storage Facilities as listed on the global CCS institute website

| Facility name<br>(click on link to view)                                                     | Lifecycle stage | Country       | State / district | CO2 capture capacity (Mtpa) | Operation date | Industry               |
|----------------------------------------------------------------------------------------------|-----------------|---------------|------------------|-----------------------------|----------------|------------------------|
| <a href="#">Terrell Natural Gas Processing Plant (formerly Val Verde Natural Gas Plants)</a> | Operating       | UNITED STATES | Texas            | 0.4-0.5                     | 1972           | Natural gas processing |
| <a href="#">Enid Fertilizer</a>                                                              | Operating       | UNITED STATES | Oklahoma         | 0.7                         | 1982           | Fertiliser production  |
| <a href="#">Shute Creek Gas Processing Plant</a>                                             | Operating       | UNITED STATES | Wyoming          | 7.0                         | 1986           | Natural gas processing |
| <a href="#">Sleipner CO2 Storage</a>                                                         | Operating       | NORWAY        | North Sea        | 1                           | 1996           | Natural gas processing |
| <a href="#">Great Plains Synfuel Plant and Weyburn-Midale</a>                                | Operating       | CANADA        | Saskatchewan     | 3.0                         | 2000           | Synthetic natural gas  |
| <a href="#">Snøhvit CO2 Storage</a>                                                          | Operating       | NORWAY        | Barents Sea      | 0.7                         | 2008           | Natural gas processing |
| <a href="#">Century Plant</a>                                                                | Operating       | UNITED STATES | Texas            | 8.4                         | 2010           | Natural gas processing |

| Facility name<br>(click on link to view)                                        | Lifecycle stage | Country              | State / district                               | CO2 capture capacity (Mtpa) | Operation date | Industry                  |
|---------------------------------------------------------------------------------|-----------------|----------------------|------------------------------------------------|-----------------------------|----------------|---------------------------|
| <a href="#">Air Products Steam Methane Reformer</a>                             | Operating       | UNITED STATES        | Texas                                          | 1.0                         | 2013           | Hydrogen production       |
| <a href="#">Coffeyville Gasification Plant</a>                                  | Operating       | UNITED STATES        | Kansas                                         | 1.0                         | 2013           | Fertiliser production     |
| <a href="#">Lost Cabin Gas Plant</a>                                            | Operating       | UNITED STATES        | Wyoming                                        | 0.9                         | 2013           | Natural gas processing    |
| <a href="#">Petrobras Santos Basin Pre-Salt Oil Field CCS</a>                   | Operating       | BRAZIL               | Santos Basin (off the coast of Rio de Janeiro) | Approx. 1.0                 | 2013           | Natural gas processing    |
| <a href="#">Boundary Dam Carbon Capture and Storage</a>                         | Operating       | CANADA               | Saskatchewan                                   | 1.0                         | 2014           | Power generation          |
| <a href="#">Quest</a>                                                           | Operating       | CANADA               | Alberta                                        | Approx. 1.0                 | 2015           | Hydrogen production       |
| <a href="#">Uthmaniyah CO2-EOR Demonstration</a>                                | Operating       | SAUDI ARABIA         | Eastern Province                               | 0.8                         | 2015           | Natural gas processing    |
| <a href="#">Abu Dhabi CCS Project (Phase 1 being Emirates Steel Industries)</a> | Operating       | UNITED ARAB EMIRATES | Abu Dhabi                                      | 0.8                         | 2016           | Iron and steel production |
| <a href="#">Illinois Industrial Carbon Capture and Storage</a>                  | Operating       | UNITED STATES        | Illinois                                       | 1.0                         | 2017           | Ethanol production        |
| <a href="#">Petra Nova Carbon Capture</a>                                       | Operating       | UNITED STATES        | Texas                                          | 1.4                         | 2017           | Power generation          |

| Facility name<br>(click on link to view)                                                        | Lifecycle stage   | Country        | State / district  | CO2 capture capacity (Mtpa) | Operation date | Industry                                   |
|-------------------------------------------------------------------------------------------------|-------------------|----------------|-------------------|-----------------------------|----------------|--------------------------------------------|
| <a href="#">CNPC Jilin Oil Field CO2 EOR</a>                                                    | Operating         | CHINA          | Jilin Province    | 0.6                         | 2018           | Natural gas processing                     |
| <a href="#">Gorgon Carbon Dioxide Injection</a>                                                 | In construction   | AUSTRALIA      | Western Australia | 3.4-4.0                     | 2018           | Natural gas processing                     |
| <a href="#">Alberta Carbon Trunk Line ("ACTL") with Agrium CO2 Stream</a>                       | In construction   | CANADA         | Alberta           | 0.3-0.6                     | 2019           | Fertiliser production                      |
| <a href="#">Alberta Carbon Trunk Line ("ACTL") with North West Sturgeon Refinery CO2 Stream</a> | In construction   | CANADA         | Alberta           | 1.2-1.4                     | 2019           | Oil refining                               |
| <a href="#">Sinopec Qiluo Petrochemical CCS</a>                                                 | In construction   | CHINA          | Shandong Province | 0.4                         | 2019           | Chemical Production                        |
| <a href="#">Yanchang Integrated Carbon Capture and Storage Demonstration</a>                    | In construction   | CHINA          | Shaanxi Province  | 0.41                        | 2020           | Chemical Production                        |
| <a href="#">Caledonia Clean Energy</a>                                                          | Early development | UNITED KINGDOM | Scotland          | 3                           | 2024           | Power generation                           |
| <a href="#">South West Hub</a>                                                                  | Early development | AUSTRALIA      | Western Australia | 2.5                         | 2025           | Fertiliser production and power generation |
| <a href="#">Sinopec Eastern China CCS</a>                                                       | Early development | CHINA          | Jiangsu Province  | 0.5                         | 2020-2021      | Fertiliser production                      |

| Facility name<br>(click on link to view)                                                                  | Lifecycle stage      | Country        | State / district                             | CO2 capture capacity (Mtpa) | Operation date | Industry              |
|-----------------------------------------------------------------------------------------------------------|----------------------|----------------|----------------------------------------------|-----------------------------|----------------|-----------------------|
| <a href="#">China Resources Power (Haifeng) Integrated Carbon Capture and Sequestration Demonstration</a> | Early development    | CHINA          | Guangdong Province                           | 1.0                         | 2020's         | Power generation      |
| <a href="#">Huaneng GreenGen IGCC Project (Phase 3)</a>                                                   | Early development    | CHINA          | Tianjin                                      | 2.0                         | 2020's         | Power generation      |
| <a href="#">Korea-CCS 1</a>                                                                               | Early development    | SOUTH KOREA    | Either Gangwon province or Chungnam Province | 1.0                         | 2020's         | Power generation      |
| <a href="#">Korea-CCS 2</a>                                                                               | Early development    | SOUTH KOREA    | Not Decided                                  | 1.0                         | 2020's         | Power generation      |
| <a href="#">Shanxi International Energy Group CCUS</a>                                                    | Early development    | CHINA          | Shanxi Province                              | 2.0                         | 2020's         | Power generation      |
| <a href="#">Shenhua Ningxia CTL</a>                                                                       | Early development    | CHINA          | Ningxia Hui Autonomous Region                | 2.0                         | 2020's         | Coal-to-liquids (CTL) |
| <a href="#">Sinopec Shengli Power Plant CCS</a>                                                           | Early development    | CHINA          | Shandong Province                            | 1.0                         | 2020's         | Power generation      |
| <a href="#">Teesside Collective</a>                                                                       | Early development    | UNITED KINGDOM | Tees Valley                                  | 0.8                         | 2020's         | Various               |
| <a href="#">Norway Full Chain CCS</a>                                                                     | Advanced development | NORWAY         | Southern Norway                              | 1.2                         | 2023-2024      | Various               |



| Facility name<br>(click on link<br>to view)    | Lifecycle<br>stage      | Country          | State / district | CO2<br>capture<br>capacity<br>(Mtpa) | Operation<br>date               | Industry               |
|------------------------------------------------|-------------------------|------------------|------------------|--------------------------------------|---------------------------------|------------------------|
| <a href="#">CarbonNet</a>                      | Advanced<br>development | AUSTRALIA        | Victoria         | 1.0-5.0                              | 2020's                          | Under<br>evaluation    |
| <a href="#">Lake Charles<br/>Methanol</a>      | Advanced<br>development | UNITED<br>STATES | Louisiana        | 4.2                                  | 2022<br>(Institute<br>estimate) | Chemical<br>production |
| <a href="#">Texas Clean<br/>Energy Project</a> | Advanced<br>development | UNITED<br>STATES | Texas            | 1.5-2.0                              | 2022<br>(Institute<br>estimate) | Chemical<br>production |

Key highlights from the Global Status of CCS Report: 2017 are provided below:

- To reach Paris climate targets:
  - more than 2000 CCS facilities will be needed by 2040
  - 14 per cent of cumulative emissions reductions must be derived from CCS;
- There are now 17 large-scale CCS facilities operating globally, with four more coming on-stream in 2018;
- Current CO2 capture is 37 million tonnes per annum (Mtpa) – equivalent to removing eight million cars from the road each year;
- CCS is the only clean technology capable of decarbonising industry – steel, chemicals, cement, fertilisers, pulp and paper, coal and gas-fired powered generation;
- To date, more than 220 million tonnes of anthropogenic CO2 has been safely and permanently injected deep underground;
- In Asia and the Pacific (APAC), 11 CCS facilities are in varying stages of development including eight in China;
- In Europe, Middle East and Africa (EMEA), four large scale facilities are operating successfully (two in Norway and two in the Middle East), with two more in early development in the United Kingdom);
- Twelve of the 17-large scale facilities in operation are located in the United States and Canada and two of those came on-stream in the past twelve months (Petra Nova and Illinois Industrial);
- CCS is now proving its versatility across five industrial sectors in the United States – natural gas processing, power, fertiliser, hydrogen and biofuels;
- On a like-for-like basis, CCS is cheaper than intermittent renewables and costs continue to fall.

A link to this report is provided here from where the report can be downloaded:

<https://www.globalccsinstitute.com/status>

### 3 AIR QUALITY

Table 3-1 - ExA Written Question – AQ 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.1  | Applicant   | <p><b>Assessment Methodology</b></p> <p>Paragraph 6.8.3 of Chapter 6 of the ES states that the design of boilers for the Gas Recovery Facility have not been finalised and that modelling is based on operation of 6.6MW (thermal input) boilers.</p> <p>i) Confirm at what point the design of the boilers for the Gas Recovery Facility would be finalised.</p> <p>ii) Explain whether this has any bearing on the assessment of likely significant effects in the ES.</p> |

- 3.1.1 With respect to part (i) of the question, the Gas Receiving Facility is currently undergoing front end engineering design (FEED) based on 6.6MW thermal input boilers, which are the intended boilers. Detailed design of the Gas Receiving Facility will then be completed so that details can be submitted to the relevant planning authority for approval ahead of the start of development of the Gas Receiving Facility (Work Number 5), in accordance with Requirement 6 to the draft DCO (a revised version of which is submitted at this Deadline 2, Applicant's document ref 3.1 Rev 2).
- 3.1.2 With respect to part (ii) of the question, the GRF boilers have been included in the air quality assessment for all scenarios on the following basis:
- 12 x 600kW GRF boilers (7MW total)
  - Discharging through 4 x 10m stacks (3 boilers in each)
  - NOx Emissions at 31mg/kWh
  - Average load of 65%
- 3.1.3 The annual average load of 65% for the boilers was calculated by the Applicant's environmental advisors, WSP, on the basis of the energy likely to be required to meet the temperature and pressure requirements set by the Applicant for the input gas to the new Units (X and Y).
- 3.1.4 These data are set out in Table A.3-2 Appendix 6.3 (Examination Library Ref: APP\_100) to the Air Quality Chapter (Examination Library ref APP\_074).
- 3.1.5 As currently modelled, the operation of the boilers has a negligible impact on the conclusions of the assessment.
- 3.1.6 This is, in part, illustrated by considering the total emissions from the various components of the facility at Drax:

| Component                       | Emissions NOx<br>g/s           |
|---------------------------------|--------------------------------|
| 12 x 600kW Boilers @ 65% load   | 0.04                           |
| 4 x Biomass Units (full load)   | 366.55                         |
| 2 x Gas-Fired Units (full load) | 134.23 (CCGT)<br>209.06 (OCGT) |

- 3.1.7 That is to say, emissions from the boilers amount to less than 1000<sup>th</sup> of the emissions from the new gas turbines.
- 3.1.8 Notwithstanding this, the boiler stacks are 10m tall whereas the new gas turbine stacks are around 120m in height. This means that for receptors in proximity to the facility, the impact of the boilers have greater significance in terms of the impact of the Proposed Scheme than a simple comparison of emission totals would suggest. As the distance from the facility increases, the impacts of the boilers decrease in comparison to the total impact of the Proposed Scheme as the relative mass emission rates becomes the determining factor.
- 3.1.9 This can be illustrated by a breakdown of the impacts at human and ecological receptors.
- 3.1.10 The closest human receptor to the boilers is Wren Hall, which lies approximately 500m to the south-west of the boilers. Table 3-2 below shows the impacts of the boilers on annual mean concentrations at this receptor, together with the impacts from the Proposed Scheme as presented in the Environmental Statement (Table 6-14, Examination Library ref APP-074). At Wren Hall, the boilers amount to between 27% (Scenario A1 – CCGT, no SCR) and 41% (Scenario B – CCGT, with SCR) of the total impact, but this is just 0.12% of the objective of 40µg/m<sup>3</sup>. 3 Pear Tree Avenue experiences the highest impact from the Proposed Scheme and lies 1.2km to the north-west of the boilers. At this location, the impact of the boilers amounts to 0.06% of the objective and between 1.5% and 3.0% of the total impact.

*Table 3-2 - Maximum modelled impacts of the boilers at human receptors (Annual Mean NO<sub>2</sub>, µg/m<sup>3</sup>)*

| Component                            | PC   | PEC  |
|--------------------------------------|------|------|
| <b>Wren Hall</b>                     |      |      |
| 12 x 600kW Boilers @ 65% load        | 0.05 | -    |
| Proposed Scheme Impact (Scenario A1) | 0.17 | 10.1 |
| Proposed Scheme Impact (Scenario B)  | 0.11 | 8.9  |
| <b>3 Pear Tree Avenue</b>            |      |      |
| 12 x 600kW Boilers @ 65% load        | 0.02 | -    |
| Proposed Scheme Impact (Scenario A1) | 2.0  | 10.5 |
| Proposed Scheme Impact (Scenario B)  | 1.1  | 9.6  |

- 3.1.11 At the ecological receptors, which lie further from the facility than the human receptors, the impacts of the boilers are less than 2% of the total impacts at all locations, and therefore, amount to <0.06% of the critical level for NO<sub>x</sub> and <0.004% of the site-relevant critical loads. Table 3-3 shows the maximum impacts of the Proposed Scheme and the boilers on annual mean NO<sub>x</sub> over each of the ecological sites. The data for the Proposed Scheme were taken from the Environmental Statement (Table 6-21, Examination Library ref APP-074).

*Table 3-3 - Maximum modelled impacts of the boiler at ecological receptors (Annual Mean NO<sub>x</sub>, µg/m<sup>3</sup>)*

| <b>Ecological Site</b>  | <b>PC Boilers Alone</b> | <b>PC Proposed Scheme Scenario A1</b> | <b>PC Proposed Scheme Scenario B</b> | <b>PC Boilers as % of Proposed Scheme (Scenario B)</b> | <b>PC Boilers as % of Critical Level (30µg/m<sup>3</sup>)</b> |
|-------------------------|-------------------------|---------------------------------------|--------------------------------------|--------------------------------------------------------|---------------------------------------------------------------|
| <b>River Derwent</b>    | 0.016                   | 2.15                                  | 1.11                                 | 1.4%                                                   | 0.053%                                                        |
| <b>Lower Derwent</b>    | 0.002                   | 1.25                                  | 0.65                                 | 0.3%                                                   | 0.006%                                                        |
| <b>Brighton Meadows</b> | 0.002                   | 1.25                                  | 0.65                                 | 0.3%                                                   | 0.006%                                                        |
| <b>Derwent Ings</b>     | 0.001                   | 0.77                                  | 0.40                                 | 0.2%                                                   | 0.003%                                                        |
| <b>Thorne Moor</b>      | 0.001                   | 0.32                                  | 0.17                                 | 0.3%                                                   | 0.002%                                                        |
| <b>Skipwith Common</b>  | 0.001                   | 0.30                                  | 0.16                                 | 0.4%                                                   | 0.002%                                                        |
| <b>Humber Estuary</b>   | 0.001                   | 0.54                                  | 0.28                                 | 0.4%                                                   | 0.004%                                                        |
| <b>Eskamhorn</b>        | 0.002                   | 0.37                                  | 0.19                                 | 1.1%                                                   | 0.007%                                                        |
| <b>Brockholes</b>       | 0.004                   | 0.35                                  | 0.18                                 | 2.0%                                                   | 0.012%                                                        |
| <b>Orchard Farm</b>     | 0.003                   | 0.34                                  | 0.17                                 | 2.0%                                                   | 0.011%                                                        |

- 3.1.12 Taking into account the available headroom at the human receptors (>70% of the objective), it is readily apparent that variations in the final design / capacity / location of the boilers would not have an impact on the conclusions of the ES in relation to impacts on human health.
- 3.1.13 At the ecological receptors, the impacts of the boilers are currently two orders of magnitude lower than the impacts of the Proposed Scheme. As such, the conclusions of the assessment of impacts have very low vulnerability to variations in the boiler design.
- 3.1.14 These assertions take into account:
- Potential changes to the required capacity for the boilers – linear, first order impact but low vulnerability given conservative assumptions regarding the natural gas supply conditions and therefore the energy required to bring gas supply to required conditions for turbines
  - Changed boiler stack height and/or height of boiler houses – secondary effect, with low impact since plume from 10m stack is well mixed at nearest sensitive receptors and has little dependence on exhaust conditions.
  - Changed location of the boiler stacks – secondary effect, with low impact given limited options for locations
- 3.1.15 Overall, therefore, the fact that the design of the boilers for the Gas Recovery Facility has not been finalised has no bearing on the assessment of likely significant effects in the ES.

Table 3-4 - ExA Written Question – AQ 1.2

| ExA Ref | Question to            | Question                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.2  | The Environment Agency | <p><b>Environmental Permit</b></p> <p>The ExA notes your comments in your RR [RR-292]. However, it gives little steer as to whether, based on the assessment in the ES and the information provided in other dDCO application documents, any obvious errors or issues exist before the Environment Agency that would prevent the Environmental Permit from being granted. Provide this clarification.</p> |

a) Question not addressed to the Applicant.

Table 3-5 - ExA Written Question – AQ 1.3

| ExA Ref | Question to                      | Question                                                                                                                                                                                                                |
|---------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.3  | Applicant<br><br>The Environment | <p><b>Environmental Permit Monitoring</b></p> <p>Chapter 6 of the ES identifies that the need for long-term air quality monitoring will be determined through the Environmental Permit pre-application discussions.</p> |

| ExA Ref | Question to | Question                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------|
|         | Agency      | Provide an update on such discussion and whether the need for monitoring has been determined. |

- 3.1.16 Air Quality monitoring was discussed by the Applicant with the Environment Agency on 25 October 2018. The Applicant has considered the need for long term air quality monitoring and does not consider that ambient air monitoring is required. In any event, and as noted in the ES, this will be determined through the Environmental Permit process. Further information is provided in the response to AQ 1.5 below.

Table 3-6 - ExA Written Question – AQ 1.4

| ExA Ref | Question to            | Question                                                                                                                                                                                |
|---------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.4  | The Environment Agency | <b>Use of Selective Catalytic Reduction</b><br>Provide an update as to whether the use of Selective Catalytic Reduction will likely be deemed to represent Best Available Technologies. |

- 3.1.17 Question not addressed to the Applicant.

Table 3-7 - ExA Written Question – AQ 1.5

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.5  | Applicant   | <b>Emissions Monitoring</b><br>Table 6-3 of Chapter 6 of the ES states that long-term air quality monitoring is required but will form part of the Environmental Permit application to be determined by the Environment Agency.<br>i) Confirm whether air quality monitoring is or should be secured by the dDCO and whether it forms part of Requirement 17.<br>ii) Explain whether ambient air quality monitoring is necessary for the monitoring of nitrogen oxides in specific areas and if so, how this is secured in the dDCO. |

- 3.1.18 The Applicant was required under its Environmental Permit for the existing Drax Power Station to continuously monitor air quality in the local area for pollutants that it releases that are associated with the National Air Quality Strategy (NAQS), these were; sulphur dioxide, oxides of nitrogen and particulate matter. Monitoring started in 2005 and was carried out every year until the plant became subject to the Industrial Emissions Directive (IED) in 2016. Because the plant had demonstrated compliance with the NAQS in every year of monitoring, and compliance with the IED required a significant reduction in emissions of the main



pollutants from the plant because the emission limits were reduced significantly, the Environment Agency removed the ambient air quality monitoring condition from the Environmental Permit and monitoring was ceased in 2016. The Proposed Scheme represents further reductions in emissions from the baseline for some pollutants; sulphur dioxide and particulate matter will be near to zero from both Unit X and Unit Y.

- 3.1.19 Emission limit rates of oxides of nitrogen will be approximately nine times less on Units X and Y than those of the baseline (Units X and Y NO<sub>x</sub> emission limit rate of 50mg/Nm<sup>3</sup> compared to coal / biomass limit rate of 450mg/Nm<sup>3</sup>) although total emissions of NO<sub>x</sub> will increase due to the generation output of the Proposed Scheme. The Applicant considers it is not necessary to monitor ambient air quality for the Proposed Scheme as the impacts on local air quality are not predicted to be significant. If SCR is installed, total emissions of ammonia would be monitored at Units X and Y, in line with the Environmental Permit. Ambient air quality monitoring would not assist in managing the impacts of the Proposed Scheme, because the modelled impacts are significantly lower than the level of spatial and temporal variability in background ammonia concentrations. In addition, impacts would be controlled by the relevant emissions limits being applied at the stacks
- 3.1.20 Key parameters would, however, be continuously monitored at the stacks, which are the major emissions points to atmosphere, to monitor compliance with emissions limits to be set in the Environmental Permit.

As a result, no air quality monitoring is considered necessary or secured by requirements to the draft DCO.

Table 3-8 - ExA Written Question – AQ 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.6  | Applicant   | <p><b>Atmospheric Emissions</b></p> <p>Paragraph 6.3.22 of Chapter 6 of the ES [APP-074] states that atmospheric emissions from the operation of the Proposed Development were quantified by obtaining information from relevant plant suppliers.</p> <p>i) Provide the information obtained from plant suppliers.</p> <p>ii) Explain how the information taken from plant suppliers is relevant to the assessment of atmospheric emissions and how this information has been used.</p> <p>iii) Demonstrate that the dDCO [AS-012] will not permit a plant that would result in a worse case than that which has been assessed in the ES.</p> |

- 3.1.21 With respect to part (i) of the question, Drax has not yet signed a contract with the original equipment manufacturer (OEM) for the construction of the plant. The OEM has, however, confirmed that the plant will meet the limits in the Industrial Emission Directive (Directive 2010/75/EU) (IED) and the plant will be designed with the option of installing Selective Catalytic Reduction (SCR), should that be required by the Environmental Permit.

- 3.1.22 With respect to part (ii) of the question, the plant supplier's information has been used to specify the model input parameters for the exhaust emissions from Units X and Y in all modelled scenarios. This is the most appropriate data to use, given it represents the likely operating emissions of the plant. These are set out in Table A.3-1 in Appendix 6.3 to the ES (Examination Library ref APP-100). The NO<sub>x</sub> and CO emission concentrations for the model runs without SCR (Scenarios A1, A2 & C) have also been taken from the supplier's information and the plant is assumed to operate at these emissions concentrations at all times i.e. the model runs assume that the plant exactly meets the supplier's information at all times.
- 3.1.23 Emission concentrations for the scenarios with SCR have been taken from the emission limits set in the BAT Conclusions (Scenarios B and D) (BAT Conclusions of 31 July 2017 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for large combustion plants (notified under document C(2017) 5225)). The bulk exhaust parameters (volume flow, temperature, oxygen and moisture concentration) in these model scenarios are, as in all scenarios, assumed to meet the supplier's data.
- 3.1.24 The 50mg/Nm<sup>3</sup> limit for oxides of nitrogen is set in the IED and cannot be exceeded by plant within the EU (Article 15; 'The emission limit values set out in accordance with the first subparagraph shall however, not exceed the emission limit values set out in the Annexes to this Directive, where applicable'). The assessment in the ES Chapter 6 – Air Quality (Examination Library ref APP-074), therefore, represents a realistic worst-case assessment as it considers the highest allowable emissions and continuous operation of the Units. In reality, the emissions will be lower than that set out in the ES.
- 3.1.25 With respect to part (iii) of the question, the ES has assessed a realistic worst case for the Proposed Scheme, based on parameters set out in Schedule 13 of the draft DCO, the description of the authorised development in Schedule 1 of the draft DCO, and based on the location of each numbered work comprising the authorised development within the limits of deviation shown on the works plans. The draft DCO only grants consent for the authorised development set out in Schedule 1 (Article 3(1)), and the development must be carried out within the parameters in Schedule 13 (secured by Requirement 6(10)) and within the limits of deviation shown on the works plans (secured by Article 3(2) and which plans are certified documents as identified in Schedule 15, table 15 of the draft DCO). By securing that the Proposed Scheme is delivered in compliance with the parameters it has been assessed against, the Proposed Scheme's impacts would be no worse than those assessed in the ES.
- 3.1.26 To the extent there is scope to make changes to the Proposed Scheme following the DCO being made, Requirement 5(2) only allows such amendments where approved by the relevant planning authority and only where it has been demonstrated to the satisfaction of the relevant planning authority that the subject matter of the approval sought is unlikely to give rise to any materially new or materially different environmental effects from those assessed in the environmental statement. This provides a control so that a plant that would result in a worse case than the one assessed in the ES and granted consent by the DCO (because it would be likely to change the significance level of an effect or create a new effect which would be significant in EIA terms) would not be permitted by the DCO.

Table 3-9 - ExA Written Question – AQ 1.7

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.7  | Applicant   | <p><b>Methodology</b></p> <p>6.3.2 of Chapter 6 of the ES states “<i>The NOx emission guarantees being given by the manufacturer of the proposed units are, without the use of NOx abatement technology, outside of the BAT AEL range for NOx set for lower efficiency units.</i>”</p> <p>i) Provide details regarding the figures of NOx emission guaranteed by the manufacturer of the ‘proposed units’.</p> <p>ii) What confidence does the Applicant have on the robustness of the manufacturer guarantees?</p> |

3.1.27 With respect to part (i) of the question, Drax has not yet signed a contract with the original equipment manufacturer (OEM) for the construction of the plant. The OEM has, however, confirmed that the plant will meet the limits in the Industrial Emissions Directive, as discussed in response to AQ 1.6, and the plant will be designed with the option of installing SCR.

3.1.28 With respect to part (ii) of the question, given the experience of the OEM and the capacity to install SCR, Drax has a high level of confidence that the plant will be compliant.

Table 3-10 - ExA Written Question – AQ 1.8

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.8  | Applicant   | <p><b>Ammonia cap</b></p> <p>Chapter 6 of the ES identifies that total ammonia concentrations and deposition levels exceed the critical levels and loads applicable at some sites and to specific habitats. As a result, an ammonia cap has been proposed which limits the amount of emissions of ammonia to 120 tonnes annually.</p> <p>i) Confirm if the ammonia cap of 120 tonnes annually has been agreed with Environment Agency.</p> <p>ii) Set out how ammonia levels will be measured and monitored.</p> |

3.1.29 With respect to part (i) of the question, the ammonia cap has not been agreed with the EA but the Applicant is currently discussing the ammonia cap with the EA with a view to confirming agreement in the Statement of Common Ground. To date, no issues have been raised by the EA over the ammonia cap.

- 3.1.30 With respect to part (ii) of the question, in the event that Selective Catalytic Reduction (SCR) is required, ammonia levels will be monitored using continuous emission monitors. The annual mass emissions could be calculated using the same method that is currently used for other pollutants, such as sulphur dioxide and oxides of nitrogen, using established flue gas volume flows. In addition, deliveries of ammonia would be tracked using the station's calibrated road weighbridges which link directly into the company's stock management system.
- 3.1.31 The specific method of monitoring would be agreed with the Environment Agency as part of the determination of the Environmental Permit should SCR be required to further reduce NOx emissions. If SCR is not required, then there would be no requirement to monitor ammonia levels.

Table 3-11 - ExA Written Question – AQ 1.9

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.9  | Applicant   | <p><b>Ammonia cap</b></p> <p>Paragraph 6.3.7 of Chapter 6 of the ES states that the ammonia cap can be achieved via other methods, such as only operating a single unit or by taking into account both emission rate and the number of operating hours in combined cycle mode for either or both units.</p> <p>i) Confirm if a final decision has been made regarding the operation of the units in order to achieve the ammonia cap and has this been confirmed with the Environment Agency.</p> <p>ii) Confirm that this has been factored into assessments elsewhere in the ES, including the assessment of biodiversity.</p> |

- 3.1.32 With respect to part (i) of the question, the ammonia cap approach to limiting impacts from exposure to ammonia and nitrogen deposition has been designed to give operational flexibility. The ammonia cap effectively operates as a budget or allowance of ammonia, which can be used in the operation of the Proposed Scheme annually. As such, it is intended that the means by which the ammonia cap is used will be determined during operations and may vary over time.
- 3.1.33 This has, however, no potential adverse impact on the air quality assessment conclusions since the impacts of the Project have been modelled using a realistic worst case.
- 3.1.34 The Environment Agency is currently considering the application to vary the Environmental Permit for the facility. The concept of applying an ammonia cap in the event SCR is required (an ammonia cap will not be required where SCR is not required), is currently being discussed with the Environment Agency, and agreement in this respect will be recorded in the SoCG currently under discussion. To date no issues have been raised by the EA.

- 3.1.35 With respect to part (ii) of the question, the impacts of the ammonia cap have been taken into account in the assessment of biodiversity. No other topics would be affected by its imposition.

Table 3-12 - ExA Written Question – AQ 1.10

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.10 | Applicant   | <p><b>Assessment of effects</b></p> <p>Table 6.5 of Chapter 6 of the ES sets out the different scenarios which have been considered for the air quality assessment:</p> <ul style="list-style-type: none"> <li>○ Scenario A1 – combined cycle gas turbine without NOx abatement</li> <li>○ Scenario A2 – open cycle gas turbine</li> <li>○ Scenario B – 1,500 hours in open cycle gas turbine up to 7,260 hours in CCGT mode with NOx abatement and ammonia cap</li> <li>○ Scenario C – cumulative effects CCGT mode (Scenario A1)</li> <li>○ Scenario D - 1,500 hours in OCGT mode, ~7,260 hours in CCGT mode with NOx abatement and ammonia cap (Scenario B).</li> </ul> <p>Elsewhere, in Section 3.2 in Chapter 3 of the ES, indicates that the dDCO seeks flexibility whereby Unit Y will continue to function as an operational coal fired generator.</p> <p>i) Explain how this scenario (whereby Unit Y will continue to function as an operational coal fired generator) has been factored in to the scenarios (Table 6.5 of Chapter 6 of the ES) that have been assessed in the ES.</p> <p>ii) Set out the impacts of this scenario (whereby Unit Y will continue to function as an operational coal fired generator) on all sensitive receptors</p> |

- 3.1.36 With respect to part (i) of the question, the impacts of the operation of the site with just a single unit (Unit X) re-powered and one existing unit remaining as a coal fired generator were not modelled explicitly for the Environmental Statement. This is because any scenario with just a single unit re-powered, and one coal fired unit continuing to operate, would have equivalent or lower *local* air quality impacts than those presented for the scenarios in the ES. As a result, assessment of both Units X and Y in operation represented the realistic worst case overall for *local* air quality. The specific impacts of the switch to a single unit are dependent on the pollutant in question and the location of the receptors.
- 3.1.37 It is important to note at this point that Chapter 6 of the Environmental Statement considers the impacts of emissions to air on *local air quality* only. Total emissions of pollutants to air, which are relevant to the consideration of regional air quality and national targets for emissions of pollutants would be higher in a scenario with just a single unit re-powered and one coal fired unit continuing to operate compared with Unit X and Unit Y in operation, both in terms of maximum possible emissions (expressed as g/s) and emissions per unit of electricity generated (expressed as kg/MWh). This is set out in Table 3-13 below. The pollutant mass emission rates provided below are as provided in Table A.3-1 in Appendix 6.3 of the Environmental Statement (Examination Library Ref: APP-100). For NOx for

example, total emissions per unit of electricity generated are 0.47kg/MWh for a coal-fired unit and up to 0.112kg/MWh for a gas fired unit. Similar conclusions apply to carbon emissions which were considered in Chapter 15 of the Environmental Statement.

Table 3-13 - Maximum Emissions for Existing Coal Fired Unit and Proposed Gas Fired Unit

| Pollutant              | Coal Fired Unit (600MW) |        | Repowered Gas Fired unit (1800MW) |        |             |        |
|------------------------|-------------------------|--------|-----------------------------------|--------|-------------|--------|
|                        |                         |        | With SCR                          |        | Without SCR |        |
|                        | g/s                     | kg/MWh | g/s                               | kg/MWh | g/s         | kg/MWh |
| <b>NO<sub>x</sub></b>  | 85.8                    | 0.47   | 33.56                             | 0.067  | 55.9        | 0.112  |
| <b>SO<sub>2</sub></b>  | 74.3                    | 0.41   | trace                             |        | trace       |        |
| <b>PM<sub>10</sub></b> | 4.6                     | 0.02   | trace                             |        | trace       |        |
| <b>NH<sub>3</sub></b>  | 5.7                     | 0.03   | 1.12                              | 0.002  | trace       |        |
| <b>HCl</b>             | 2.9                     | 0.02   | trace                             |        | trace       |        |

3.1.38 For the purposes of setting out the impacts from the scenario where only Unit X is in operation and one coal fired unit remains operational, in response to part (ii) of the question, the following worst case scenarios for operation of a single unit have been modelled; these are:

- Without NOX Abatement – continuous combined cycle gas turbine without SCR (Unit X re-powered; one unit remains coal fired) – termed A3, since it is the single unit counterpart of scenario A1 (Note: A2 is open cycle operation)
- With NOX Abatement – continuous combined cycle gas turbine with SCR and 120 tonnes annual ammonia cap (Unit X re-powered, one unit remains coal fired) – termed B\_alt, since it is the single unit counterpart of scenario B

3.1.39 In scenario B\_alt, it is assumed that ammonia from Unit X is emitted at the cap level (120 tonnes per annum). With just a single unit, this would imply that, in terms of mass emissions per unit time per combustion unit, emissions of ammonia could occur at a higher level than modelled for the two unit case. The explanation for this is that:

- Drax have stated that the lowest achievable long term average concentration of ammonia in the exhaust gases is 1mg/Nm<sup>3</sup>.
- With a cap of 120 tonnes per year, this would permit both Units X and Y to operate for up to 7260 (=8760-1500) hours in combined cycle mode (when SCR is operational), and the remaining hours operated in open cycle (1500 hours, when SCR is not operational) (Scenario B).
- For a single unit, the cap of 120 tonnes can be achieved with continuous operation in combined cycle mode.



- To assess a worst case single unit operation, it has been assumed that continuous full load operation in combined cycle mode occurs with ammonia emissions at 1.7mg/Nm<sup>3</sup> which equates to annual ammonia emissions of 120 tonnes (without operation in open cycle).

3.1.40 In terms of emissions, scenario B\_alt then has substantially lower emissions of NO<sub>x</sub> than scenario B, but higher total emissions of ammonia (since there are also emissions of ammonia from the retained existing unit which remains coal fired and operational). This has no significant impact on the conclusions of the assessment, as illustrated below.

3.1.41 **Tables 3-14 to 3-20** show the single Unit X impacts (for both scenarios A3 and B-Alt) corresponding to the data provided for two Units X and Y in the Environmental Statement, namely Tables 6-14 and 6-15 for human health, and Tables 6-18 to 6-22 for ecological impacts (Examination Library ref App-074). The impacts are, for compatibility with the Environmental Statement, presented as the difference between the future "Single Unit" re-powered scenario (Unit X, 4 biomass units and 1 coal fired unit) and the future do nothing scenario (4 x biomass and 2 x coal fired units). These are referred to as Single Unit Impacts; with the Environmental Statement scenarios referred to as Two Unit Impacts (i.e. Unit X and Unit Y).

*Table 3-14 - Single Unit Maximum Operational Impact at Human Receptors - Annual Mean NO<sub>2</sub>*  
(Compare to Table 6-14)

| <b>Receptor</b>                                                                                             | <b>Backgro<br/>und</b> | <b>P<br/>C</b> | <b>PC as % of<br/>Obj</b> | <b>PE<br/>C</b> | <b>PEC as % of<br/>Obj</b> | <b>Descript<br/>ion</b> |
|-------------------------------------------------------------------------------------------------------------|------------------------|----------------|---------------------------|-----------------|----------------------------|-------------------------|
| <b>Scenario A3 - Combined cycle operation with low NO<sub>x</sub> (50mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                        |                |                           |                 |                            |                         |
| <b>Foreman's Cottage</b>                                                                                    | 8.5                    | 1.<br>1        | 2.7%                      | 9.6             | 24.0%                      | Negligibl<br>e          |
| <b>East Yorkshire<br/>Caravan Park</b>                                                                      | 10.9                   | 0.<br>2        | 0.4%                      | 11.<br>1        | 27.6%                      | Negligibl<br>e          |
| <b>Drax Sport's and Soc</b>                                                                                 | 10.9                   | 0.<br>4        | 1.0%                      | 11.<br>3        | 28.2%                      | Negligibl<br>e          |
| <b>Wren Hall</b>                                                                                            | 8.8                    | 0.<br>1        | 0.3%                      | 8.9             | 22.3%                      | Negligibl<br>e          |
| <b>3 Pear Tree Ave</b>                                                                                      | 8.5                    | 0.<br>4        | 1.0%                      | 8.9             | 22.3%                      | Negligibl<br>e          |
| <b>Grange Cottages</b>                                                                                      | 9.4                    | 0.<br>2        | 0.6%                      | 9.6             | 24.1%                      | Negligibl<br>e          |
| <b>Drax Abbey Farm</b>                                                                                      | 8.5                    | 1.<br>1        | 2.7%                      | 9.6             | 24.0%                      | Negligibl<br>e          |
| <b>Read School</b>                                                                                          | 9.2                    | 0.<br>1        | 0.4%                      | 9.3             | 23.4%                      | Negligibl<br>e          |

| <b>Receptor</b>                                                                                                                       | <b>Background</b> | <b>PC</b> | <b>PC as % of Obj</b> | <b>PEC</b> | <b>PEC as % of Obj</b> | <b>Description</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|-----------------------|------------|------------------------|--------------------|
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                   |           |                       |            |                        |                    |
| <b>Foreman's Cottage</b>                                                                                                              | 8.5               | 0.7       | 1.6%                  | 9.16       | 22.9%                  | Negligible         |
| <b>East Yorkshire Caravan Park</b>                                                                                                    | 10.9              | 0.1       | 0.2%                  | 11.00      | 27.5%                  | Negligible         |
| <b>Drax Sport's and Soc</b>                                                                                                           | 10.9              | 0.2       | 0.6%                  | 11.13      | 27.8%                  | Negligible         |
| <b>Wren Hall</b>                                                                                                                      | 8.8               | 0.1       | 0.2%                  | 8.89       | 22.2%                  | Negligible         |
| <b>3 Pear Tree Ave</b>                                                                                                                | 8.5               | 0.2       | 0.6%                  | 8.75       | 21.9%                  | Negligible         |
| <b>Grange Cottages</b>                                                                                                                | 9.4               | 0.1       | 0.4%                  | 9.55       | 23.9%                  | Negligible         |
| <b>Drax Abbey Farm</b>                                                                                                                | 8.5               | 0.7       | 1.6%                  | 9.16       | 22.9%                  | Negligible         |
| <b>Read School</b>                                                                                                                    | 9.2               | 0.1       | 0.2%                  | 9.29       | 23.2%                  | Negligible         |

Table 3-15 - Single Unit Maximum Operational Impact at Human Receptors - Hourly Mean NO<sub>2</sub>  
(Compare to Table 6-15)

| <b>Receptor</b>                                                                                             | <b>Background</b> | <b>PC</b> | <b>PC as % of Obj</b> | <b>PEC</b> | <b>PEC as % of Obj</b> | <b>Description</b> |
|-------------------------------------------------------------------------------------------------------------|-------------------|-----------|-----------------------|------------|------------------------|--------------------|
| <b>Scenario A3 - Combined cycle operation with low NO<sub>x</sub> (50mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                   |           |                       |            |                        |                    |
| <b>Foreman's Cottage</b>                                                                                    | 17.0              | 20.2      | 10.1%                 | 37.2       | 18.6%                  | Negligible         |
| <b>East Yorkshire Caravan Park</b>                                                                          | 21.8              | 9.4       | 4.7%                  | 31.2       | 15.6%                  | Negligible         |
| <b>Drax Sport's and Soc</b>                                                                                 | 21.8              | 19.2      | 9.6%                  | 41.0       | 20.5%                  | Negligible         |
| <b>Wren Hall</b>                                                                                            | 17.6              | 3.3       | 1.7%                  | 20.9       | 10.5%                  | Negligible         |
| <b>3 Pear Tree Ave</b>                                                                                      | 17.0              | 7.7       | 3.8%                  | 24.7       | 12.3%                  | Negligible         |

| <b>Receptor</b>                                                                                                                       | <b>Background</b> | <b>PC</b> | <b>PC as % of Obj</b> | <b>PEC</b> | <b>PEC as % of Obj</b> | <b>Description</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|-----------------------|------------|------------------------|--------------------|
| <b>Grange Cottages</b>                                                                                                                | 18.8              | 7.2       | 3.6%                  | 26.0       | 13.0%                  | Negligible         |
| <b>Drax Abbey Farm</b>                                                                                                                | 17.0              | 19.6      | 9.8%                  | 36.6       | 18.3%                  | Negligible         |
| <b>Read School</b>                                                                                                                    | 18.4              | 6.3       | 3.1%                  | 24.7       | 12.3%                  | Negligible         |
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                   |           |                       |            |                        |                    |
| <b>Foreman's Cottage</b>                                                                                                              | 17.0              | 16.1      | 8.1%                  | 33.1       | 16.6%                  | Negligible         |
| <b>East Yorkshire Caravan Park</b>                                                                                                    | 21.8              | 7.5       | 3.8%                  | 29.3       | 14.7%                  | Negligible         |
| <b>Drax Sport's and Soc</b>                                                                                                           | 21.8              | 15.3      | 7.7%                  | 37.1       | 18.6%                  | Negligible         |
| <b>Wren Hall</b>                                                                                                                      | 17.6              | 2.7       | 1.3%                  | 20.3       | 10.1%                  | Negligible         |
| <b>3 Pear Tree Ave</b>                                                                                                                | 17.0              | 6.2       | 3.1%                  | 23.2       | 11.6%                  | Negligible         |
| <b>Grange Cottages</b>                                                                                                                | 18.8              | 5.8       | 2.9%                  | 24.6       | 12.3%                  | Negligible         |
| <b>Drax Abbey Farm</b>                                                                                                                | 17.0              | 15.7      | 7.8%                  | 32.7       | 16.3%                  | Negligible         |
| <b>Read School</b>                                                                                                                    | 18.4              | 5.0       | 2.5%                  | 23.4       | 11.7%                  | Negligible         |

- 3.1.42 Without SCR, local air quality impacts under scenario A3 (Single Unit CCGT operation) are lower than scenario A1 (Two Unit CCGT) at all receptors. The impact of Single Unit operation varies between receptors and at some receptors, the difference between Two and Single Unit operation is minimal. For example, annual mean NO<sub>2</sub> impacts at Foreman's Cottage reduce from 1.2µg/m<sup>3</sup> to 1.1µg/m<sup>3</sup> with Single Unit operation— at this receptor impacts were dominated by the impacts of Unit X in Scenario A1, and the reduction in impacts (offset by the retention of a coal fired unit) has no significant impact. In contrast, at 3 Pear Tree Avenue, annual mean NO<sub>2</sub> impacts decrease from 1.6µg/m<sup>3</sup> to 0.4µg/m<sup>3</sup>.

Table 3-16 - Single Unit Maximum Operational Impact at Ecological Receptors - Annual Mean NH<sub>3</sub>  
(Compare to Table 6-18)

| <b>Receptor</b>                                                                                                                       | <b>Critical Level</b> | <b>Background (µg/m<sup>3</sup>)</b> | <b>PC (µg/m<sup>3</sup>)</b> | <b>PC as % of Obj.</b> | <b>PEC (µg/m<sup>3</sup>)</b> | <b>PEC as % of Obj.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------|------------------------------|------------------------|-------------------------------|-------------------------|
| <b>Scenario A3 - Combined cycle operation with low NO<sub>x</sub> (50mg/Nm<sup>3</sup>); 1 Unit Repower</b>                           |                       |                                      |                              |                        |                               |                         |
| <b>River Derwent</b>                                                                                                                  | 3                     | 2.76                                 | 0.00                         | 0.1%                   | 2.76                          | 92%                     |
| <b>Lower Derwent</b>                                                                                                                  | 3                     | 2.81                                 | 0.00                         | 0.1%                   | 2.81                          | 94%                     |
| <b>Brighton Meadows</b>                                                                                                               | 3                     | 2.81                                 | 0.00                         | 0.1%                   | 2.81                          | 94%                     |
| <b>Derwent Ings</b>                                                                                                                   | 3                     | 2.76                                 | 0.00                         | 0.1%                   | 2.76                          | 92%                     |
| <b>Thorne Moor</b>                                                                                                                    | 1                     | 2.39                                 | 0.00                         | 0.1%                   | 2.39                          | 239%                    |
| <b>Skipwith Common</b>                                                                                                                | 1                     | 2.42                                 | 0.00                         | 0.1%                   | 2.42                          | 242%                    |
| <b>Humber Estuary</b>                                                                                                                 | 3                     | 2.92                                 | 0.00                         | 0.1%                   | 2.92                          | 97%                     |
| <b>Eskhamhorn</b>                                                                                                                     | 3                     | 2.14                                 | 0.00                         | 0.0%                   | 2.14                          | 71%                     |
| <b>Brockholes</b>                                                                                                                     | 3                     | 2.23                                 | 0.00                         | 0.0%                   | 2.23                          | 74%                     |
| <b>Orchard Farm</b>                                                                                                                   | 3                     | 2.24                                 | 0.00                         | 0.1%                   | 2.24                          | 75%                     |
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                       |                                      |                              |                        |                               |                         |
| <b>River Derwent</b>                                                                                                                  | 3                     | 2.76                                 | 0.04                         | 1.3%                   | 2.80                          | 93%                     |
| <b>Lower Derwent</b>                                                                                                                  | 3                     | 2.81                                 | 0.02                         | 0.8%                   | 2.83                          | 94%                     |
| <b>Brighton Meadows</b>                                                                                                               | 3                     | 2.81                                 | 0.02                         | 0.8%                   | 2.83                          | 94%                     |
| <b>Derwent Ings</b>                                                                                                                   | 3                     | 2.76                                 | 0.01                         | 0.5%                   | 2.77                          | 92%                     |
| <b>Thorne Moor</b>                                                                                                                    | 1                     | 2.39                                 | 0.01                         | 0.6%                   | 2.40                          | 240%                    |
| <b>Skipwith Common</b>                                                                                                                | 1                     | 2.42                                 | 0.01                         | 0.5%                   | 2.43                          | 243%                    |

| <b>Receptor</b>       | <b>Critical Level</b> | <b>Background (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC as % of Obj.</b> | <b>PEC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PEC as % of Obj.</b> |
|-----------------------|-----------------------|---------------------------------------------------------|-------------------------------------------------|------------------------|--------------------------------------------------|-------------------------|
| <b>Humber Estuary</b> | 3                     | 2.92                                                    | 0.01                                            | 0.3%                   | 2.93                                             | 98%                     |
| <b>Eskhamhorn</b>     | 3                     | 2.14                                                    | 0.01                                            | 0.2%                   | 2.15                                             | 72%                     |
| <b>Brockholes</b>     | 3                     | 2.23                                                    | 0.01                                            | 0.2%                   | 2.24                                             | 75%                     |
| <b>Orchard Farm</b>   | 3                     | 2.24                                                    | 0.00                                            | 0.2%                   | 2.24                                             | 75%                     |

Table 3-17 - Single Unit Maximum Operational Impact at Ecological Receptors - Annual Mean NO<sub>x</sub> (Compare to Table 6-19)

| <b>Receptor</b>                                                                                                                       | <b>Critical Level</b> | <b>Background (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC as % of Obj.</b> | <b>PEC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PEC as % of Obj.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------|-------------------------------------------------|------------------------|--------------------------------------------------|-------------------------|
| <b>Scenario A3 - Combined cycle operation with low NO<sub>x</sub> (50mg/Nm<sup>3</sup>); 1 Unit Repower</b>                           |                       |                                                         |                                                 |                        |                                                  |                         |
| <b>River Derwent</b>                                                                                                                  | 30                    | 16.26                                                   | 1.18                                            | 3.9%                   | 17.44                                            | 58%                     |
| <b>Lower Derwent</b>                                                                                                                  | 30                    | 15.32                                                   | 0.69                                            | 2.3%                   | 16.01                                            | 53%                     |
| <b>Brighton Meadows</b>                                                                                                               | 30                    | 15.28                                                   | 0.69                                            | 2.3%                   | 15.97                                            | 53%                     |
| <b>Derwent Ings</b>                                                                                                                   | 30                    | 15.32                                                   | 0.45                                            | 1.5%                   | 15.77                                            | 53%                     |
| <b>Thorne Moor</b>                                                                                                                    | 30                    | 18.56                                                   | 0.17                                            | 0.6%                   | 18.73                                            | 62%                     |
| <b>Skipwith Common</b>                                                                                                                | 30                    | 14.75                                                   | 0.16                                            | 0.5%                   | 14.91                                            | 50%                     |
| <b>Humber Estuary</b>                                                                                                                 | 30                    | 23.19                                                   | 0.28                                            | 0.9%                   | 23.47                                            | 78%                     |
| <b>Eskhamhorn</b>                                                                                                                     | 30                    | 16.49                                                   | 0.20                                            | 0.7%                   | 16.69                                            | 56%                     |
| <b>Brockholes</b>                                                                                                                     | 30                    | 17.8                                                    | 0.20                                            | 0.7%                   | 18.00                                            | 60%                     |
| <b>Orchard Farm</b>                                                                                                                   | 30                    | 17.9                                                    | 0.15                                            | 0.5%                   | 18.05                                            | 60%                     |
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                       |                                                         |                                                 |                        |                                                  |                         |
| <b>River Derwent</b>                                                                                                                  | 30                    | 16.26                                                   | 0.71                                            | 2.4%                   | 16.97                                            | 57%                     |

| <b>Receptor</b>         | <b>Critical Level</b> | <b>Background (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC as % of Obj.</b> | <b>PEC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PEC as % of Obj.</b> |
|-------------------------|-----------------------|---------------------------------------------------------|-------------------------------------------------|------------------------|--------------------------------------------------|-------------------------|
| <b>Lower Derwent</b>    | 30                    | 15.32                                                   | 0.43                                            | 1.4%                   | 15.75                                            | 53%                     |
| <b>Brighton Meadows</b> | 30                    | 15.28                                                   | 0.43                                            | 1.4%                   | 15.71                                            | 52%                     |
| <b>Derwent Ings</b>     | 30                    | 15.32                                                   | 0.28                                            | 0.9%                   | 15.60                                            | 52%                     |
| <b>Thorne Moor</b>      | 30                    | 18.56                                                   | 0.11                                            | 0.4%                   | 18.67                                            | 62%                     |
| <b>Skipwith Common</b>  | 30                    | 14.75                                                   | 0.10                                            | 0.3%                   | 14.85                                            | 50%                     |
| <b>Humber Estuary</b>   | 30                    | 23.19                                                   | 0.18                                            | 0.6%                   | 23.37                                            | 78%                     |
| <b>Eskhamhorn</b>       | 30                    | 16.49                                                   | 0.12                                            | 0.4%                   | 16.61                                            | 55%                     |
| <b>Brockholes</b>       | 30                    | 17.8                                                    | 0.12                                            | 0.4%                   | 17.92                                            | 60%                     |
| <b>Orchard Farm</b>     | 30                    | 17.9                                                    | 0.09                                            | 0.3%                   | 17.99                                            | 60%                     |

Table 3-18 - Single Unit Maximum Operational Impact at Ecological Receptors - Daily Mean  $\text{NO}_x$   
(Compare to Table 6-20)

| <b>Receptor</b>                                                                                                                        | <b>Critical Level</b> | <b>Background (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC as % of Obj.</b> | <b>PEC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PEC as % of Obj.</b> |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------|-------------------------------------------------|------------------------|--------------------------------------------------|-------------------------|
| <b>Scenario A3 - Combined cycle operation with low <math>\text{NO}_x</math> (<math>50\text{mg}/\text{Nm}^3</math>); 1 Unit Repower</b> |                       |                                                         |                                                 |                        |                                                  |                         |
| <b>River Derwent</b>                                                                                                                   | 75                    | 32.52                                                   | 19.4                                            | 25.9%                  | 52.0                                             | 69%                     |
| <b>Lower Derwent</b>                                                                                                                   | 75                    | 30.64                                                   | 14.0                                            | 18.7%                  | 44.7                                             | 60%                     |
| <b>Brighton Meadows</b>                                                                                                                | 75                    | 30.56                                                   | 14.0                                            | 18.7%                  | 44.6                                             | 59%                     |
| <b>Derwent Ings</b>                                                                                                                    | 75                    | 30.64                                                   | 6.3                                             | 8.4%                   | 36.9                                             | 49%                     |
| <b>Thorne Moor</b>                                                                                                                     | 75                    | 37.12                                                   | 5.8                                             | 7.8%                   | 42.9                                             | 57%                     |
| <b>Skipwith Common</b>                                                                                                                 | 75                    | 29.5                                                    | 4.8                                             | 6.4%                   | 34.3                                             | 46%                     |



| <b>Receptor</b>                                                                                                                       | <b>Critical Level</b> | <b>Background (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PC as % of Obj.</b> | <b>PEC (<math>\mu\text{g}/\text{m}^3</math>)</b> | <b>PEC as % of Obj.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------|-------------------------------------------------|------------------------|--------------------------------------------------|-------------------------|
| <b>Humber Estuary</b>                                                                                                                 | 75                    | 46.38                                                   | 6.0                                             | 8.0%                   | 52.3                                             | 70%                     |
| <b>Eskhamhorn</b>                                                                                                                     | 75                    | 32.98                                                   | 8.1                                             | 10.7%                  | 41.0                                             | 55%                     |
| <b>Brockholes</b>                                                                                                                     | 75                    | 35.6                                                    | 9.3                                             | 12.4%                  | 44.9                                             | 60%                     |
| <b>Orchard Farm</b>                                                                                                                   | 75                    | 35.8                                                    | 5.3                                             | 7.1%                   | 41.1                                             | 55%                     |
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                       |                                                         |                                                 |                        |                                                  |                         |
| <b>River Derwent</b>                                                                                                                  | 75                    | 32.52                                                   | 12.3                                            | 16.4%                  | 44.8                                             | 60%                     |
| <b>Lower Derwent</b>                                                                                                                  | 75                    | 30.64                                                   | 12.0                                            | 16.1%                  | 42.7                                             | 57%                     |
| <b>Brighton Meadows</b>                                                                                                               | 75                    | 30.56                                                   | 12.0                                            | 16.1%                  | 42.6                                             | 57%                     |
| <b>Derwent Ings</b>                                                                                                                   | 75                    | 30.64                                                   | 5.2                                             | 6.9%                   | 35.8                                             | 48%                     |
| <b>Thorne Moor</b>                                                                                                                    | 75                    | 37.12                                                   | 4.8                                             | 6.3%                   | 41.9                                             | 56%                     |
| <b>Skipwith Common</b>                                                                                                                | 75                    | 29.5                                                    | 4.0                                             | 5.3%                   | 33.5                                             | 45%                     |
| <b>Humber Estuary</b>                                                                                                                 | 75                    | 46.38                                                   | 4.9                                             | 6.6%                   | 51.3                                             | 68%                     |
| <b>Eskhamhorn</b>                                                                                                                     | 75                    | 32.98                                                   | 5.2                                             | 6.9%                   | 38.2                                             | 51%                     |
| <b>Brockholes</b>                                                                                                                     | 75                    | 35.6                                                    | 5.6                                             | 7.4%                   | 41.2                                             | 55%                     |
| <b>Orchard Farm</b>                                                                                                                   | 75                    | 35.8                                                    | 3.2                                             | 4.3%                   | 39.0                                             | 52%                     |

Table 3-19 - Single Unit Maximum Operational Impact at Ecological Receptors – Nitrogen Deposition (Compare to Table 6-21)

| <b>Receptor</b>                                                                                             | <b>Critical Level</b> | <b>Background (kgN/ha/yr)</b> | <b>PC (kgN/ha/yr)</b> | <b>PC as % of Obj.</b> | <b>PEC (kgN/ha/yr)</b> | <b>PEC as % of Obj.</b> |
|-------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------|-----------------------|------------------------|------------------------|-------------------------|
| <b>Scenario A3 - Combined cycle operation with low NO<sub>x</sub> (50mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                       |                               |                       |                        |                        |                         |
| <b>River Derwent</b>                                                                                        | Not Sensitive         |                               |                       |                        |                        |                         |

| <b>Receptor</b>                                                                                                                       | <b>Critical Level</b> | <b>Background (kgN/ha/yr)</b> | <b>PC (kgN /ha/yr)</b> | <b>PC as % of Obj.</b> | <b>PEC (kgN /ha/yr)</b> | <b>PEC as % of Obj.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------|------------------------|------------------------|-------------------------|-------------------------|
| <b>Lower Derwent</b>                                                                                                                  | 20                    | 21.0                          | 0.08                   | 0.4%                   | 21.1                    | 105%                    |
| <b>Brighton Meadows</b>                                                                                                               | 20                    | 21.0                          | 0.08                   | 0.4%                   | 21.1                    | 105%                    |
| <b>Derwent Ings</b>                                                                                                                   | 20                    | 20.0                          | 0.05                   | 0.3%                   | 20.9                    | 105%                    |
| <b>Thorne Moor</b>                                                                                                                    | 5                     | 19.2                          | 0.02                   | 0.4%                   | 19.2                    | 384%                    |
| <b>Skipwith Common</b>                                                                                                                | 10                    | 19.2                          | 0.02                   | 0.2%                   | 19.2                    | 192%                    |
| <b>Humber Estuary</b>                                                                                                                 | 20                    | 20.7                          | 0.04                   | 0.2%                   | 20.8                    | 104%                    |
| <b>Eskhamhor n</b>                                                                                                                    | 20                    | 17.9                          | 0.02                   | 0.1%                   | 17.9                    | 90%                     |
| <b>Brockholes</b>                                                                                                                     | 10                    | 18.5                          | 0.02                   | 0.2%                   | 18.5                    | 185%                    |
| <b>Orchard Farm</b>                                                                                                                   | 10                    | 19.2                          | 0.02                   | 0.2%                   | 19.2                    | 192%                    |
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                       |                               |                        |                        |                         |                         |
| <b>River Derwent</b>                                                                                                                  | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Lower Derwent</b>                                                                                                                  | 20                    | 21.0                          | 0.16                   | 0.8%                   | 21.16                   | 106%                    |
| <b>Brighton Meadows</b>                                                                                                               | 20                    | 21.0                          | 0.16                   | 0.8%                   | 21.16                   | 106%                    |
| <b>Derwent Ings</b>                                                                                                                   | 20                    | 20.9                          | 0.10                   | 0.5%                   | 20.96                   | 105%                    |
| <b>Thorne Moor</b>                                                                                                                    | 5                     | 19.2                          | 0.04                   | 0.8%                   | 19.22                   | 384%                    |
| <b>Skipwith Common</b>                                                                                                                | 10                    | 19.2                          | 0.04                   | 0.4%                   | 19.22                   | 192%                    |
| <b>Humber Estuary</b>                                                                                                                 | 20                    | 20.7                          | 0.07                   | 0.3%                   | 20.79                   | 104%                    |
| <b>Eskhamhor n</b>                                                                                                                    | 20                    | 17.9                          | 0.05                   | 0.2%                   | 17.97                   | 90%                     |
| <b>Brockholes</b>                                                                                                                     | 10                    | 18.5                          | 0.05                   | 0.5%                   | 18.55                   | 185%                    |

| <b>Receptor</b>     | <b>Critical Level</b> | <b>Background (kgN/ha/yr)</b> | <b>PC (kgN /ha/yr)</b> | <b>PC as % of Obj.</b> | <b>PEC (kgN /ha/yr)</b> | <b>PEC as % of Obj.</b> |
|---------------------|-----------------------|-------------------------------|------------------------|------------------------|-------------------------|-------------------------|
| <b>Orchard Farm</b> | 10                    | 19.2                          | 0.03                   | 0.3%                   | 19.23                   | 192%                    |

Table 3-20 - Single Unit Maximum Operational Impact at Ecological Receptors – Acid Deposition (from Nitrogen) (Compare to Table 6-22)

| <b>Receptor</b>                                                                                                                       | <b>Critical Level</b> | <b>Background (kgN/ha/yr)</b> | <b>PC (kgN /ha/yr)</b> | <b>PC as % of Obj.</b> | <b>PEC (kgN /ha/yr)</b> | <b>PEC as % of Obj.</b> |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------|------------------------|------------------------|-------------------------|-------------------------|
| <b>Scenario A3 - Combined cycle operation with low NO<sub>x</sub> (50mg/Nm<sup>3</sup>); 1 Unit Repower</b>                           |                       |                               |                        |                        |                         |                         |
| <b>River Derwent</b>                                                                                                                  | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Lower Derwent</b>                                                                                                                  | 4.856                 | 1.5                           | 0.006                  | 0.1%                   | 1.51                    | 31%                     |
| <b>Brighton Meadows</b>                                                                                                               | 4.856                 | 1.5                           | 0.006                  | 0.1%                   | 1.51                    | 31%                     |
| <b>Derwent Ings</b>                                                                                                                   | 4.856                 | 1.49                          | 0.004                  | 0.1%                   | 1.49                    | 31%                     |
| <b>Thorne Moor</b>                                                                                                                    | 0.462                 | 1.37                          | 0.002                  | 0.3%                   | 1.37                    | 297%                    |
| <b>Skipwith Common</b>                                                                                                                | 0.820                 | 1.37                          | 0.001                  | 0.2%                   | 1.37                    | 167%                    |
| <b>Humber Estuary</b>                                                                                                                 | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Eskhamhor n</b>                                                                                                                    | 1.998                 | 1.28                          | 0.002                  | 0.1%                   | 1.28                    | 64%                     |
| <b>Brockholes</b>                                                                                                                     | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Orchard Farm</b>                                                                                                                   | 5.071                 | 1.37                          | 0.001                  | 0.0%                   | 1.37                    | 27%                     |
| <b>Scenario B<sub>alt</sub> - Combined cycle operation with SCR (NO<sub>x</sub> emissions at 30mg/Nm<sup>3</sup>); 1 Unit Repower</b> |                       |                               |                        |                        |                         |                         |
| <b>River Derwent</b>                                                                                                                  | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Lower Derwent</b>                                                                                                                  | 4.856                 | 1.5                           | 0.012                  | 0.2%                   | 1.51                    | 31%                     |
| <b>Brighton Meadows</b>                                                                                                               | 4.856                 | 1.5                           | 0.012                  | 0.2%                   | 1.51                    | 31%                     |

| <b>Receptor</b>        | <b>Critical Level</b> | <b>Background (kgN/ha/yr)</b> | <b>PC (kgN /ha/yr)</b> | <b>PC as % of Obj.</b> | <b>PEC (kgN /ha/yr)</b> | <b>PEC as % of Obj.</b> |
|------------------------|-----------------------|-------------------------------|------------------------|------------------------|-------------------------|-------------------------|
| <b>Derwent Ings</b>    | 4.856                 | 1.49                          | 0.007                  | 0.2%                   | 1.50                    | 31%                     |
| <b>Thorne Moor</b>     | 0.462                 | 1.37                          | 0.003                  | 0.6%                   | 1.37                    | 297%                    |
| <b>Skipwith Common</b> | 0.82                  | 1.37                          | 0.003                  | 0.3%                   | 1.37                    | 167%                    |
| <b>Humber Estuary</b>  | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Eskhamhor n</b>     | 1.998                 | 1.28                          | 0.003                  | 0.2%                   | 1.28                    | 64%                     |
| <b>Brockholes</b>      | Not Sensitive         |                               |                        |                        |                         |                         |
| <b>Orchard Farm</b>    | 5.071                 | 1.37                          | 0.002                  | 0.0%                   | 1.37                    | 27%                     |

- 3.1.43 Without NO<sub>x</sub> abatement, modelled concentrations and rates of deposition are lower with a Single Unit operation than with Two Units repowered at all designated sites.
- 3.1.44 With SCR, ammonia concentrations are marginally higher over some sites with Single Unit operation than Two Units. This is due to the concentration of ammonia emissions from a single source (two stacks close together) rather than the emissions being spread between the Two Units. This impact amounts to less than 0.15% of the critical level over River Derwent (where the predicted ammonia concentrations are within the critical level), but less than 0.04% of the critical level over Thorne Moore and Skipwith Common.
- 3.1.45 This results in increased nitrogen/acid deposition from reduced nitrogen but the effect is offset by reductions in deposition from nitrogen oxides such that there is no perceptible difference in nitrogen deposition over the designated sites between scenarios with one or two units repowered.
- 3.1.46 It must, however, be stressed that the model assumptions are substantially changed in the Single Unit scenario in relation to both likely operations and ammonia emissions, such that impacts are likely to be over-estimated.
- 3.1.47 With a Single Unit repowered, ammonia emissions are assumed to just meet the ammonia cap criterion. If mass emissions occur at a lower rate then the impacts from the single unit would be significantly lower than those presented above.
- 3.1.48 Therefore, in operation, the local air quality impacts from Single Unit operation are likely to be equivalent to or lower than the emissions from the Two Unit (Units X and Y) scenario realistic worst case scenario with SCR (scenario B) and without SCR (scenario A1) assessed in the ES.

Table 3-21 - ExA Written Question – AQ 1.11

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AQ 1.11 | Applicant   | <p><b>Stack Height</b></p> <p>The Air Dispersion Modelling assessment states that the recommended 'minimum' stack height is 120m. This assessment also states that stack heights of greater than 120m are not structurally possible with the proposed vertical Heat Recovery Steam Generators. It is noted that Schedule 13 of the dDCO identifies that the stack height is a 'maximum' of 120m Above Ground Level (AGL) and thus implies the stack could be constructed at a height less than 120 AGL.</p> <p>i) Confirm if the recommendation of 120m as stated in APP-100 is 120m AGL or Above Ordinance Datum (AOD).</p> <p>ii) As the Habitats Regulations Assessment (HRA) report relies upon the ES air quality assessment and modelling, would the conclusion of the HRA be affected if the stack height was constructed lower than 120m AGL?</p> |

3.1.49 With respect to part (i) of the question, the stack height was determined through air dispersion modelling and a sensitivity analysis looked at improvements in dispersion characteristics as the height of the stacks increased above the height of the cooling towers. Discussion with the Engineering Team has indicated that a stack height of around 120 m approaches the limit of what is achievable within the constraints of the available space on the Existing Drax Power Station Complex and the structural constraints of the Heat Recovery Steam Generators. The Applicant would note that whilst the precise height achievable for the stack in terms of structural integrity can only be determined during detailed design, as noted in response to question DCO 1.27, the Applicant is currently reviewing the EIA assessment in order to propose a maximum stack height, falling within the parameters of the ES, so that minimum and maximum parameters for the stacks can be secured in the DCO. The stack height modelled was at a height of 120m Above Ground Level (AGL) with the cooling towers modelled at 114m AGL.

3.1.50 With respect to part (ii) of the question, in order for the conclusions generated within the HRA to remain robust, the stack height would have to remain at no less than 120m (AGL).

## 4 BIODIVERSITY AND HABITATS REGULATIONS

Table 4-1 - ExA Written Question – BHR 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.1 | Applicant   | <p><b>Gas pipeline crossings techniques</b></p> <p>Paragraph 3.3.19 of Chapter 3 of the ES states that the Gas Pipeline will likely be constructed using primarily open cut construction techniques. It is noted that Chapter 9 of the ES has made an assessment with particular assumptions, such as it is likely that the gas pipeline crossings under watercourses, drains and hedgerows would be undertaken using trenchless techniques. It also includes at Section 9.7, further strategies should trenchless crossing not be used. Yet, the term “<i>likely to be used</i>” is also stated.</p> <p>The ExA is concerned that the wordings “<i>consider the use of trenchless crossing techniques</i>” and “<i>likely to be used</i>” are insufficiently precise, that the Applicant should commit to using trenchless crossing techniques for the constraints.</p> <p>i) Confirm if the crossings are to be trenchless and provide a plan.</p> <p>ii) Clarify whether trenchless techniques are relied upon for the conclusion of no likely significant effects in the ES in respect to biodiversity.</p> <p>iii) How is trenchless techniques secured in the dDCO in this regard.</p> <p><i>[N.B: This question overlaps with FW 1.1 – The ExA is content if the Applicant wishes to addresses the questions together.]</i></p> |

- 4.1.1 With respect to part (i) of the question, the Applicant can define the approach to crossings techniques and the proposed approach as has been determined during the design studies conducted to date. This includes a commitment to use, where appropriate, trenchless crossing techniques at a number of locations identified below.
- 4.1.2 Table 3-3 of the ES shows which crossings may be subject to a trenchless approach and which may not. This table is extracted below. The table refers to “likely technique” in order to provide the Applicant with flexibility should it prove more beneficial to use another method. For example, if when breaking ground an archaeological artefact is found then it may be beneficial (in terms of time, resource and impact) to use a trenchless approach instead of open cut.



Figure 4-1 - Extract from page 3-10 of ES

3.2.37. Crossings anticipated as part of the Gas Pipeline construction are shown in Table 3-3.

Table 3-3 - Pipeline Construction Crossings

| Description                             | Type               | Likely Technique |
|-----------------------------------------|--------------------|------------------|
| Crossing off Rusholme Lane (Minor Road) | Minor Road         | Open Cut         |
| Field North of Rusholme Lane            | Minor Water        | Trenchless       |
| Main Road, Drax                         | Minor Road         | Trenchless       |
| Main Road, Drax                         | Minor Water        |                  |
| Field West of Main Road                 | Overhead Electrics | Open Cut         |
| Field South of Carr Lane                | Minor Water        | Trenchless       |
| Wren Hall Lane                          | Overhead Electrics | Open Cut         |
| Wrenn Hall Lane                         | Minor Road         | Trenchless       |
| Field in front of Drax Site             | Overhead Electrics | Open Cut         |

- 4.1.3 At minor water crossings (for example streams, deep ditches or deep drains), the Applicant's intention will be to use trenchless techniques, as shown in the table. By this it is meant that the approach will not be open cut and therefore will not include a trench straight through the feature. Final confirmation of this method, together with the method of crossing other features, will be determined following further design work. Other crossings, including shallow ditches, are expected to be addressed using open cut techniques.
- 4.1.4 The proposed approach for each of the crossings referred to in the above table is given below:
- Crossing of Rusholme Lane (Minor Road) Minor Road: Open Cut
    - Selected as Open cut as it is considered that a single lane of traffic can be maintained during the open cut construction process (which for this crossing should be less than 1 week), which should be sufficient for the likely traffic
  - Field North of Rusholme Lane Minor Watercourse: Trenchless
    - Selected as trenchless in consideration of the depth of the ditch (considering that the primary design code IGEM/TD/1 calls for a clearance of 1.2m between the installed pipeline and the true cleaned bottom of the drain) and the proximity of a water vole burrow.
  - Main Road, Drax, Minor Road and Minor Watercourse: Trenchless
    - Selected as a trenchless crossing in consideration of the significance of the road to local residents and the presence of a water feature on the west of the road.
  - Field West of Main Road Overhead Electrics: Open Cut
    - Selected as open cut and labelled as a crossing to ensure due consideration is given to the risk presented from the presence of the overhead lines.
  - Field South of Carr Lane Minor Watercourse: Trenchless
    - Selected as trenchless in consideration of the depth of the ditch (considering that the primary design code IGEM/TD/1 calls for a clearance of 1.2m between

- the installed pipeline and the true cleaned bottom of the drain) and the likely impacts from the presence of the declassified SINC to the north.
- Wren Hall Lane Overhead Electrics: Open Cut
    - Selected as open cut and labelled as a crossing to ensure due consideration is given to the risk presented from the presence of the overhead lines.
  - Wren Hall Lane Minor Road: Trenchless
    - Selected as a trenchless crossing in consideration of the significance of the road to local residents and the presence of a water feature on the west of the road.
  - Field in front of Drax Site: Open Cut
    - Selected as open cut and labelled as a crossing to ensure due consideration is given to the risk presented from the presence of the overhead lines.
- 4.1.5 With respect to part (ii) of the question, trenchless techniques are not relied upon for the conclusion of no likely significant effects in the ES in respect to biodiversity. See for example, paragraph 9.8.23 of the ES Biodiversity Chapter 9 (Examination Library Ref: APP-077). Should trenchless techniques not take place, for example within areas supporting water vole, specific mitigation has been identified (i.e. minimising working footprint and undertaking displacement of individuals should they be present) to mitigate any potentially significant effects, as set out in paragraphs 9.8.30 to 9.8.31 of the ES Biodiversity Chapter.
- 4.1.6 Furthermore, given the nature and extent of habitats within the Pipeline Area (i.e. predominantly arable land) in combination with the short-term duration of construction for the Gas Pipeline, impacts on habitats would still be minimal should trenchless techniques not be used. For areas that would benefit from trenchless techniques, this has been confirmed in the design of the Gas Pipeline (as per response (i) above).
- 4.1.7 With respect to part (iii) of the question, the use of trenchless techniques, as the preferred method, for water crossings is secured through requirement 16 of the dDCO which secures the approval and implementation of the CEMP, in substantial accordance with the Outline CEMP (Examination Library ref APP-133, and which is a certified document as identified in Schedule 15, table 15 of the draft DCO).
- 4.1.8 The revised Outline CEMP (Applicant Document Ref: 6.5) submitted at Deadline 2 states at paragraph 3.8.2 *“The crossings of the Gas Pipeline with the watercourses will be constructed using trenchless crossing techniques to minimise impact on the watercourses unless such techniques are not appropriate following pre-construction surveys.”*

Table 4-2 - ExA Written Question – BHR 1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.2 | Applicant   | <p><b>Gas pipeline crossings techniques</b></p> <p>Chapter 9 of the ES also sets out various mitigation measures to minimise adverse impacts on species such as otters, water voles and eels, in the event that trenchless techniques were not possible.</p> <p>i) Demonstrate the impacts on protected species if trenchless crossings are not possible.</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>ii) Provide further details regarding mitigation measures to be employed if trenchless techniques are not possible.</p> <p>iii) Explain how additional techniques would be secured in the dDCO</p> <p>For Natural England, the Environment Agency and North Yorkshire County Council:</p> <p>iv) Comment on the uncertainty associated with techniques proposed for the gas pipeline crossings under watercourses, drains and hedgerows.</p> |

- 4.1.9 With respect to part (i) of the question, very little evidence of otter was discovered within the Pipeline Area due to the lack of suitable commuting, foraging breeding and resting sites. The majority of aquatic habitat (i.e. ditches and watercourses) within the Pipeline Area was found to hold little water during ecological surveys carried out between August 2017 and August 2018 and were therefore of limited suitability for otter. Terrestrial habitat within the Pipeline Area was also of limited suitability for otters to use as commuting routes due to minimal vegetation cover, although as recognised in the ES biodiversity chapter (Examination Library Ref: APP-077) it is possible that the local ditch network is used occasionally by the local otter population.
- 4.1.10 Due to the short term construction timing of the Gas Pipeline and measures included in the Outline CEMP (Examination Library Reference APP-133, although note a revised version of the Outline CEMP is submitted at this Deadline 2), specifically measures to control noise and vibration and species specific mitigation, no significant impacts on otters would result if trenchless techniques are not used.
- 4.1.11 Should trenchless techniques not be used in areas where water vole have been identified, measures would be instigated to minimise impacts on this species. The exact nature of any such mitigation would be dependent on the construction techniques proposed for each watercourse. In the absence of mitigation, water voles could be killed or injured and their burrows/places of shelter destroyed. In the absence of mitigation, installation of the Gas Pipeline could also temporarily obstruct the movement of water voles along the watercourses they inhabit. Any obstruction would be short-lived due to the short timescale required for pipeline installation.
- 4.1.12 Mitigation would be likely to comprise a combination of minimising the working footprint and manipulating riparian habitats within the construction footprint to displace any water voles present prior to construction commencing, as identified in paragraph 9.8.30 of the ES biodiversity chapter (Examination Library Ref: APP-077). If needed, these measures would be carried out under licence to Natural England. On the basis of the current licensing system this would likely be via the use of a class licence, as set out in section 9.8.31 of the ES biodiversity chapter (Examination Library Ref: APP-077). It is unlikely a site-specific licence would be needed, unless the licensing regime changes between Examination and commencement of the Proposed Scheme. The outline mitigation measures are included in Table 3-1 and referenced in Appendices 3 and 5 of the updated outline Landscape and

Biodiversity Strategy submitted at Deadline 2 (Applicants Document Ref 6.7 Rev 002). With these mitigation measures in place, significant effects on water voles would not occur.

- 4.1.13 No waterbodies suitable to support fish species of conservation concern (for example lamprey and shad species, bullhead and eel) will be removed or physically altered during the construction of the Gas Pipeline. Furthermore, the CEMP will be in place to control and manage the risk of pollution incidents (Examination Library Ref: APP-133, although note a revised version of the Outline CEMP is submitted at this Deadline 2). Any changes in water quality during the construction of the Gas Pipeline are expected to be negligible and hence no significant effects are expected to arise.
- 4.1.14 With respect to part (ii) of the question, additional mitigation measures are not considered necessary. Mitigation measures already proposed (as referenced in Paragraphs 2.1.9 to 2.1.12 above) would address the use of either trenchless or trenched techniques for pipeline installation, with detail to be provided in the detailed Landscape and Biodiversity Strategy and construction-phase CEMP(s). Mitigation is outlined in Table 3-1 and Appendix 3 of the revised Outline Landscape and Biodiversity Strategy (Applicant's document ref 6.7 Rev 002). Mitigation is also summarised in the revised Outline CEMP (Applicant's document ref 6.5 Rev 02, submitted at Deadline 2). Methods for mitigating effects on otter include a combination of fencing and management of watercourses (recorded as being suitable for otter use) and management of the construction footprint either side of the affected watercourses, to maintain usable commuting routes. This includes the avoidance of any obstructions to established otter paths. For water vole, mitigation measures include minimising the working footprint to avoid water vole burrows and if necessary, the manipulation of riparian habitats within the construction footprint to displace any water voles present prior to construction (under a water vole displacement licence). Detailed mitigation will be produced within the detailed Landscape and Biodiversity Strategy.
- 4.1.15 With respect to part (iii) of the question, the delivery of mitigation would be secured by Requirements 7 (Provision of landscape and biodiversity mitigation) and 16 (Construction Environmental Management Plan) of the draft DCO (Examination Library Ref: AS-012, a revised version of which is submitted at this Deadline 2, Applicant's document ref 3.1 Rev 2). Those requirements secure the approval and implementation of the Landscape and Biodiversity Strategy (in substantial accordance with the Outline Landscape and Biodiversity Strategy) and the Construction Environmental Management Plan (in substantial accordance with the Outline CEMP). The Outline Landscape and Biodiversity Strategy (a revised version of which is submitted at this Deadline 2, Applicant's document ref 6.7 Rev 002) includes the mitigation requirements in Table 3-1 and Appendix 3. The Outline CEMP (a revised version of which is submitted at this Deadline 2, Applicant's document ref 6.5 Rev 002) includes the mitigation requirements. Both documents are certified documents, as identified in Schedule 15, table 15 of the draft DCO.
- 4.1.16 As regards part (iv) of the question, there is not complete certainty at this point as to the final construction techniques that will be employed for pipeline installation. The preference for watercourse crossings and crossings of other ecologically-sensitive features is for the use of trenchless techniques to avoid / minimise impacts. Should pre-construction surveys and other subsequent information indicate open cut crossing techniques are required, the mitigation measures described above and secured by Requirements 7 (Provision of landscape and biodiversity mitigation) and 16 (Construction Environmental Management

Plan) of the draft DCO (Examination Library Ref: ASPP-0120) would operate to manage and minimise the effects on protected species so that there would be no likely significant effects.

- 4.1.17 The final techniques to construct the Gas Pipeline will be confirmed in the CEMP, which must be submitted to SDC for approval, and so SDC will ultimately be the decision maker on the Gas Pipeline installation techniques. Given the final CEMP must be substantially in accordance with the outline CEMP, the Applicant would need to confirm trenchless techniques for the minor water courses. Where trenchless crossings were not to be used, The Applicant would have to explain why such trenchless techniques could not be utilised. They would also have to explain how the impacts of Open Cut installation would be addressed such that significant effects continued to be avoided. Any proposal to address the effects of Open Cut techniques would need to take into account the particular circumstances of the crossing in question, such as ground conditions and ecological quality.

Table 4-3 - ExA Written Question – BHR 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.3 | Applicant   | <p><b>Field Surveys</b></p> <p>Table 9-2 of Chapter 9 of the ES identifies that a “<i>reptile survey report documenting the results of the reptile survey will be submitted after the dDCO submission date as an addendum.</i>” Paragraphs 9.5.14 to 9.5.24 identify that further surveys are being undertaken in 2018 for:</p> <ul style="list-style-type: none"> <li>○ Reptiles (two further surveys)</li> <li>○ Breeding birds</li> <li>○ Bats (activity surveys)</li> </ul> <p>i) Explain why these surveys were not carried out prior to submission of the application.</p> <p>ii) Provide an update with regard to further ecological surveys that are identified in the ES as to be undertaken in 2018.</p> <p>iii) Provide the results of these surveys and identify how the results of these affect the assessment in the ES, including mitigation proposed.</p> |

- 4.1.18 With respect to part (i) of the question, a combination of ecological seasonality and project programme prevented the surveys being completed before the submission of the Application.
- 4.1.19 With respect to part (ii) of the question, all ecological surveys have now been completed along with the associated reporting. The breeding bird survey (Examination Library ref REP1-010) and reptile survey reports (Examination Library ref REP1-011) have been finalised and were submitted to the Examination for Deadline 1. The bat activity survey report (Applicant’s document ref 8.4.5) is completed and has been sent to Natural England for review. NYCC has confirmed their agreement to the findings of the bat activity survey report (see email from Julia Casterton of NYCC Ecology Service, in Appendix BHR-A). This report is submitted to the Examination for this Deadline 2.



- 4.1.20 With respect to part (iii) of the question, the results of the surveys are set out in the reports submitted for Deadlines 1 and 2, as referred to in response to part (ii) of this question. A precautionary approach to the assessment of significant impacts and effects on breeding birds, reptiles and foraging and commuting bats was taken in the ES; the results of the surveys have confirmed the findings of the ES, and the assessment reported in the ES remains robust and is somewhat conservative given the outcome of the surveys. The mitigation measures proposed in the ES remain appropriate and are not affected by the results of the surveys.

Table 4-4 - ExA Written Question – BHR 1.4

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.4 | Applicant   | <p><b>Field Surveys</b></p> <p>In respect to question BHR 1.3, the Applicant made the Inspectorate aware of this possibility at the scoping stage. Table 9-2 in response to comments made by the Inspectorate in the Scoping Opinion, states that the Applicant has agreed the scope of the biodiversity impact assessment, and the approach to addressing potential data omissions arising from incomplete or partial ecological survey data with Natural England (NE) and North Yorkshire Council Ecology Service (NYCES).</p> <p>Provide copies of agreements reached and/or confirm agreement with any Statement of Common Ground with these consultation bodies.</p> <p><i>[N.B It is noted that no concerns regarding data missions/ approach to missing data has been identified in the respective RRs from NE and NYCES]</i></p> |

- 4.1.21 The email referred to in Table 9-2, from NE dated 13 April 2018, is enclosed at Appendix BHR-B. In any event, a Statement of Common Ground has been reached with NE (Examination Library Ref: REP1-004), which confirms at paragraph 3.8.5 that the "*method of baseline data collection and baseline conditions set out in section 9.6 and subsequent supplemental environmental information is appropriate and agreed.*"
- 4.1.22 A draft Statement of Common Ground has been reached with NYCC and SDC (Examination Library Ref: REP1-006), which confirms at paragraph 3.15.4 that the "*method of baseline data collection and baseline conditions set out in sections 9.5.12 to 9.5.25 and 9.6 is appropriate and agreed....*"

Table 4-5 - ExA Written Question – BHR 1.5

| ExA Ref | Question to | Question                   |
|---------|-------------|----------------------------|
| BHR 1.5 | Applicant   | <b>Ecological Networks</b> |



| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>Paragraph 9.5.30 of Chapter 9 of the ES states that “<i>Ecological networks are assessed based on their resilience to the effects of the Proposed Scheme and their relative importance.</i>”</p> <p>i) Confirm if such an assessment of ecological networks has been carried out and identify where this has been presented in the ES.</p> <p>ii) Explain how the habitats to be created as part of the mitigation measures would contribute to coherent ecological networks.</p> |

- 4.1.23 With respect to part (i) of the question, the assessment of ecological networks is contained within Sections 9.6 to 9.8 of ES Chapter 9 (Examination Library ref APP-077), where consideration is given to the potential fragmentation and other effects of the Proposed Scheme on habitats and the protected and otherwise notable species that use them.
- 4.1.24 With respect to part (ii) of the question, the locations selected for habitat creation, restoration and enhancement in the outline Landscape and Biodiversity Strategy (Examination Library Ref: APP-135, a revised version of which is submitted at this Deadline 2, Applicant's document ref 6.7 Rev 002) provide opportunities to improve linkages between existing habitats and contribute to coherent ecological networks. The proposed enhancements are set out on Figures 6.7.1 to 6.7.11 in the outline Landscape and Biodiversity Strategy. A summary of how each area of habitat creation will contribute to ecological networks around the Proposed Scheme is set out in the table below (with references to the appropriate figure in the outline Landscape and Biodiversity Strategy provided)

Table 4-6 - Summary of Ecological Contributions

| Compensation Area    | Contribution to Ecological Networks                                                                                                                                                                                                                                                                                                                                                                                                                                       | Figure Reference |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Additional Area 1    | Creation of mosaic of habitats in area currently dominated by areas of hard standing. Provides improved habitat connectivity between habitats to the east and west. Wetland habitat creation will provide a range of hydrological conditions dependent on weather conditions and the profile of the created features. The increased availability of wetland combined with other habitat creation measures will contribute to the resilience of local ecological networks. | 6.7.11           |
| Additional Area 2    | Proposed habitat enhancements will provide minor improvements in habitat connectivity with existing habitats to the north, east and west.                                                                                                                                                                                                                                                                                                                                 |                  |
| Additional Area 3    | The proposed reduction in grassland management and increased diversity of habitats will improve ecological connectivity between and within this area and the surrounding habitats.                                                                                                                                                                                                                                                                                        |                  |
| Development Parcel A | This area would include new hedgerow planting and hedgerow enhancement and introduction of                                                                                                                                                                                                                                                                                                                                                                                | 6.7.5            |

| Compensation Area    | Contribution to Ecological Networks                                                                                                                                                                                                                                                                                                                                                                                                                 | Figure Reference |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                      | infill hedgerow tree planting, plus new semi-improved species-rich grassland planting. These measures would improve habitat connectivity around field margins and enhance the ecological value of field margins.                                                                                                                                                                                                                                    |                  |
| Development Parcel B | This area would include new native hedgerow and semi-improved species-rich grassland planting along with wetland habitat creation. These measures would increase the habitat diversity of this area relative to pre-construction and also improve habitat connectivity via the introduction and strengthening of linear habitat features such as hedgerows.                                                                                         | 6.7.6            |
| Development Parcel C | This area would include coppice woodland and scrub planting, hedgerow planting and infilling, semi-improved species rich grassland planting and a new pond/wetland area. These areas would have limited connectivity with other habitats in the local area due the position within the Existing Drax Power Station Complex. There would be some limited connectivity for mobile species with North Station Wood, located to the north of this area. | 6.7.7            |
| Development Parcel F | This area would include broadleaved tree, hedgerow and reinstated marshy grassland, providing habitat connectivity along the eastern edge of the Existing Drax Power Station Complex.                                                                                                                                                                                                                                                               | 6.7.8            |
| Development Parcel J | The proposed planting in this compensation area includes planting of new treelines, coppice woodland and scrub, and semi-improved species-rich grassland will improve the connectivity of habitats along the Dickon Field Drain and around the location of the proposed AGI.                                                                                                                                                                        | 6.7.9 and 10     |
| Development Parcel K | Proposed woodland coppice and scrub planting would contribute to habitat connectivity and provide additional resources for local bird populations and foraging and commuting bats.                                                                                                                                                                                                                                                                  | 6.7.10           |

Table 4-7 - ExA Written Question – BHR 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.6 | Applicant   | <p><b>Ecological Networks</b></p> <p>Yorkshire Wildlife Trust in its RR state that the methodologies within the Applicant's Biodiversity Net Gain strategy are sound. However, they state</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                               |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>that further information is required to fully assess the implications of the proposals and the likely achievable net gain. Yorkshire Wildlife Trust also states that a 20% net biodiversity gain would be more appropriate for development of this size and scale.</p> <p>i) Explain whether the Applicant can achieve 20% net biodiversity gain from the Proposed Development.</p> |

- 4.1.25 The Applicant does not commit to delivering 20% net biodiversity gain but considers that the updated Biodiversity Net Gain (BNG) Report submitted at Deadline 2 (Applicant's document ref 6.2.9.10 Rev 2) sets out a realistic assessment of the biodiversity units that would be delivered. The Applicant also notes that the proposed target of 20% biodiversity net gain is not standard practice. The level of gain delivered is broadly in line with the new BREEAM ecological assessment method, which states that delivery of 105% - 110% of biodiversity units compared to those lost is net gain, with 110% providing *significant* net gain. BREEAM is a nationally used framework, which the Applicant considers provides a best practice approach. The outcome of the biodiversity net gain calculations is detailed within the revised BNG Report (Applicant's Doc Ref 6.2.9.10 Rev 2) submitted at Deadline 2.
- 4.1.26 The BNG report is conservative in nature as it assumes that all temporary habitat loss will be lost for a total of 7 years. This results in higher 'time to target creation' risk factors for the habitats affected (i.e. the Applicant will need to create a larger area of habitat as a result of the length of time the habitats are lost for than if replacement habitats were created in less than seven years). The timescales for each area of temporary construction have not yet been finalised. It is likely that a proportion of the areas of temporary habitat loss will be lost for a period of less than 7 years.

Table 4-8 - ExA Written Question – BHR 1.7

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.7 | Applicant   | <p><b>Ecological Networks</b></p> <p>Yorkshire Wildlife Trust in its RR state that improvements to ecological networks should be explored, and that the existing habitats conditions should be improved to 'high' rather than retained as 'moderate'. This view is somewhat supported by North Yorkshire County Council in its RR.</p> <p>i) Explain how the outline Landscape and Biodiversity Strategy (LBS) addresses these concerns.</p> |

- 4.1.27 It is important to be realistic during Biodiversity Net Gain (BNG) calculations about what will be delivered by proposed habitat restoration, creation and enhancement. Should opportunities to improve the condition of habitats above the level predicted in the BNG report (Examination Library Ref: APP-116, a revised version of which is submitted at this Deadline 2, Applicant's document ref 6.2.9.10 Rev 002) occur, that would of course be welcome and would generate additional biodiversity units. Given the complexities associated with habitat creation, the Applicant considers that the BNG report sets out a realistic assessment of the biodiversity units that would be delivered, and that targeting moderate habitat condition is appropriate for the majority of habitats. This target does not preclude the potential for habitats conditions to improve above "moderate", but for the purposes of the EIA and BNG report, it is considered more realistic to be conservative and assume a habitat condition of "moderate".
- 4.1.28 The outline Landscape and Biodiversity Strategy has been revised in discussion with NYCC and is resubmitted at Deadline 2 with a number of amendments made, including reference to improving ecological connectivity (please see our answer to BHR1.5). The majority of changes to the outline Landscape and Biodiversity Strategy have however been made in response to the landscape aspects of the Landscape and Biodiversity Strategy, which are not directly relevant to the Condition of habitats.

Table 4-9 - ExA Written Question – BHR 1.8

| ExA Ref | Question to                                                          | Question                                                                                                                                                                           |
|---------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.8 | Natural England, Yorkshire Wildlife Trust and Selby District Council | Provide comment on the adequacy of the outline LBS [APP-135] in respect to mitigation of ecology effects. You may alternatively wish to do so within your Written Representations. |

- 4.1.29 Whilst the question is not directed at the Applicant, the Applicant refers to its response to question BHR1.7.

Table 4-10 - ExA Written Question – BHR 1.9

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.9 | Applicant   | <p><b>European (Natura 2000) sites</b></p> <p>i) Table 17-4 in Chapter 17 of the ES identified at ID 52 (cumulative effects with Thorpe Marsh CCGT) that there may be a potentially significant residual effect (Moderate – Major) on European sites during the operational phase, as a result of nitrogen deposition in combination with emissions from Eggborough CCGT, Knottingley Power Project, Ferrybridge CCGT and Thorpe Marsh CCGT and states that detailed consideration is provided in Chapter 9: Biodiversity. However, elsewhere in ES Chapter 17 it is concluded that there are no significant residual</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>effects identified on biodiversity. Explain where information pertaining to the cumulative impacts on biodiversity with Thorpe Marsh CCGT is located.</p> <p>ii) How have the cumulative impacts with Thorpe Marsh CCGT on biodiversity been assessed?</p> <p>iii) Provide a comprehensive narrative of this assessment, including the relevant findings in Chapter 9: Biodiversity, Chapter 6: Air Quality and the HRA Report</p> |

- 4.1.30 The only potentially significant cumulative impact pathway identified for Thorpe Marsh CCGT with the Proposed Scheme was in relation to air quality impacts. No other conceivable impact pathways were identified given the distance between the Proposed Scheme and Thorpe Marsh CCGT. Emissions from Thorpe Marsh were taken from the planning application documentation for that Scheme Emissions from Thorpe Marsh were taken from the planning application documentation for that Scheme (Thorpe Marsh – Section 36 Variation Environmental Information Report July 2016) and set out in ES Appendix 6.3 (Examination Library ref APP-100), the Biodiversity Chapter of the ES (Examination Library Ref APP-077) and Habitats Regulations Assessment report (Examination Library Ref APP-134).
- 4.1.31 The cumulative scenarios are termed C and D in the Air Quality Chapter (Examination Library ref APP-074) and the sources included in each scenario are set out in Table A6.3-4 of Appendix 6.3 (Examination Library ref APP-100). Scenarios C and D relate to cases in which the Proposed Scheme and Eggborough are both operated without and with NOx Abatement respectively. Thorpe Marsh does not have NOx abatement fitted and, as such, is assumed to operate ‘without SCR’ in both scenarios.
- 4.1.32 The modelled cumulative air quality impacts on ecological receptors are provided in Table 6.23 (Ammonia Concentrations), Table 6.24 (Annual Mean NOx), Table 6.25 (Daily Mean NOx), Table 6.26 (Nitrogen Deposition) and Table 6.27 (Acid Deposition) (of the Air Quality Chapter, Examination Library ref APP-074).
- 4.1.33 The ‘potentially significant residual effect (Moderate – Major) on European sites during the operational phase’ referred to in Question BHR1.9 was included in Table 17-4 in the Cumulative Effects Chapter erroneously (Examination Library Doc Ref: APP-085). This was included in error from the previous cumulative assessment that was completed for the Preliminary Environmental Information Report (Examination Library Ref: APP-137). The assessment in the PEIR was completed prior to dispersion modelling being available, and was therefore necessarily precautionary in the absence of detailed information on the predicted air quality effects of the Proposed Scheme. Instead, the conclusion should have been that no adverse effects on the integrity of European Sites are predicted as a consequence of the effects of the Proposed Scheme operating cumulatively with the effects of Thorpe Marsh CCGT (or any other Plans or Projects).

Table 4-11 - ExA Written Question – BHR 1.10

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.10 | Applicant   | <p><b>European (Natura 2000) sites</b></p> <p>The HRA report briefly describes the approach to the in-combination assessment at Section 3.3. Table 3-1 lists the projects identified as relevant to the in-combination assessment. This table includes a variety of projects, predominantly residential developments; however, it is noted that the only projects discussed in the HRA report are the power stations of Eggborough, Ferrybridge D, Knottingley, and Thorpe Marsh. It is noted that Table 3-1 includes reference to Thorpe Marsh gas pipeline only. It does not refer to Thorpe Marsh Power Station, though Section 6 does state that it has been included in the air quality assessment.</p> <p>Confirm that the assessment in the HRA report has taken into account the Thorpe Marsh Power Station and the Thorpe Marsh gas pipeline.</p> |

- 4.1.34 The Applicant can confirm that the HRA report (Examination Library Ref: APP-134) has taken both Thorpe Marsh CCGT and Thorpe Marsh gas pipeline into account. Reference to just the Thorpe Marsh gas pipeline is an error.

Table 4-12 - ExA Written Question – BHR 1.11

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.11 | Applicant   | <p><b>European (Natura 2000) sites</b></p> <p>Table 17-5 in Chapter 17 of the ES identifies that scheduling deliveries and the use of a Construction Environmental Management Plan (CEMP) would be a mitigation measure used to help minimise potential air quality impacts during construction arising from traffic.</p> <p>i) Provide details on the aforementioned deliveries, and how you anticipate the scheduling of deliveries to be secured.</p> <p>ii) Explain the effects if you are unable to secure scheduled deliveries.</p> |

- 4.1.35 With respect to part (i) of the question, construction traffic will be managed following the Construction Traffic Management Plan (Examination Library ref APP-091, a revised version of which is submitted at this Deadline 2, Applicant's document ref 8.4.6 Rev 002). Section 4.4 of this document proposes a linear profile of arrival and departure of HGVs during the working day from 07.00-19.00. Requirement 17 of the dDCO secures the approval and implementation of the CTMP, in substantial accordance with the Outline CTMP (Examination Library ref APP-091, and which is a certified document as identified in Schedule 15, table 15 of the draft DCO).



- 4.1.36 With respect to part (ii) of the question, given the predicted change in AADT during the peak of construction activities, the level of traffic generation at the Drax Power Station gate does not trigger the DMRB criteria (DMRB Volume 11m Section 3, Part 1, HA207/07 – Air Quality) for defining an affected road for the purpose of air quality assessment. The nearest European Site within 200 m of the trunk road estate is the Humber Estuary, which is located in excess of 5.4 km from the Proposed Scheme. On this basis, there is no reasonable impact pathway by which traffic-related air quality impacts could lead to a perceptible effect on European Sites, including if deliveries are not subject to scheduling controls.

Table 4-13 - ExA Written Question – BHR 1.12

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.12 | Applicant   | <p><b>Zone of Influence</b></p> <p>The study area and Zone of Influence for biodiversity is set out in paragraphs 9.5.7 to 9.5.11 of Chapter 9 of the ES. A study area comprising the site plus a 50m buffer is identified to assess impacts of habitat loss and degradation, and for disturbance of protected/notable species arising from construction activities and operation of the Proposed Development. Paragraph 9.5.9 also identifies a study area of up to 10 km downstream of the Proposed Development for designated sites, habitats and species associated with watercourses.</p> <p>i) Explain how it was determined that a 50m buffer will be adequate to assess the impact zone for habitat loss and degradation arising from construction activities</p> <p>ii) Explain the likely impacts beyond that distance.</p> |

- 4.1.37 With respect to part (i) of the question, mechanisms for disturbance during construction with the greatest zone of influence are in relation to hydrology, air quality (dust) noise and artificial lighting.
- 4.1.38 The Institute of Air Quality Management (IAQM) guidance on the assessment of Construction Dust (ES Document Reference 6.16) states that an assessment will normally be required where there is an ecological receptor within 50 m of the boundary of the site or 50 m of the route used by construction vehicles on the public highway up to 500 m from the site boundary. Outside this buffer, sensitive ecological sites can be scoped out of the assessment of construction dust. This is outlined in Appendix 6.2 of the Air Quality Chapter of the ES (Examination Library Ref: APP-099).
- 4.1.39 The noise chapter of the ES (Examination Library Ref APP-075) sets out the noise modelling completed for ecological receptors, which was then assessed in the ES Biodiversity Chapter (Examination Library Ref: APP-077). This concluded (paragraphs 9.5.10 to 9.5.11) that there would be no significant increases in noise at any Noise Sensitive Receptors (NSR), including ecological NSR, apart from NSR15 located adjacent to the Pipeline Area. NSR15 is located within 50 m of construction activities, other ecological NSR are at or beyond 50 m from the Pipeline Area.

- 4.1.40 The potential impacts of artificial lighting on ecological receptors were considered in Chapter 9 (Biodiversity) of the ES (Examination Library Ref: APP-077). This concluded that no significant effects on ecological receptors would arise due to the use of artificial lighting (e.g. see paragraphs 9.7.69 and 9.7.83), once controlled by the Construction Lighting Strategy. The Applicant considers that the 50 m ZOI is suitable for assessing lighting impacts on this basis.
- 4.1.41 Noise, dust and lighting impacts will also be controlled through the CEMP (Doc ref 6.5, Examination Library Ref: APP-120, a revised version of which (version 002) is submitted at Deadline 2). No other impact types have been identified that would lead to habitat loss and degradation or disturbance of protected/notable species that would arise from construction activities and/or operation of the Proposed Scheme.
- 4.1.42 In relation to part (ii) of the question, beyond 50 m, impacts as described above are likely to result in negligible effects on ecological receptors that are effectively imperceptible. As highlighted in Question BHR1.12, consideration was given to potential hydrological effects up to 10 km downstream of the Proposed Scheme.

Table 4-14 - ExA Written Question – BHR 1.13

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.13 | Applicant   | <p><b>Habitat clearance during construction</b></p> <p>Paragraph 9.5.4 of Chapter 9 of the ES makes reference to the construction programme and assumptions about when habitat clearance would have occurred in the programme. It states that <i>“the installation of the Gas Pipeline will take place primarily between the months of April and September inclusive, avoiding the winter months.”</i></p> <p>i) Confirm if construction activities for the gas pipeline will be limited to the period April and September.</p> <p>ii) Confirm if this restriction is required in order to reach a conclusion of no significant effects on ecological receptors.</p> <p>iii) Demonstrate how this restriction on the timing of construction of the gas pipeline has been secured in dDCO.</p> |

- 4.1.43 With respect to part (i) of the question, construction is primarily likely to take place between April and September to take advantage of more favourable ground conditions. However, it is possible that activities will take place outside of this period. Should water voles need to be displaced from their burrows due to timing of construction, this must take place within late winter/early spring (Late February to Late April). Vegetation clearance should be carried out during the winter months (October – February) to minimise risk of impacting on nesting birds. If mitigation is delivered at the appropriate time (some vegetation clearance may need to be cleared up to 12 months in advance of construction) installation can likely be managed at any time. This is set out in Appendix 3 of the outline Landscape and Biodiversity Strategy, an updated version of which (Version 002) is submitted by The Applicant at Deadline 2.

- 4.1.44 With respect to part (ii) of the question, a restriction on when habitat clearance and construction of the Gas Pipeline is carried out is not considered necessary to avoid significant effects on ecological receptors. Regardless of when it takes place, installation of the Gas Pipeline will have short term and temporary impacts during construction. The habitats within the Pipeline Area are also predominantly arable farmland, of limited ecological interest. The mitigation measures proposed in relation to the intended installation period between April and September could also be employed in advance of and during winter installation, if necessary. This is set out in Appendix 3 of the outline Landscape and Biodiversity Strategy, an updated version of which (Version 002) is submitted by The Applicant at Deadline 2.
- 4.1.45 With respect to part (iii) of the question, no restriction on timing is required in the dDCO. The mitigation measures referred to above, which make installation of the Gas Pipeline acceptable regardless of when it is carried out, are secured by Requirement 7 which secures the approval and implementation of the detailed Landscape and Biodiversity Strategy (which will be prepared in substantial accordance with the outline Landscape and Biodiversity Strategy, which is a certified document as identified in Schedule 15, table 15 of the draft DCO).

Table 4-15 - ExA Written Question – BHR 1.14

| ExA Ref  | Question to                             | Question                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.14 | Natural England, The Environment Agency | <p><b>Scope</b></p> <p>The ExA note that NE and the Environment Agency have not raised any concerns regarding the scope in their RRs [RR-212 and RR-292], respectively. The ES makes reference to agreements with NE on specific matters.</p> <p>i) Confirm that all agreements referred to in the ES are satisfactory.</p> <p>ii) Confirm details and provide evidence of such agreements.</p> |

- 4.1.46 Appendix BHR-B includes correspondence from NE confirming their previous agreement to the scope of ecological surveys.

Table 4-16 - ExA Written Question – BHR 1.15

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.15 | Applicant   | <p><b>Consents and Licences</b></p> <p>While it may be that no European Protected Species (EPS) licences are currently required, as stated in Table 9-2 of Chapter 9 of the ES, a mitigation licence from NE in respect of badgers will be required. This requirement has been identified in Document 5.8 'Other Consents and Licences'. Reference is made in Tables 9- 2 and 9-3 of Chapter 9 of the</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>ES to agreeing a 'shadow' licence approach to licensing (where required). Paragraphs 9.8.15 – 9.8.19 of Chapter 9 of the ES state that the closure of one or more badger setts is anticipated.</p> <p>i) Confirm the accuracy of the reference to an 'EPS licence for badgers'.</p> <p>ii) Explain whether a 'shadow' licence approach has been agreed and prepared.</p> <p>iii) State whether a letter of no impediment to obtaining a licence in respect of badgers affected by the Proposed Development will be submitted into the Examination.</p> <p>iv) Provide evidence to show how the provision of artificial badger sett(s) will be secured.</p> |

- 4.1.47 With respect to part (i) of the question, the reference to 'EPS licence for badgers' was incorrect. This was intended to refer to the licensing regime under the Protection of Badgers Act 1992, operated in England by Natural England. This error has been corrected in the revised Other Consents and Licences document submitted for this Deadline 2 (Applicant's document ref 5.8 Rev 002).
- 4.1.48 With respect to part (ii) of the question, agreement in principle to the proposed mitigation measures has been received from Natural England (NE) as per Sections 3.9.2 to 3.9.4 of the SoCG between the Applicant and NE (Examination Library Ref: REP1-004) A shadow licence application has not been prepared at this time. The Applicant does not intend to seek a shadow licence during the DCO Examination Process, due to the differing protection regime applied to badgers compared to EPS. The Applicant is in the course of confirming agreement to this approach with NE. It is the intention of the Applicant that this be recorded in an updated version of the SoCG with NE, to be submitted at a future deadline.
- 4.1.49 With respect to part (iii) of the question, paragraph 3.9.4 of the Statement of Common Ground states that "*Natural England confirms and the Applicant agrees that there is no impediment to Natural England granting a licence under the Protection of Badgers Act (1992), in relation to the Proposed Scheme.*"
- 4.1.50 With respect to part (iv) of the question, Natural England would only grant a licence under the Protection of Badgers Act 1992 once it was satisfied with the mitigation proposals accompanying any licence application. This would include the artificial sett(s). Accordingly there is no need for the dDCO to duplicate the regime under the Protection of Badgers Act 1992. It should also be noted that at paragraph 3.9.3 of the Statement of Common Ground with Natural England states that "*[i]t is agreed (subject to detailed design), that the proposed location and design principles of any artificial sett(s) proposed provide suitable compensation for the predicted loss of a main sett, as set out in Section 4.2 of Appendix 9.4.*"

Table 4-17 - ExA Written Question – BHR 1.16

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                 |
|----------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.16 | Applicant   | <p><b>Post construction monitoring</b></p> <p>Chapter 9 of the ES identifies that post construction monitoring is proposed for the following: bats, otters, water voles, breeding and wintering birds and reptiles.</p> <p>Explain how post construction monitoring will be secured.</p> |

- 4.1.51 Post construction monitoring surveys to include bats, otters, water voles, breeding and wintering birds and reptiles are secured by Requirement 7 to the draft DCO (version 2, submitted at Deadline 2, Applicant's reference 3.1).
- 4.1.52 Requirements 7(1) and 7(2) ensure that no part of the identified authorised works can commence without submission and approval (following consultation with North Yorkshire County Council) of the final form Landscape and Biodiversity Strategies (a Strategy is to be submitted prior to each of Stage 1 and Stage 2). The final Strategies must be substantially in accordance with the Outline Landscape and Biodiversity Strategy and chapter 9 (biodiversity) of the Environmental Statement, both of which will be certified documents as identified in Schedule 15, table 15 of the draft DCO. At Deadline 2, the Applicant has submitted a revised Outline Landscape and Biodiversity Strategy (Applicant's reference 6.7 Rev 2).
- 4.1.53 Requirement 7(3) sets out the details that must be included in the Landscape and Biodiversity Strategies to be submitted and approved under Requirement 7(1) and 7(2), including at (f):
- "The ecological surveys required to be carried out prior to commencement of a numbered work, or following completion of a numbered work in order to monitor the effect of the ecological mitigation measures."*
- 4.1.54 Chapter 9 of the ES sets out the post-construction monitoring and surveys required for bats (paragraphs 9.8.10-11), otters (paragraphs 9.8.24-25), water vole (paragraphs 9.8.32-33), breeding and wintering birds (paragraphs 9.8.38-39), and reptiles (paragraphs 9.8.48-49). In addition, the Outline Landscape and Biodiversity Strategy (Deadline 2 submission (Applicant's document ref 6.7 Rev 2)) includes Table 3-1 - Strategy Mitigation Table (of significant adverse effects and proposed mitigation measures), which also sets out, in the 'Duration of monitoring and responsibilities' column in the Biodiversity section of the table, the various surveys and walkovers for breeding and wintering birds, reptiles, water vole, otters and bats to be undertaken in relation to newly created and enhanced habitats and landscape proposals at intervals post construction.

- 4.1.55 Following the submission of the ES, further reptile surveys were carried out and reported in the Supplemental Environmental Information – Reptile Survey Rev 001 (REP1-011). The reptile survey programme comprised seven survey visits to the Site. Each visit incorporated two survey elements which included lifting artificial reptile refugia to record presence or likely absence of reptile underneath and a visual search of habitats and natural refugia. The surveys were carried out between April and May 2018. No reptiles or evidence of reptiles was recorded on the Site; therefore, reptiles can be considered likely to be absent from the Site, consequently there are no known legal or planning constraints in relation to reptiles and no further surveys are considered necessary, just post construction monitoring.
- 4.1.56 The monitoring is therefore secured by means of the draft DCO requirement and referenced certified documents (the Environmental Statement and Outline Landscape and Biodiversity Strategy).

Table 4-18 - ExA Written Question – BHR 1.17

| ExA Ref  | Question to            | Question                                                                                                                                                                                                                                                                                                                                        |
|----------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.17 | Selby District Council | <p><b>Post Construction Monitoring</b></p> <p>Your RR [RR-315] states that comments will be provided on the impacts upon designated sites, natural habitats and species; the nature of biodiversity off- setting proposals and mitigation; monitoring and long-term management.</p> <p>Expand on your areas of concern and provide details.</p> |

- 4.1.57 The applicant has engaged with NYCC Ecology Service on these matters and status of these discussions is recorded in the Statement of Common Ground between Drax Power Limited and North Yorkshire County Council and Selby District Council (Examination Library Ref: REP1-006), Section 3.15. This highlights general agreement on methodology, significance criteria, baseline data collection, identification of receptors, assessment of likely significant effects and biodiversity impact avoidance, mitigation and enhancement measures. There remain points of discussion on the Outline Landscape and Biodiversity Strategy; the Applicant is continuing its discussions with NYCC and SDC in respect of the revised Outline Landscape and Biodiversity Strategy.

Table 4-19 - ExA Written Question – BHR 1.18

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.18 | Applicant   | <p><b>HRA Report –qualifying features</b></p> <p>There are a number of discrepancies in the Applicant’s HRA report with regards to the qualifying features of the European sites listed in Tables 2-1 to 2-9 and presented in Appendix 1: HRA Screening Matrices. Paragraph 2.2.8 of the HRA report states that the screening assessment is summarised in Tables 2-1 to 2-8 in the main body of the HRA report;</p> |



| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>however, it is noted that one European site is missing from these summary tables, the Lower Derwent Valley Ramsar, and a number of qualifying features for several of the European sites are also missing from the summary tables and/or appendices.</p> <p>For instance, HRA Screening Matrix 4: Lower Derwent Valley SPA at Appendix 1 refers to breeding corncrake and spotted crake as qualifying features; however, summary Table 2-2 of the HRA report refers only to breeding shoveler. The Natura 2000 Standard Data form for the Lower Derwent Valley SPA only identifies shoveler as a breeding qualifying feature. It is noted that the Humber Estuary Ramsar is not listed separately but is included with the Humber Estuary SPA in Table 2-5. River lamprey is missing as a qualifying feature for the River Derwent SAC in Table 2-3; however, it has been included in the screening matrix at Appendix 1. It also appears that the HRA report has not identified the same qualifying features for the Humber Estuary SPA as the Natura 2000 Standard Data form.</p> <p>i) Provide revised matrices and summary tables 2-2 to 2-9 and in Word format.</p> <p>ii) Explain the extent to which the conclusions in the HRA Report would be affected by any amendments made.</p> |

- 4.1.58 In response to part (i) of this question, the Applicant has revised the matrices and summary tables to respond to the points set out in the question (see Appendix BHR-C of this document). The Applicant intends to submit the updated HRA Report (Applicants document reference 6.6) shortly.
- 4.1.59 In response to part (ii) of the question, the conclusions in the HRA report are not affected by the amendments. The corrections to Tables 2-1 to 2-10 and the revised matrices do not introduce any new impact pathways by which the qualifying interests could be affected. The additional qualifying interests are not considered to be any more susceptible to the impacts arising from the Proposed Scheme than those previously identified. The previously reported conclusions regarding potential for LSE and adverse effects on the integrity of European Sites are not altered by these amendments; no adverse effects on the integrity of any European Sites are predicted to occur.

Table 4-20 - ExA Written Question – BHR 1.19

| ExA Ref  | Question to | Question                                                                                                                                                                               |
|----------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.19 | Applicant   | <p><b>Otters and fish species</b></p> <p>Paragraph 5.3.16 in Section 5 in the HRA report relies on mitigation measures to avoid adverse effects on the integrity of European sites</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>supporting otter, river lamprey and sea lamprey. The measures are stated to be delivered through the outline LBS, which is secured through Requirement 8 of the dDCO. The majority of measures set out in 5.3.16 are not included within the outline LBS as provided with the application.</p> <p>Measures are also stated in Section 5 in the HRA report to be secured through the CEMP, which is secured through Requirement 16 of the dDCO. Paragraph 5.3.18 of the HRA report states that the CEMP will contain detailed method statements to ensure the protection of otters and fish, yet the CEMP contains no reference to fish.</p> <p>i) Explain why the avoidance and mitigation measures as set out in paragraph 5.3.16 of the HRA report are not included in full within the outline LBS.</p> <p>ii) Confirm that measures to control effects on fish species (including eels) form part of the CEMP, or provide further detail.</p> |

- 4.1.60 With respect to part (i) of the question, a number of the measures included within paragraph 5.3.16 of the HRA (Examination Library Ref APP-134) were included within paragraph 1.6.23 of the outline Landscape and Biodiversity Strategy (Examination Library Ref APP-135). As the ExA has highlighted in BHR1.19, not all of the measures in the HRA were included in the outline Landscape and Biodiversity Strategy. This has been updated for the revised version of the outline Landscape and Biodiversity Strategy submitted at this Deadline 2 (Applicant's document ref 6.7 Rev 002) within table 3-1 and Appendix 3.
- 4.1.61 Mitigation measures for otter and fish will be refined to reflect detailed construction proposals and documented in the detailed Landscape and Biodiversity Strategy(ies), to be produced in substantial accordance with the outline Landscape and Biodiversity Strategy (which is a certified document as identified in Schedule 15, table 15 of the draft DCO) pursuant to Requirement 7 of the draft DCO (Examination Library Ref: AS-012, a revised version of which is submitted at this Deadline 2, Applicant's document ref 6.7).
- 4.1.62 With respect to part (ii) of the question, the Applicant can confirm that the outline CEMP deals with hydrological impacts on the Proposed Scheme, which is the primary route by which potential impacts on fish species (including eel) were considered could occur. This is detailed in the CEMP (Examination Library Ref: APP-133), with production of a detailed construction-phase CEMP (in substantial accordance with the outline CEMP, which is a certified document as identified in Schedule 15, table 15 of the draft DCO) secured by Requirement 16 of the draft DCO (Examination Library Ref: AS-012, a revised version of which is submitted at this Deadline 2, Applicant's document ref 6.5).

Table 4-21 - ExA Written Question – BHR 1.20

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BHR 1.20 | Applicant   | <p><b>Otters and fish species</b></p> <p>Paragraph 5.3.22 of the HRA report states that “<i>As a result of a negative assessment, it is not considered that the Proposed Scheme will act in-combination with those projects and plans listed in Table 2.1 above.</i>”</p> <p>i) Confirm if you were intending to refer to Table 3-1: Screening of Other Projects and Plans for Potential In-Combination Effects and not Table 2-1 in Paragraph 5.3.22?</p> <p>ii) Given that Chapter 17 of the ES states there may be a moderate/major impact on European sites from in-combination effects with Thorpe Marsh CCGT, Eggborough CCGT, Knottingley CCGT and Ferrybridge D CCGT; explain and justify why the Proposed Development is not considered to act in-combination with the plans and projects listed in Table 3-1.</p> |

- 4.1.63 In response to part (i) of the question, the Applicant can confirm that the intention was to refer to Table 3-1 in paragraph 5.3.22 of the HRA report. This has been updated in the next iteration of the HRA Report.
- 4.1.64 In response to part (ii) of the question, paragraph 5.3.22 referred to in-combination effects in relation to functionally linked habitats and disturbance, habitat loss and habitat modification (see paragraph 5.1.1 of the HRA Report (Examination Library ref APP-134)). These impacts were not considered to act in-combination with other plans and projects, as identified in paragraph 5.3.22.
- 4.1.65 In-combination effects with the projects listed in the question in relation to air quality impacts are considered in section 6 of the HRA Report. These projects were considered to have the potential to act in-combination with the Proposed Scheme in relation to air quality impacts only. Following the assessment of all in-combination impacts, it has been concluded that there would be no adverse effect on the integrity of any European Sites in-combination with other plans and projects.
- 4.1.66 Regarding in-combination effects of these developments, please also refer to the Applicant’s response to question BHR 1.9.

## 5 COMPULSORY ACQUISITION

Table 5-1 - ExA Written Question – CA 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA 1.1  | Applicant   | <p><b>Update Table</b></p> <p>At the Preliminary Meeting, it was stated that an update table will be regularly provided on the progress of negotiations for Compulsory Acquisition (CA) of the Freehold of land and of new rights over existing land.</p> <p>Provide this table, and in particular advise the ExA on the progress of negotiations between the Applicant and the following, and when it expects agreements to be concluded:</p> <ul style="list-style-type: none"> <li>○ Mr Richard Watson and Mr David Watson;</li> <li>○ Ms Katie Elizabeth Bingley and Mr John Neville Stones;</li> <li>○ Ms Gwendoline Cooper and Mr Paul Cooper;</li> <li>○ Mr John Holgreaves and Ms Yvonne Holgreaves; and</li> <li>○ T.W Falkingham Limited.</li> </ul> |

5.1.1 An updated schedule of negotiations has been submitted at this Deadline 2 (Applicant's document ref 8.5.4).

5.1.2 Progress on negotiations of the Affected Persons referred to in the question is as follows:

Table 5-2 - Progress on Negotiations of the Affected Persons

| Landowner                                                            | Plots         | Progress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| David Watson and Richard Watson (as partners in I.D. Watson Farmers) | 8, 10, 13, 15 | <p>The Applicant has been in active discussions with Mr Richard Watson (copies of correspondence have been sent to Mr David Watson, however, negotiations have been handled by Mr Richard Watson) about the permanent acquisition of this land since March 2018. Most recently the parties met to discuss issues related to the proposed acquisition on 18 October 2018. Whilst agreement has not yet been reached, discussions are continuing.</p> <p>It is noted that Mr Watson is in support of the Proposed Scheme, as he confirmed to the Examination Authority at the Open Floor Hearing on 4 October 2018.</p> |

| Landowner                                                                 | Plots                                                                                                                                     | Progress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                           |                                                                                                                                           | Summary: Heads of Terms for plots under discussion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Kate Bingley                                                              | 9, 9a, 9b, 11, 12, 18, 25, 26, 27, 28                                                                                                     | <p>The Applicant has been in discussions with Ms Bingley's agent, Mr Townend. Heads of Terms signed by Ms Bingley recording agreement between the parties were received by the Applicant's agent on 8 October 2018. The Applicant's solicitors have drafted the relevant contractual documents to document the agreement and provided these to Ms Bingley's solicitors also on 8 October 2018. The agreements are expected to be concluded prior to the end of the Examination.</p> <p>Summary: Heads of Terms for plots signed.</p>                                                                  |
| John Neville Stones (trading as R. Stones & Son)                          | 19, 21, 24, 27, 32, 33, 35, 37, 41, 42, 43, 44, 45 <sup>3</sup>                                                                           | <p>The Applicant has been in discussions with Mr Stones' agent, Mr Townend. Heads of Terms signed by Mr Stones recording agreement between the parties were received by the Applicant's agent on 8 October 2018. The Applicant's solicitors have drafted the relevant contractual documents to document the agreement and provided these to Mr Stones' solicitors also on 8 October 2018. The agreements are expected to be concluded prior to the end of the Examination.</p> <p>Summary: Heads of Terms for plots signed.</p>                                                                       |
| Paul Cooper<br>Gwendoline Cooper<br>(as partners in<br>E.P.Cooper & Sons) | 9, 9b, 11, 12, 19, 21, 24, 25, 26, 27, 28, 32, 33, 35, 41, 42, 45, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67 | <p>The Applicant has been in discussions with Mr and Mrs Cooper. Most recently, heads of terms recording the agreement between the parties were submitted to Mr and Mrs Cooper on 4 October 2018. Following comments from Mr Cooper on 12 October, further revised heads of terms were issued on 16 October 2018. Although agreement to the heads of terms was confirmed on 17 October 2018, some further queries on the terms were raised by the Coopers on 30 October 2018. The Applicant is responding to the further enquiries and it is expected that heads of terms will be agreed shortly.</p> |

<sup>3</sup> Note, the title to plots 9, 9a, 9b, 11, 12, 18, 25, 26, 27, 28 has now transferred to Ms Bingley.

| Landowner                | Plots                  | Progress                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                        | <p>The Applicant's solicitors have drafted the relevant contractual documents to document the expected agreement and provided these to Mr Cooper's solicitors on 8 October 2018. The agreements are expected to be concluded prior to the end of the Examination.</p> <p>Summary: Heads of Terms for the Plots close to agreed, pending resolution of some outstanding points.</p>                                                                                                                                                                                                   |
| John & Yvonne Holgreaves | 37, 39, 40             | <p>The Applicant has been in discussions with Mr &amp; Mrs Holgreaves and their solicitor. Heads of terms recording agreement between the parties were signed by Mr and Mrs Holgreaves on 3 October 2018.</p> <p>The Applicant's solicitors have drafted the relevant contractual documents to document the agreement and provided these to Mr &amp; Mrs Holgreaves' solicitors on 8 October 2018. The agreements are expected to be concluded prior to the end of the Examination.</p> <p>Summary: Heads of Terms for plots signed.</p>                                             |
| T.W. Falkingham Limited  | 46, 47, 48, 49, 51, 52 | <p>The Applicant has been in discussions with Mr Townend, agent for T.W. Falkingham Limited. Heads of terms signed by T.W. Falkingham Limited recording agreement between the parties were received by the Applicant's agent on 8 October 2018.</p> <p>The Applicant's solicitors have drafted the relevant contractual documents to document the agreement and provided these to T.W. Falkingham Limited's solicitors also on 8 October 2018. The agreements are expected to be concluded prior to the end of the Examination.</p> <p>Summary: Heads of Terms for plots signed.</p> |
| Bryan Major Wild         | 64                     | <p>The Applicant has been in discussions with Mr Wild via his agent, Mr Townend. Heads of terms signed by Mr Wild recording agreement between the parties were received by the Applicant's agent on 8 October 2018.</p>                                                                                                                                                                                                                                                                                                                                                              |



| Landowner | Plots | Progress                                                                                                                                                                                                                                                                                                         |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |       | <p>The Applicant's solicitors have drafted the relevant contractual documents to document the agreement and provided these to Mr Wild's solicitors also on 8 October 2018. The agreements are expected to be concluded prior to the end of the Examination.</p> <p>Summary: Heads of Terms for plots signed.</p> |

- 5.1.3 Whilst agreement in principle has been reached with most counterparties, the Applicant will retain the powers to compulsory acquire the necessary land and rights within the draft DCO even if the contractual documentation are signed. This is accepted practice to protect an applicant in the event of a breach of contract or unforeseen/unknown circumstances that might arise at any stage in the project delivery process and ensure the nationally significant infrastructure project can be delivered and mitigated as proposed.

Table 5-3 - ExA Written Question – CA 1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA 1.2  | Applicant   | <p><b>Protective Provisions</b></p> <p>The Book of Reference includes a number of Statutory Undertakers with interests in land.</p> <p>i) Provide a progress report on negotiations with each of the Statutory Undertakers listed in the Book of Reference, with an estimate of the timescale for securing agreement from them.</p> <p>ii) State whether there are any envisaged impediments to the securing of such agreements.</p> <p>iii) State whether any additional Statutory Undertakers have been identified since the submission of the Book of Reference as an application document.</p> |

- 5.1.4 With respect to part (i) of the question, the Applicant has been actively engaging with those Statutory Undertakers listed in the Book of Reference (Examination Library ref AS-122). An update on those negotiations is set out below:-

- 5.1.5 **Yorkshire Water Limited (“Yorkshire Water”)**: The Applicant wrote to Yorkshire Water on 11 May 2018 enclosing a copy of the Protective Provisions included at Part 1 of Schedule 12 of the draft DCO (Examination Library ref AS-012) and requested comments on the same. Yorkshire Water and the Applicant have been in discussions since that time. Yorkshire Water confirmed on 15 October 2018 that the Protective Provisions included at Part 1 of Schedule 12 of the draft DCO are acceptable. The ExA is referred to the written confirmation provided by Yorkshire Water at Appendix CA- A of this document. No further matters remain to be discussed with Yorkshire Water.
- 5.1.6 **National Grid Electricity Transmission plc and National Grid Gas plc (together “National Grid”)**: The Applicant wrote to National Grid on 11 May 2018 enclosing a copy of the Protective Provisions included at Part 1 of Schedule 12 of the draft DCO (Examination Library ref AS-012) and requesting comments. National Grid and the Applicant have been in discussions since that time. On 24 August 2018, National Grid provided the Applicant with a copy of their standard form protective provisions, stating that their draft reflected that National Grid is acting in its capacity of both electrical undertaker and gas undertaker. The Applicant is in the process of reviewing the draft protective provisions. In addition, the Applicant is reviewing the various agreements that already exist between the Applicant and National Grid Electricity covering National Grid's substation that lies within the Existing Drax Power Station Complex. The Applicant sees no impediment to reaching agreement with both arms of National Grid during the course of the Examination.
- 5.1.7 **Vodafone Limited (“Vodafone”)**: The Applicant wrote to Vodafone on 11 May 2018 enclosing a copy of the Protective Provisions. On 13 June 2018, the Applicant wrote to Vodafone again enclosing a slightly revised draft set of Protective Provisions that were included at Part 2 of Schedule 12 of the draft DCO (Examination Library ref AS-012). Whilst one contact at Vodafone confirmed on the 15 August 2018 that their apparatus is unaffected by the Proposed Scheme, on 8 October 2018 the Applicant received further correspondence from a different contact at Vodafone indicating that they considered that Work No.8B in Schedule 1 of the draft DCO affected their apparatus. On 18 October 2018 the Applicant wrote to Vodafone setting out its position that Vodafone's apparatus is unlikely to be affected by Work No.8B and resending the Protective Provisions (as provided to Vodafone on 13 June 2018). The Applicant awaits a substantive response from Vodafone and will continue to liaise with Vodafone to reach agreement before the end of the Examination. It is also noted that Vodafone has not submitted a relevant representation. It is noted that section 127 of the Planning Act 2008 does not apply to Vodafone.

- 5.1.8 **Northern Powergrid Limited and Northern Powergrid (Yorkshire) plc (together “Northern Powergrid”)**: The Applicant wrote to Northern Powergrid (separately to the two companies) on 15 May 2018 enclosing a copy of the Protective Provisions included at Part 1 of Schedule 12 of the draft DCO (Examination Library ref AS-012) and requested comments on the same. The Applicant has chased Northern Powergrid for a response on a number of occasions since then and spoke to Northern Powergrid’s engineers who confirmed they could assess their apparatus within the Application red line boundary but could not comment on the protective provisions. On 29 August 2018, the Applicant received confirmation of Northern Powergrid’s solicitor dealing with the Protective Provisions. To date, no substantive comments on the Protective Provisions have been provided and Northern Powergrid has not submitted a relevant representation. The Applicant will continue to liaise with Northern Powergrid (in respect of both companies) in relation to the Protective Provisions to seek confirmed agreement.
- 5.1.9 In response to part (ii) of the question, the Applicant will continue to engage with the relevant Statutory Undertakers with a view to reaching agreement as soon as possible. Whilst Protective Provisions are not agreed with some of the identified undertakers (as noted above), that is not uncommon at this stage, and the Applicant does not envisage any impediment to reaching agreement or a sound unopposed precedented position. The Applicant will continue to seek to engage with all land interests and in particular those Statutory Undertakers who have not yet provided substantive comments or directly responded.
- 5.1.10 With respect to part (iii) of the question, following the submission of the Book of Reference with the Application, no additional Statutory Undertakers have been identified. The Applicant continues to make diligent enquiries of any potential, additional Statutory Undertakers who have an interest in the land.
- 5.1.11 In respect of operators under the communications code, British Telecommunications Plc (“BT”) was not listed in the Book of Reference submitted with the Application, or the updated Book of Reference (Examination Library ref AS-122) as the Applicant determined after diligent enquiry that BT did not have an interest in the land subject to the Application. Having continued with enquiries and carried out even more precautionary and detailed investigations, it appears that some of the works proposed to be carried out are in proximity to BT’s cables. Therefore, on a precautionary basis the Applicant has contacted BT in relation to the Application on 25 September 2018 enclosing a copy of the Protective Provisions included at Part 1 of Schedule 12 of the draft DCO (Examination Library ref AS-012) and requested comments on the same. The Applicant followed up with BT’s engineers on 15 October 2018, and received confirmation on 17 October 2018 (from Openreach, a wholly-owned subsidiary and functional division of British Telecommunications plc) that the Protective Provisions included at Part 2 of Schedule 12 of the draft DCO are acceptable. The ExA is referred to the written confirmation provided by Openreach at Appendix CA- B of this document. No further matters remain to be discussed with BT or Openreach.

Table 5-4 - ExA Written Question – CA 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                          |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA 1.3  | Applicant   | <p><b>Category 1 Persons</b></p> <p>There is no mention of Kate Elizabeth Bingley within the Statement of Reasons with John Neville Stones on page 60, despite being listed as a Category 1 person in respect of Plots 9, 9B, 12, 25, and 27 in the Book of Reference. Explain this omission.</p> |

- 5.1.12 Ms Bingley did not have an interest in the Order land at the time of submission of the DCO Application on 29 May 2018. The Applicant became aware of Ms Bingley's interest in the Order land shortly before 30 August 2018, towards the end of the period for relevant representations to be received pursuant to section 56 of the Planning Act 2008. On 30 August 2018, under cover of letter providing the Planning Inspectorate with certificates of compliance in relation to the section 56 process, the Applicant provided a revised Book of Reference (Examination Library ref AS-122), with some changes since the previous Book of Reference was submitted. In the letter, the Applicant advised as follows with respect to Ms Bingley:

*"Since the section 56 consultation has been carried out, we have been advised by Mr John Stones that part of his freehold land that is within the Order land has recently been "gifted" to his daughter, Ms Kate Bingley, with the "gift" transfer having been completed on 16.08.2018. We understand that the land within the Order land that has been "gifted" comprises plots 9, 9a, 9b, 11, 12, 18, 25, 26, 27 and 28.*

*As we have only recently been made aware of this "gift", with the date of the "gift" transfer (16.08.2018) only having been confirmed to us on 29.08.18, Ms Bingley was not included in the section 56 consultation (although her father, Mr Stones, was consulted both at the section 42 stage pre-submission and now most recently under section 56). However, as we have been informed of this "gift", we have included Ms Bingley in the Book of Reference for plots 9, 9a, 9b, 11, 12, 18, 25, 26, 27 and 28 alongside her father. As we have not seen the transfer for the "gift", we consider it prudent to keep Mr Stones in the Book of Reference until such time that we have seen the transfer and legal title has transferred. We therefore confirm that we are treating Ms Bingley as an "affected person" under section 59(4) of the Planning Act 2008."*

- 5.1.13 The Applicant also highlighted this change to the Book of Reference in the Schedule of Changes submitted alongside it (Examination Library ref AS-121), explaining all changes since the previous version.

- 5.1.14 The Applicant will provide an updated Statement of Reasons to include Kate Elizabeth Bingley. Should the Additional Land Application that is submitted at Deadline 2 be accepted by the ExA, then the Applicant will submit an updated Statement of Reasons that includes both Ms Bingley and the information contained in the Supplemental Statement of Reasons that accompanies the additional land application.

Table 5-5 - ExA Written Question – CA 1.4

| ExA Ref | Question to | Question                                                                                                                                                                   |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA 1.4  | Applicant   | <p><b>Category 1 Persons</b></p> <p>Confirm that Mr Martin Nunns will no longer be a Category 1 party, and thus will not be an Affected Person after 30 November 2018.</p> |

- 5.1.15 Mr Nunns has the benefit of a grazing licence which expires on 30 November 2018.
- 5.1.16 Drax Power Limited is currently in discussions with Mr Nunns regarding an extension to this licence. Accordingly, Mr Nunns may continue to be a Category 1 party after 30 November 2018 and is therefore being treated by the Applicant as though he will remain as a Category 1 party.
- 5.1.17 If the licence is extended, it is intended to be on a short-term basis and be terminable by Drax Power Limited on short notice.

Table 5-6 – ExA Written Question – CA 1.5

| ExA Ref | Question to | Question                                                                                                                                                                     |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA 1.5  | Applicant   | <p><b>Connection Agreements</b></p> <p>Update the position in respect to connections to National Grid's electricity and gas infrastructure and how this will be secured.</p> |

- 5.1.18 With regard to electricity, an agreement was entered into with National Grid Electricity Transmission plc (NGET) on 12 July 2018 to vary the existing Bilateral Connection Agreement for Unit X (in order to increase the transmission entry capacity to 5031 Megawatts (mW) from 1 April 2023). A further application (modification application) will be completed for Unit Y when Drax takes the final investment decision for Unit Y.
- 5.1.19 With regard to gas, National Grid Gas plc (NGG) has advised that there is capacity available for both Units X and Y. A Planning and Advanced Reservation of Capacity Agreement (PARCA) has been completed and approved by National Grid for capacity for Unit X on 12 October 2018. The PARCA for Unit Y PARCA would follow closer to when Unit Y is proposed to be constructed.

- 5.1.20 With regard to a gas connection agreement to the National Transmission System, NGG has accepted an application made by Drax on 01 March 2018. A connection offer is expected to be made by 01 December 2018 according to the NGG connection acceptance letter.
- 5.1.21 It is noted that NGG visited the proposed connection point to Feeder 29 on Wednesday 08 August 2018, and no concerns were raised regarding the connection point as contained in the Proposed Scheme. Indeed, the connection point, the Above Ground Installation, has been developed and designed in conjunction with NGG.
- 5.1.22 An updated Other Consents and Licences document (now Rev 002) has been submitted for Deadline 2, providing updates on the above consents and licences processes.

Table 5-7 – ExA Written Question – CA 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CA 1.6  | Applicant   | <p><b>Availability of Funding</b></p> <p>The Applicant is reminded that the Department for Communities and Local Government (as it was then) Guidance related to procedures for CA (September 2013) states that:</p> <p><i>“Applicants should be able to demonstrate that adequate funding is likely to be available to enable the compulsory acquisition within the statutory period following the order being made, and that the resource implications of a possible acquisition resulting from a blight notice have been taken account of.”</i></p> <p>i) The ExA is not clear whether the Funding Statement identifies the CA costs separately from the project costs or explains how the figure for CA costs was arrived at.</p> <p>ii) Clarify the anticipated cost of CA, how this figure was arrived at, and how these costs are going to be met.</p> |

- 5.1.23 Drax has submitted an updated Funding Statement (now Rev 002) at Deadline 2, which updates the anticipated spend for the Proposed Scheme. This updated Funding Statement includes a separate figure for compulsory acquisition costs at £400,000.
- 5.1.24 This figure was arrived at through the independent valuation of professional land agents, Lambert Smith Hampton, taking into account the following factors –
- Land for acquisition – calculated on per acre rates which have been set depending on quality and use of land (e.g. a different rate was set for Grade 2 land compared to Grade 1 land);
  - Land for easements – again, calculated on per acre rates which have been set depending on the quality and use of land. The Applicant has made assumptions based on the Gas Pipeline length, a 15 m permanent easement and a 30 m working width;



- Removal of tenants – using certain assumptions about the tenant's personal circumstances, compensation was based on value of tenants' interest, tenant right, and required statutory payments.

- 5.1.25 In addition, estimated amounts were calculated for drainage, crop loss and professional fees (calculated by Ryde Scale Table E).
- 5.1.26 Should the Applicant engage the compulsory acquisition powers in the DCO, compensation would be funded through of the Applicant's cash reserves, with the cost of the wider project being funded through a combination of cash reserves and debt finance. However, the Applicant is pursuing commercial agreements to acquire land, and the Applicant expects to fund all of these commitments through existing cash reserves.
- 5.1.27 As detailed in the audited accounts for Drax Group PLC (the ultimate holding company for the Drax group of companies, of which Drax Power Limited (the Applicant) is part), at 31 December 2017 Drax Group PLC's cash reserves totalled £222.3m, with liquidity in excess of £400m, and cash generation from operations in the year to 31 December 2017 totalled £375.7m. Drax expects to be in a similar position of strong liquidity at the point of land acquisition, thus ensuring that the Applicant's existing cash reserves are more than sufficient to cater for such a contingent risk. Further details are provided in the Funding Statement (Examination Library ref. APP-023, the revised version of which submitted at this Deadline 2 is Applicant's document ref. 4.2 Rev002).

## 6 CONSTRUCTION AND OPERATION EFFECTS

Table 6-1 - ExA Written Question – CO 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.1  | Applicant   | <p><b>Construction Programme</b></p> <p>Chapter 3 of the ES states that if both units were repowered, then the construction would occur consecutively rather than concurrently. It goes on to report that there would be a gap of a year between construction periods, though the gap could be longer, dependant on commercial conditions.</p> <p>i) Explain the extent to which the findings in the ES are sensitive to this assumption.</p> <p>ii) Explain the likely outcome implications if construction did not adopt these assumptions in practice.</p> |

- 6.1.1 The Environmental Statement assumes that if both Unit X and Unit Y are built, the construction of Unit Y would likely commence in 2024 and be completed in 2027 (this is based on a assumption that Unit X would be constructed as soon as the DCO is made, which is the likely assumption). The Environmental Statement only considers the consecutive construction of Unit X and Unit Y; it does not consider the concurrent construction of the two Units. Concurrent construction of the Units is not considered viable or desirable by the Applicant (as explained in further detail in response to question CO 1.2 below). Furthermore, there would be logistical constraints to concurrent construction phases, including the constructability of both Units X and Y concurrently due to the space between the proposed units and the availability and use of laydown areas. Accordingly, the Environmental Statement has not assessed a concurrent construction of Unit X and Unit Y. Should the ExA deem it necessary, the Applicant would be willing to include a requirement that prevented the concurrent construction of Unit X and Unit Y, given it would be unlikely.
- 6.1.2 The Environmental Statement has assumed a gap of one year between construction periods. However, the description of the scenario considered in the Environmental Statement (provided in ES Chapter 3 – Site and Project Description (Examination Library ref APP-071), Table 3-8) made clear that:
- The construction of Unit Y is assumed to take place 12 months after Unit X is complete, however this could be longer.*
- 6.1.3 A flexible and potentially longer gap between construction periods is, therefore, possible. However, in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, the "likely" scenario has been assessed. This is no different to any other development that assumes a likely build year for the project. In the case of the Proposed Scheme, the period of a year between construction periods is based on the Applicant's current view of capacity requirements in the future; it is subject to factors such

as the change in electricity demand in the medium term, the retirement of existing plant and the build out of other proposed projects. It is recognised that Environmental Impact Assessments do not require applicants to assess every possible scenario, and that an Environmental Statement is based on assumptions and predictions that are considered likely.

6.1.4 With respect to part (i) of the question, findings in the Environmental Statement that are sensitive to the assumption of consecutive construction rather than concurrent are:

- Changes to the future baseline environment;
- The timing of the construction of other reasonably foreseeable developments considered in the cumulative impacts assessment, and
- Other projects or development that cannot at this time be reasonably foreseen (e.g. that do not have planning consent or are not in the planning process).

These factors are discussed further below, in order to identify the sensitivity of each factor to change in the timing of the construction of Unit Y.

## **6.2 Changes to the Future Baseline Environment**

- 6.2.1 It is possible that developments identified in the ES Chapter 17 - Cumulative Assessment (Examination Library ref APP-085) will have been built out and will become part of the baseline environment in the period beyond 2017. The ES has assessed the likely significant effects during operation (with development in place) and therefore reported on the worst case cumulative impacts of the Proposed Scheme with known consented development and other development currently in the planning process being built. Accordingly, the precise timing of the construction period for Unit Y is not considered likely to change the assessment of significant effects resulting from the construction or operation of the Proposed Scheme as a result of reasonably foreseeable changes to the future baseline environment.
- 6.2.2 In addition to developments that could result in additional impacts, some developments could introduce new residential receptors. Based on the development identified in the cumulative assessment, and the proximity of that development to the proposed location of Unit Y, and the likely effects associated with the construction and operation of Unit Y, it is not considered that any additional receptors (residential) would be subject to impacts arising from the construction of Unit Y in the period beyond 2024-2027 or its subsequent operation that would be materially different to those assessed in the ES.
- 6.2.3 There are also likely to be changes to the natural baseline environment in the future and the ES is based on the best available predictions of that future baseline. It is acknowledged that there is always inherent uncertainty in the future baseline but this is no different to any other major project where the anticipated years for construction and operation are not known precisely. The ES cannot realistically consider all possible scenarios, but examines the range of future scenarios considered likely, including those with the expected worst-case impacts.
- 6.2.4 The future baseline, against which the Environmental Impact Assessment has been undertaken, is, therefore, not considered sensitive to changes in the assumptions upon which the ES is based in relation to the timing of construction of Unit Y.

### Timing of the Construction of Other Reasonably Foreseeable Development During Construction of Unit Y

- 6.2.5 The ES Chapter 17 – Cumulative Assessment (APP-085) considers proposed developments that are in the public domain, such as planning applications registered with the local planning authorities / Planning Inspectorate, and already consented developments that are not yet constructed or operational. The assessment has taken into account the uncertainty around the timing of other developments and potential for overlapping construction periods. As the ES has assessed a realistic worst case scenario of the cumulative impacts of the Proposed Scheme with known consented development and other development currently in the planning process being constructed, changes to the timing of the construction of Unit Y are not considered likely to change the assessment of significant cumulative effects.
- 6.2.6 The timing of the construction of other reasonably foreseeable development is, therefore, not considered sensitive to changes in the assumptions upon which the ES is based in relation to the timing of construction of Unit Y.

### Other Projects or Development that Cannot at this Time be Reasonably Foreseen

- 6.2.7 The ES Chapter 17 – Cumulative Assessment (Examination Library ref APP-085) takes an approach in line with PINS guidance (Advice note seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects). It is standard practice in environmental impact assessment for the cumulative assessment to consider only those actions that are reasonably foreseeable. The ES considers proposed developments that are in the public domain, such as planning applications registered with the local planning authorities / Planning Inspectorate and already consented developments that are not yet constructed or operational. The ES has also had regard to the strategic vision for development in Selby District as set out in the adopted Core Strategy. Whilst it is possible that some development not yet foreseen may come forward in the period beyond 2024-27, it is also likely that some of the development that has been included in the cumulative assessment will not be built out. On balance, taking into account the likelihood that some of the foreseen development may not take place and the likely scale of future development anticipated in the Selby District's spatial development strategy, the availability of development sites, and environmental constraints, it is not considered that the assessment in the ES is sensitive to other projects not yet assessed should the construction of Unit Y be delayed beyond 2024-2027.
- 6.2.8 With respect to part (ii) of the question, as the factors informing the assessment are not sensitive to a change in when Unit Y is constructed (as set out above with respect to part (i) of the question), it follows that there are unlikely to be implications to the ES outcomes, in terms of any materially new or different likely significant effects, if the construction of Unit Y did not proceed in line with the assumptions made in the ES. This is the same conclusion in the event that Unit X was delayed (the draft DCO requires the Proposed Scheme to be commenced within 5 years) but with Unit Y following 12 months later. In that case, the assumption for Unit Y would be correct and it would be Unit X that was slightly later than is currently likely to be the case. This is an example that there are so many permutations, that an applicant cannot be expected to assess them all. An applicant can only be expected to assess the likely case, which is what Drax has done.

Table 6-2 - ExA Written Question – CO 1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                          |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.2  | Applicant   | <p><b>Construction Programme</b></p> <p>Justify the approach as to why the construction of Unit Y could not be undertaken alongside the construction of Unit X to minimise the longevity of the construction programme of at least 83 months.</p> |

- 6.2.9 The footprint of the development is very small due to the confines of the Existing Drax Power Station Complex and the need to keep the new units close to the existing steam components. It would be extremely difficult to construct the units concurrently because the area required for laydown and craneage is limited. Concurrent construction would also increase the peak construction traffic, leading to greater impacts on local junctions. It should be noted that only construction on the Existing Drax Power Station Complex would continue for the full duration of the construction period. Construction of the Gas Pipeline, AGI and GRF will all be completed during the construction of Unit X.

Table 6-3 - ExA Written Question – CO 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                               |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.3  | Applicant   | <p><b>Working width</b></p> <p>Paragraphs 3.3.20 to 3.3.23 of Chapter 3 of the ES discuss the approach taken to the working width. However, it is not clear what the working width actually is, and why precisely this size is required. Provide this Information.</p> |

## 6.3 Overview

- 6.3.1 Details of the working width for the Gas Pipeline, including an explanation for its width, are set out in the Gas Connection Statement submitted with the Application (paragraphs 4.5.2 – 4.5.4, Examination Library ref. APP-065), and further information is provided in response to this question. In describing the "working width" in connection with the construction of the Gas Pipeline, it is useful to highlight some industry standard terms (some of which were not used in the DCO documents but may aid this description), these being:
- Construction corridor;
  - Working width; and
  - Permanent easement.

- 6.3.2 This response describes all of these elements in order to provide context to the answer to the ExA.
- 6.3.3 The construction corridor comprises Work Nos. 7A and 7B on the Work Plans (Examination Library ref APP-009, a revised version of which has been submitted at this Deadline 2, Applicant's document ref. 2.3A Rev 003)). The construction corridor comprises the working width and the land in which the permanent easement is required. The width of the construction corridor is dictated by the need for limits of deviation for Work No. 7A. Until micro siting is carried out, it is not possible to identify with any degree of certainty where the permanent easement would be located and, therefore, where the working width would be located.
- 6.3.4 The working width can be described as the land to be temporarily possessed for the actual construction process for the Gas Pipeline within the construction corridor. This land is shaded blue and yellow on the Land Plans (Examination Library ref AS-010, a revised version of which has been submitted at this Deadline 2, Applicant's document ref. 2.2 Rev003). The final working width position will be determined based on a number of factors, most notably micro siting, the direction of travel of the construction team and below-ground issues not yet identified.
- 6.3.5 The permanent easement is the land in which the Application seeks to create and acquire new rights over, in order to install, operate and maintain the Gas Pipeline in the future. This area is much narrower than the working width. This land will be within the land shown shaded blue on the Land Plans (Examination Library ref AS-010, a revised version of which has been submitted at this Deadline 2, Applicant's document ref. 2.2 Rev003).
- 6.3.6 A further explanation of each of the construction corridor, working width and permanent easement is set out below, including the approximate width of each corridor and the justification for that width.

## **6.4 Construction Methodology**

- 6.4.1 It is instructive to consider the general approach for a pipeline construction project in order to justify the approach taken and flexibility requested at this stage.
- 6.4.2 The following steps are key to a pipeline construction project:
- Pipeline route pegging out;
  - Pre-construction drainage works (if required);
  - Fencing of the working width;
  - Hedgerow removal;
  - Topsoil stripping of the working width;
  - Pipe Stringing or laying out pipe sections on the stripped working width;
  - Welding and joint inspection and coating;
  - Trench excavation and pipe laying;
  - Backfilling of the trench;
  - Post construction drainage works (if required);
  - Topsoil reinstatement;
  - Testing and commissioning;
  - Construction working width removal.



- 6.4.3 A pipeline construction must be considered as a moving production line; as such it has a direction of travel based on a number of key factors which are only finalised once a Main Works Contractor (MWC) can review a detailed design and survey the specific site circumstances. Defining this direction of travel without the input of the MWC will be cost inefficient for the project as a whole. The pipeline construction corridor should therefore allow for a variety of MWC construction arrangements.

## 6.5 Construction Corridor

- 6.5.1 At the time of statutory consultation in early 2018, a wider construction corridor was defined, and this area has since been reduced, informed by design development of the Proposed Scheme and further environmental impact assessment, and this reduced plot is now commensurate to the construction corridor.
- 6.5.2 The construction corridor for the Proposed Scheme, between the AGI and GRF, takes account of the various site specific land and construction issues. As such, the width varies along the route to either increase at crossing points or decrease at pinch points.

### Construction Corridor Width

- 6.5.3 The width of the Gas Pipeline construction corridor was decided based on allowing for the working width to be oriented (direction of travel) whichever way the MWC deems is most efficient for the Proposed Scheme.
- 6.5.4 The corridor was built up as follows:
- An assumed maximum working width of 30m was the starting point, which is within the expected range of working widths for constructing large diameter pipelines greater than 900 mm.
  - The pipeline would be installed circa 10m from one side of the working width, but the side chosen for this is dependent on the direction of travel of the pipeline construction team.
  - Therefore, to allow for pipeline construction in either direction (to or from Drax) a 20m distance from each side of the Gas Pipeline has been allocated.
  - Additionally, a 10m “margin” has been added to either side in order to maintain some flexibility in micro-siting the route design prior to any ground invasive works.
- 6.5.5 This is shown diagrammatically in Figure 6-2 and 6-3; and results in an overall construction corridor width of 60m.

Figure 6-1 - Construction Corridor width diagrammatic breakdown

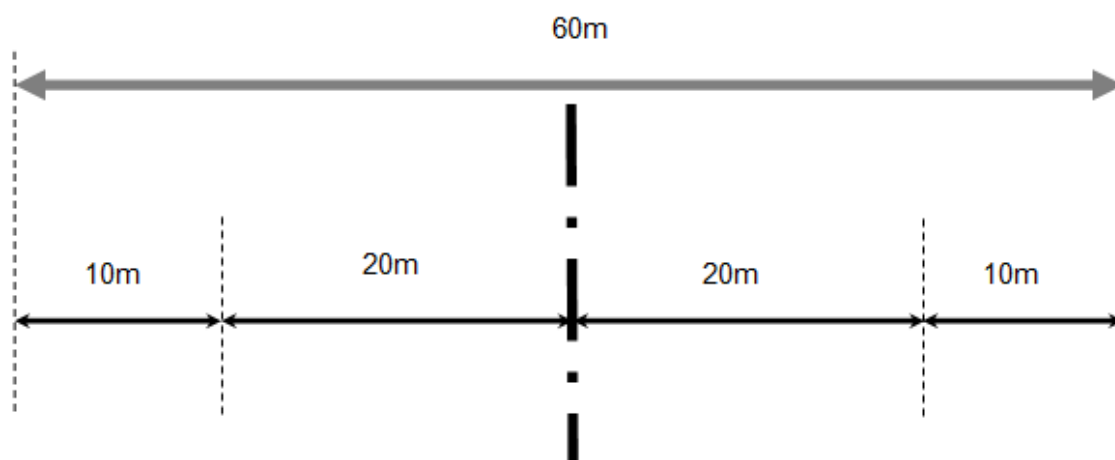
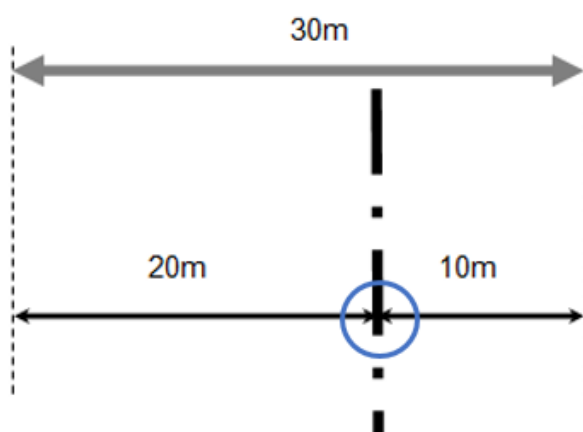


Figure 6-2 - Typical Working Width diagrammatic breakdown



- 6.5.6 The construction corridor has been expanded at special crossings of roads and watercourses to allow for plant access/egress, construction parking and laydown areas and the specialist equipment required for trenchless crossings methods.

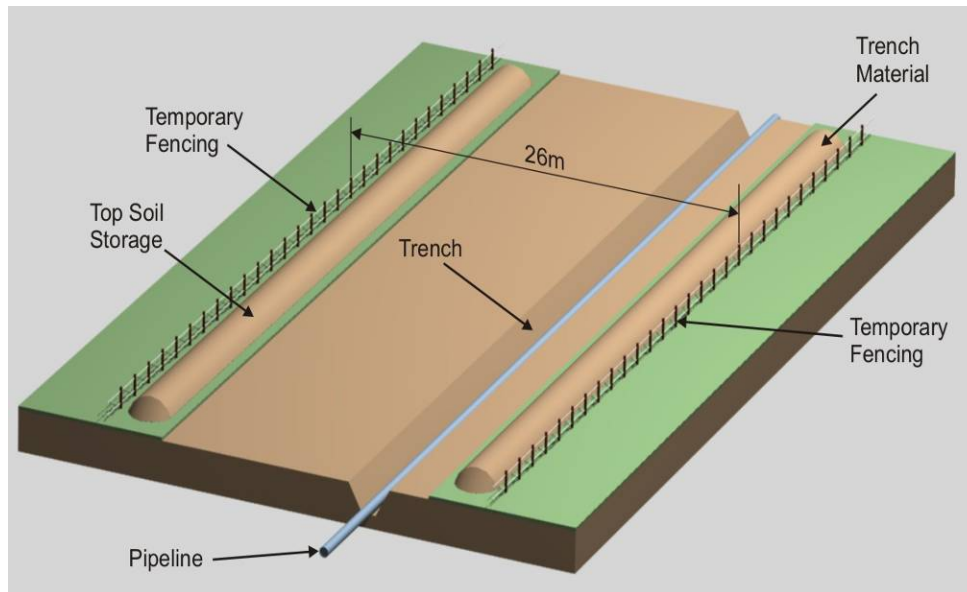
## 6.6 Working Width

- 6.6.1 This section describes the Gas Pipeline working width requirements of the Proposed Scheme. It begins by discussing some elements of a typical working width and concludes with a discussion of the exact values being used in the Proposed Scheme.
- 6.6.2 The working width is the primary factor that informs the construction corridor and therefore the Limits of Deviation for the Gas Pipeline in the DCO Application. As described previously, the working width will not be centred on the Gas Pipeline (see Figure 6-2); the Gas Pipeline will sit approximately 1/3 of the width in from one side (i.e. around 10m), and the side which it is closest to is defined by the direction the construction is performed.

### Typical Working Width, Cross Country Sections

- 6.6.3 All construction activities are undertaken within a temporarily fenced-off strip of land, which is referred to as the "working width". The working width will typically be anywhere up to 30 m wide for an NTS transmission pipeline (see Figure 6-2), with the gas pipeline typically offset from the centre line to allow for construction access.
- 6.6.4 The working width must contain all construction activity, with the exception of the bulk storage of pipeline and ancillary equipment which would be held at a pipeline construction compound. The Gas Pipeline construction compound would be within the construction corridor, and likely to be located off Rusholme Lane.
- 6.6.5 The working width would contain an access strip that would be used to traverse the Gas Pipeline route and move equipment.
- 6.6.6 As a result of the access strip requirement and the need to separate top soil and sub soil; the Gas Pipeline trench would not be centred in the working width. Rather, the Gas Pipeline trench is off-centre being typically a third of the way across the working width, as explained above.
- 6.6.7 A diagram of the typical working width for a normal field section is shown in Figure 6-3.

Figure 6-3 - Illustrative working width layout



- 6.6.8 The exact nature of the working width (size and distance from edge to pipeline centreline) would be decided in conjunction with the pipeline MWC. At this stage, the area of the working width cannot be defined with precision, and some flexibility is required as to the exact location and dimensions of the working width (hence the width of the construction corridor, as explained above).
- 6.6.9 A working width specified too early in the design life of the pipeline may be viewed as an unnecessary design restriction by the MWC. This would likely result in a time or cost premium being realised with the MWC as this would be viewed as restricting the possible efficient modes of practice and added MWC value engineering. This in turn could give rise to environmental effects that could have been avoided through micro siting within limits of deviation.

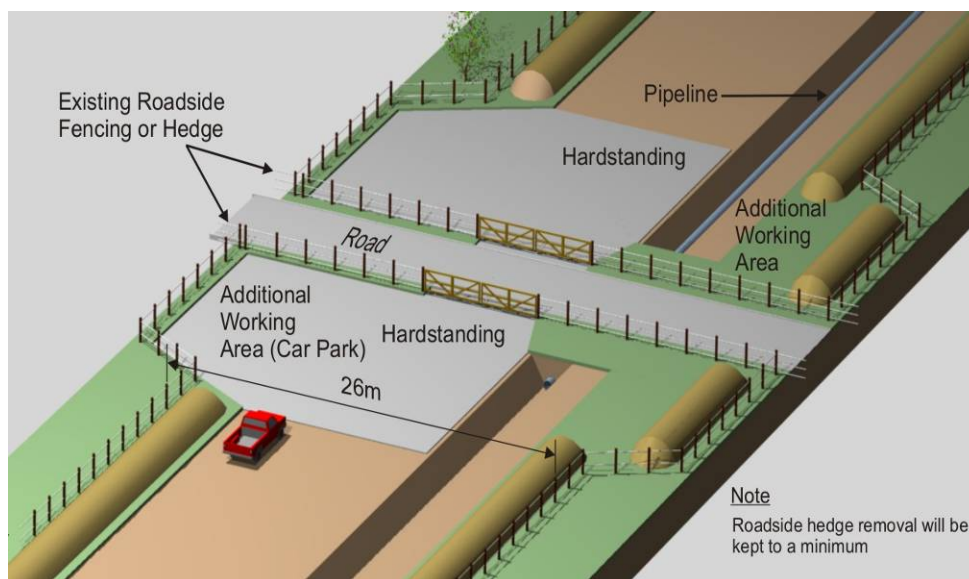
*Figure 6-4 - Lowering pipe into a prepared trench*



#### Typical Working Width, Trenchless Crossings

- 6.6.10 The working width may be increased in size adjacent to special crossings (i.e. the crossing of Main Road, the drain north of Rusholme Lane (see Land Plans, Examination Library ref: AS 010, Sheet 7 of 9) and the drain south of Carr Lane (see Land Plans, Examination Library ref: AS 010, Sheet 5 of 9) to provide additional working areas and / or storage for construction materials, construction equipment or construction plant. Updated Land Plans have been submitted at Deadline 2 (Applicants Document Ref: 2.2 Rev003).
- 6.6.11 Conversely, the working width may be reduced in size in exceptional areas such as areas of environmental sensitivity or in close proximity to existing buildings, services and utilities.
- 6.6.12 A diagram of the typical working width for a trenchless road crossing road is shown below.

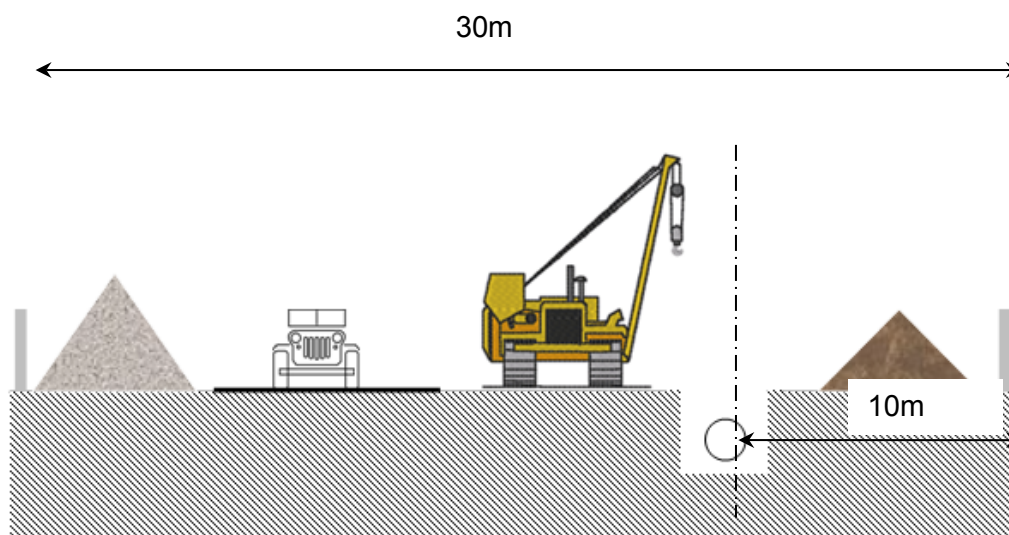
Figure 6-5 - Illustrative working width layout – special crossing (road crossing)



### Proposed Working Width Dimensions

- 6.6.13 The working width is a primary component of the construction corridor and is a function of the requirements of the MWC's design process.
- 6.6.14 Assuming a working width of 30m, a diagram showing the arrangements and typical dimensions is shown in Figure 6-6.

Figure 6-6 - Illustrative working width layout – special crossing (road crossing)





6.6.15 The working width is made up of the following (from left to right):

- Fence line (including new fences, badger crossing points, etc)
- Top soil storage (6m)
- Access strip(5m)
- Construction Area, pipe stringing, etc (6m)
- Trench (1m)
- Sub soil storage (8m)
- Fence line (including new fences, badger crossing points, etc)

## 6.7 Permanent Easement

6.7.1 In order for the Gas Pipeline to be operated going forward, rights to a permanent easement are sought. This permanent easement describes the area of land over which rights along the Gas Pipeline are required by the undertaker for the purpose of installing, operating, maintaining and protecting the Gas Pipeline in the ground, and performing basic operational, maintenance and monitoring activities.

6.7.2 As the permanent easement is required in relation to the siting of the Gas Pipeline in the ground and to perform basic maintenance only, the width of the permanent easement is smaller than the working width.

6.7.3 Whilst the width of the permanent easement is dictated by operational and maintenance considerations, there is some scope for it to be reduced where a specific land owner need dictates. Any reduction of the standard easement must be shown to be capable of allowing safe operation and maintenance activities in the future.

Table 6-4 - ExA Written Question – CO 1.4

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.4  | Applicant   | <p><b>Other Consents and Licences</b></p> <p>Chapter 3 of the ES acknowledges that a proposed connection agreement will be required with National Grid. The Other Consents and Licences document states that a Bilateral Connection Agreement and construction agreement for connection to the National Transmission System at the existing National Grid 400 kilovolt substation for the export of electricity from the Site will be required. It further states that such an agreement is expected to be in place before 2 June 2018.</p> <p>Provide an update.</p> |

6.7.4 On 12 July 2018 the following agreements were put in place with National Grid for the connection to the National Transmission System at the existing 400kV substation:

- (i) Agreement to Vary the Bilateral Connection Agreement for Drax Power Station at Drax 400kV Substation;

- (ii) Construction Agreement in respect of Drax Power Station at Drax 400kV Substation.

- 6.7.5 These documents relate to Unit X. Drax Power Station has a previously existing Bilateral Connection Agreement with National Grid, which is why document (i) above is a variation to an existing agreement rather than a new Bilateral Connection Agreement. The Construction Agreement is a stand-alone new agreement for connection of Unit X into the substation.
- 6.7.6 A further Agreement to Vary the Bilateral Agreement and a Construction Agreement would be required for Unit Y and Drax intends to approach National Grid about these at the appropriate time given the need for Unit Y to follow consecutively, rather than concurrently, with Unit X as explained in response to question CO 1.2.

Table 6-5 - ExA Written Question – CO 1.5

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                   |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.5  | Applicant   | <p><b>Other Consents and Licences</b></p> <p>Provide an update to Document 5.8 ‘Other Consents and Licences’, noting that there are references within the application version to expected agreements. Ensure that this is kept updated and resubmitted at each subsequent deadline of the Examination.</p> |

- 6.7.7 Document 5.8 ‘Other Consents and Licences’ (Examination Library ref APP-068) has been updated, and is submitted at this Deadline 2 as Revision 2 (Applicant’s document ref 5.8).
- 6.7.8 The changes made to the document are detailed within the Document 8.2.1 ‘Schedule of Changes’ (Rev 002), provided for Deadline 2 (Applicant’s document ref 8.2.1).
- 6.7.9 For each deadline of the Examination, an updated Document 5.8 ‘Other Consents and Licences’ will be provided, where necessary.

Table 6-6 - ExA Written Question – CO 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.6  | Applicant   | <p><b>Site Configuration Works (Stage 0)</b></p> <p>Chapter 3 of the ES states that site reconfiguration works may be consented under the Town and Country Planning Act 1990 or through the dDCO. At the Preliminary Meeting, it was stated that these works had been consented and commenced, and accordingly Stage 0 would be deleted from the application. Provide a written update, and explain the implications for the dDCO and ES.</p> |

- 6.7.10 An application which comprises the Site Reconfiguration Works was submitted as part of a Town and County Planning Act (TCPA) full planning application. The application was approved on 24 May 2018 by Selby District Council (Decision Number 2018/0154/FULM) ("TCPA permission"). The TCPA permission included 6 planning conditions of which 5 have been discharged, and the final condition can only be complied with once the relevant buildings are occupied by contractors. The TCPA permission has now been implemented; development associated with the consent was commenced at the southern end of the Drax Power Station Site and will continue into 2019. The discharge of pre-commencement conditions and the commencement of development has been acknowledged within the SoCG with Selby District Council and North Yorkshire County Council (an agreed draft of which was submitted at Deadline 1, Examination Library ref REP1-006).
- 6.7.11 As a result of the delivery of the Site Reconfiguration Works ("Stage 0" of the DCO Application) under the TCPA permission, the Applicant has submitted a non-material amendment application at this Deadline 2 to remove Stage 0 from the DCO Application. The ES has assessed the likely significant effects of Stage 0 on its own, and then it assessed Stages 1, 2 and 3 against a baseline which assumed the completion of the Stage 0 works under either the DCO or the TCPA permission (as explained at section 3.3 of Chapter section 3.3 of Chapter 3 Site and Project Description (Examination Library APP-071)).
- 6.7.12 Given the ES assesses Stage 1 (and subsequent stages) on the assumption that the Stage 0 works, and its associated mitigation, have been completed, the Applicant has submitted in support of the non-material amendment application a document entitled Removal of Stage 0 – Mitigation Review (Applicant's document ref 8.5.5). This document confirms that the mitigation measures associated with Stage 0 in the DCO Application are equally secured under the TCPA permission, and where they are not, that this has no bearing on the "Stage 0 baseline" as assumed in the ES. It follows from this that once the Stage 0 works are completed pursuant to the TCPA permission, the "Stage 0 baseline" as assumed in the ES remains the same. There are therefore no implications for the findings in the ES as a result of the removal of Stage 0 from the DCO Application.
- 6.7.13 With respect to the draft DCO, the changes made to the draft DCO as a result of the removal of Stage 0 are set out in the response to question DCO 1.14.

Table 6-7 - ExA Written Question – CO 1.7

| ExA Ref | Question to                                            | Question                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.7  | Applicant<br>Natural England<br>Selby District Council | <b>Permanent and Temporary Land Take</b><br>i) Provide comments on the effects of the Proposed Development and the proposed land take on Best and Most Versatile land.<br>ii) Comment on the draft Soil Management Plan, currently appended to the outline CEMP.<br>For the Applicant:<br>iii) Provide a plan which identifies and distinguishes between land that is required permanently and temporarily. |

- 6.7.14 With respect to parts (i) and (ii), the Applicant would note that in respect of Natural England, paragraph 3.12.2 of the Statement of Common Ground agreed with Natural England (Examination Library Ref: REP1-004) confirms that *"The permanent loss of agricultural land due to the Proposed Scheme during Stage 1 is 6.03 ha (associated with the Gas Receiving Facility and Above Ground Installation). Given this loss is less than 20 ha, it is considered to be insignificant."*
- 6.7.15 Paragraph 3.12.3 goes on to confirm that in respect of the temporary disturbance for the construction of the Gas Pipeline and passing place at Rusholme Lane, given the *"existing agricultural land within this area will be reinstated to former condition[,].there will be no significant impact [or] significant effect on Best and Most Versatile agricultural land."*
- 6.7.16 Paragraph 3.12.4 expressly refers to the Soil Management Plan, with paragraph 3.12.5 confirming that *"the Proposed Scheme would not result in significant impacts on agriculture and soils."*
- 6.7.17 With respect to part (iii) of the question (addressed to the Applicant), a plan that shows Agricultural Land Classification based on high level mapping (The Ministry of Food and Fisheries (MAFF) provisional Agricultural Land Classification mapping (Pre-1988 and Post 1988)) and identifies and distinguishes between land that is required permanently and temporarily, is provided in Appendix CO-A.

Table 6-8 - ExA Written Question – CO 1.8

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.8  | Applicant   | <p><b>Land Drainage</b></p> <p>Chapter 3 of the ES states that a pre-construction land drainage scheme will be developed for areas where a land drainage scheme is deemed necessary, in discussion with landowners and occupiers. The ES goes on to describe what this may entail; however, any proposed measures do not appear to be confirmed at this stage. Provide this information.</p> |

- 6.7.18 The Outline Construction Environmental Management Plan (CEMP) (Examination Library ref. APP-133) has been revised and submitted at this Deadline 2 (Applicant's document ref. 6.5 Rev 002), and now includes a requirement for a land drainage scheme or schemes as per paragraph 3.3.23 of Chapter 3 of the ES (Examination Library ref. APP-071). The new text can be found in the revised Outline CEMP submitted at Deadline 2.
- 6.7.19 Submission and approval of the final form CEMP (more than one CEMP could be submitted as the requirement prevents any part of the authorised development (including for site clearance) from commencing until a CEMP for that part has been submitted for approval), which is to be in substantial accordance with the Outline CEMP (which will itself be a certified document as identified in Schedule 15, table 15 of the draft DCO) is secured by Requirement

16 in Schedule 2 of the draft DCO (submitted at Deadline 2, Applicant's reference 3.1 Rev 2).

- 6.7.20 The land drainage scheme or schemes are therefore secured by the requirement in the draft DCO and the referenced certified document (the Outline CEMP).

Table 6-9 - ExA Written Question – CO 1.9

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.9  | Applicant   | <p><b>Securing Land Drainage</b></p> <p>Paragraphs 3.3.24 to 3.3.26 of Chapter 3 of the ES describe proposals to inspect and record land drains at the detailed design and construction phases. Inspection and recording of land drains is not secured in the dDCO.</p> <p>i) Justify the approach not secure inspection or recording of land drains in the dDCO; or</p> <p>ii) Make such a provision.</p> |

- 6.7.21 The Outline Construction Environmental Management Plan (CEMP) (Examination Library ref. APP-133) has been revised and submitted at this Deadline 2 (Applicant's document ref. 6.5 Rev 002), and now includes requirements to inspect and record land drains at the detailed design and construction phases as per paragraphs 3.3.24 - 3.3.26 of Chapter 3 of the ES (Examination Library ref. APP-071). The new text can be found in the revised Outline CEMP submitted at Deadline 2.

- 6.7.22 Submission and approval of the final form CEMP (more than one CEMP could be submitted, as the requirement prevents any part of the authorised development, save for the permitted preliminary works (except for site clearance), from commencing until a CEMP for that part has been submitted for approval), which is to be in substantial accordance with the Outline CEMP (which will itself be a certified document as identified in Schedule 15, table 15 of the draft DCO) is secured by Requirement 16 in Schedule 2 of the draft DCO (submitted at Deadline 2, Applicant's reference 3.1 Rev 2).

- 6.7.23 The inspection and recording of land drains is therefore secured by the requirement in the draft DCO and the referenced certified document (the Outline CEMP).

Table 6-10 - ExA Written Question –CO 1.10

| ExA Ref | Question to | Question                                                                                                                                                                                                                                        |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.10 | Applicant   | <p><b>Human Health</b></p> <p>Paragraph 3.2.23 of Chapter 3 of the ES states that the Proposed Development will comply with the International Commission on Non-ionizing Radiation Protection (ICNIRP) guidelines for health protection. It</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>further states that the impact of the change to electro-magnetic field (EMF) is likely to be minimal, but nevertheless an assessment of both occupational exposure and public exposure guidelines that apply due to proximity to a public right of way is being undertaken and will be discussed with Public Health England and submitted to the Examining Authority.</p> <p>Provide an update, including whether such an assessment has been or will be submitted for this Examination.</p> |

- 6.7.24 The Applicant submitted document 8.4.5 Electric and Magnetic Fields (EMF) Assessment Report (Examination Library ref REP1-012) to the Examining Authority as part of its Deadline 1 submission. The EMF Assessment Report has been submitted to Public Health England for their review but we have not yet received a response.

Table 6-11 - ExA Written Question – CO 1.11

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.11 | Applicant   | <p><b>Cumulative Effects</b></p> <p>Paragraph 17.11.3 of Chapter 17 of the ES states that any planning applications, status updates or additional information published since March 2018 have not been included with the assessment in the ES. Confirm whether you are aware of any additional other projects or plans that should be included within the cumulative effects assessment since March 2018.</p> |

- 6.7.25 The Applicant has carried out an additional search to identify additional projects or plans that have the potential to have cumulative environmental effects with the Proposed Scheme. The Applicant has also requested any relevant information from North Yorkshire County Council and Selby District Council but no response has been received to date.
- 6.7.26 The projects and plans that have been identified are shown in Table 6-12

Table 6-12 - Cumulative Effects - Additional Projects and Plans

| Application    | Description                                                                            | Address                                              | Date Received   | Outcome               |
|----------------|----------------------------------------------------------------------------------------|------------------------------------------------------|-----------------|-----------------------|
| 18/02836/STPLF | Erection of 87 dwellings with associated parking, access from adopted road for Phase 1 | Land North Of 45 Thorntree Lane Goole East Riding Of | Tue 28 Aug 2018 | Pending Consideration |



| Application    | Description                                                                                                                                                                                                                                                                                                                                                    | Address                                                                                     | Date Received   | Outcome               |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------|-----------------------|
|                |                                                                                                                                                                                                                                                                                                                                                                | Yorkshire DN14 6LJ                                                                          |                 |                       |
| 2018/0872/FULM | Demolition of existing dilapidated concrete building, associated portacabins and outbuildings. Partial demolition of existing packing, heat treatment plant and warehouse building. Construction of a world leading flour production facility, including new mill building, welfare buildings, warehouse, CHP, silos, weighbridges and associated hardstanding | Northside Industrial Park<br>Selby Road<br>Eggborough<br>Goole East<br>Yorkshire            | Mon 30 Jul 2018 | Awaiting decision     |
| 2018/0870/REMM | Reserved matters application for the erection of 67 dwellings pursuant to 2014/1130/OUT on land to west                                                                                                                                                                                                                                                        | Street Record<br>Station Road<br>Carlton Goole<br>East Yorkshire                            | Fri 27 Jul 2018 | Awaiting decision     |
| 2018/0934/FULM | Proposed construction of 25 assisted care apartments with associated car parking and landscaped gardens                                                                                                                                                                                                                                                        | Osborne House<br>Union Lane<br>Selby YO8 4AU                                                | Thu 09 Aug 2018 | Awaiting decision     |
| 2018/0310/DOC  | Hybrid application comprising outline proposals for the erection of circa 200 new dwellings including the construction of a new junction onto Flaxley Road                                                                                                                                                                                                     | Street Record<br>Flaxley Road<br>Selby                                                      | Fri 16 Mar 2018 | Awaiting decision     |
| 18/03355/OUT   | Outline - Residential development for up to 18 dwellings (All matters reserved)                                                                                                                                                                                                                                                                                | Land South Of<br>Rockall Main<br>Road<br>Gilberdyke East<br>Riding Of<br>Yorkshire HU15 2UP | Fri 12 Oct 2018 | Pending Consideration |
| 2018/0319/SCN  | EIA Screening opinion request for solar farm                                                                                                                                                                                                                                                                                                                   | Henwick Hall<br>Farm Henwick<br>Hall Lane Burn                                              | Thu 15 Mar 2018 | EIA Not Required      |

| Application    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Address                                                                                  | Date Received      | Outcome              |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------|----------------------|
|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Selby North<br>Yorkshire YO8<br>8LD                                                      |                    |                      |
| 2018/0743/FULM | Demolition of buildings and removal of concrete hard standing and redevelopment of site to create a retirement village comprising a change of use of land to site 168 residential park home caravans, temporary reception lodge, shop and sales home, community centre with meeting hall, kitchen, toilets, office, shop, outdoor terrace, village green, and provision of lakes, ponds, public and private amenity spaces, estate roads, car parking, bus layby's, refuse stores, maintenance building and yard | Former<br>Mushroom<br>Farm Gateforth<br>New Road<br>Brayton Selby<br>North Yorkshire     | Fri 29 Jun<br>2018 | Awaiting<br>decision |
| 2018/0474/OUTM | Outline application including access (all other matters reserved) for development of 98 dwellings (including self build plots), a primary school and nursery and public open space with associated landscaping and access                                                                                                                                                                                                                                                                                        | Land At Barff<br>Lane Brayton<br>Selby North<br>Yorkshire                                | Mon 23<br>Apr 2018 | Awaiting<br>decision |
| 2018/0875/SCP  | EIA scoping request for the proposed residential led mixed use development                                                                                                                                                                                                                                                                                                                                                                                                                                       | Brownfield Site<br>Olympia Park<br>Barlby Road<br>Barlby Selby<br>North Yorkshire        | Thu 26<br>Jul 2018 | Awaiting<br>decision |
| 2018/0468/REMM | Reserved matters application including (a) appearance, (b) landscaping, (c) layout, (d) scale and (e) means of access to the site for erection of 35 dwellings                                                                                                                                                                                                                                                                                                                                                   | Land To The<br>North Of The<br>Laurels The<br>Laurels Barlby<br>Selby North<br>Yorkshire | Mon 23<br>Apr 2018 | Awaiting<br>decision |

| Application   | Description                                                                                                                                                                                                                                                                                                                                                                                                  | Address                                                                                                  | Date Received   | Outcome           |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------|-------------------|
|               | (outline planning permission 2015/0586/OUT)                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                          |                 |                   |
| 2018/0818/EIA | Outline planning application with all matters (scale, appearance and landscaping) except access and landscaping reserved for the demolition of existing colliery buildings and construction of up to 186,000 sq m (approx. 2,000,000sq ft) of Class B2/B8 and associated Class B1 floor space with supporting container storage area and associated buildings, trackside facilities, access and landscaping. | Gascoigne Wood Interchange Gascoigne Wood Mine Lennerton Lane Sherburn In Elmet North Yorkshire LS25 6LH | Mon 16 Jul 2018 | Awaiting decision |
| 2018/1012/DOC | Discharge of conditions 04 (noise, vibration, dust and dirt), 20 (site compound) and 21 (groundworks) of approval 2012/0400/EIA for outline planning application (accompanied by an Environmental Statement) for the construction of 498 dwellings to include access on Phase 2 land on land between Moor Lane and Low Street                                                                                | Street Record Low Street Sherburn In Elmet North Yorkshire                                               | Tue 28 Aug 2018 | Awaiting decision |
| 2018/0974/DOC | Discharge of conditions 07 (surface water), 08 (foul drainage), 10 (drainage), 14 (highways), 15 (highways) & 21 (highways) of approval 2016/1256/OUTM Outline application for residential development comprising up to 60 dwellings, areas of open space, landscaping and associated infrastructure with all matters reserved                                                                               | Street Record Pinfold Garth Sherburn In Elmet North Yorkshire                                            | Mon 20 Aug 2018 | Awaiting decision |

| Application     | Description                                                                                                                                                                                                                                            | Address                                                                 | Date Received   | Outcome               |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------|-----------------------|
|                 | except access on land to north                                                                                                                                                                                                                         |                                                                         |                 |                       |
| 18/01746/FULM   | Erection of 23 dwellings on approx 0.53ha of land with associated car parking (Being resubmission of application 15/00878/FULM refused on 04.07.2018).                                                                                                 | Land Off Marshland Road Moorends Doncaster DN8 4TP                      | Fri 13 Jul 2018 | Awaiting decision     |
| 18/03342/EIASCR | EIA screening opinion - Proposed change of use to a recycling facility, erection of tanks and containment bays for biosolids treatment, waste treatment and waste storage facility, which are to be used as soil improvers and fertiliser replacements | Peat Works Reading Gate Swinefleet East Riding Of Yorkshire DN14 8DT    | Thu 11 Oct 2018 | Pending Consideration |
| 18/01892/OUT    | OUTLINE - Erection of 28 dwellings (all matters reserved)                                                                                                                                                                                              | Land South Of Nanrock Close Eastrington East Riding Of Yorkshire        | Thu 07 Jun 2018 | Application Approved  |
| 18/02356/PLF    | Erection of 15 dwellings                                                                                                                                                                                                                               | Land South Of Oakwood Park Pollington East Riding Of Yorkshire DN14 0DB | Fri 20 Jul 2018 | Pending Consideration |

6.7.27 An assessment of the cumulative effects of these projects with the Proposed Scheme will be submitted to the Examination at Deadline 3.

6.7.28 The Applicant also wishes to draw attention to the draft Statement of Common Ground with North Yorkshire County Council and Selby District Council (an agreed draft of which was submitted at Deadline 1, Examination Library ref REP1-006), which states that *"It is agreed that the approach taken to the assessment of cumulative effects in Chapter 17 of the ES (Examination Library Ref: APP-085) is appropriate and proportionate and that the Applicant has taken account of the relevant planned and consented projects and agree with the conclusions to the assessments."*

Table 6-13 - ExA Written Question – CO 1.12

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.12 | Applicant   | <p><b>Pedestrian Bridge</b></p> <p>Paragraph 3.3.10 of Chapter 3 of the ES states that a temporary pedestrian bridge will be constructed to avoid staff having to cross New Road. A Pedestrian Bridge Plan is also submitted, but it does not appear to indicate that persons with mobility issues would be able to navigate the staircases on either side with ease. Provide a response.</p> |

- 6.7.29 Drax Power Station has parking areas available within the Existing Drax Power Station Complex for persons with mobility issues. These will be made available for persons working on the Proposed Scheme during construction to avoid the use of the bridge.
- 6.7.30 Drax Power Station has facilities to accommodate persons with limited mobility including disabled car parking, ramps, toilets, lifts and appropriately designed working space.

Table 6-14 - ExA Written Question – CO 1.13

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.13 | Applicant   | <p><b>Construction Methodology</b></p> <p>Paragraph 6.8.1 of Chapter 6 of the ES states that as the specific construction methodology has not yet been finalised, and the risk assessment has been based on professional judgement and previous experience of major construction works.</p> <p>i) Provide details of previous experience of major construction works that the applicant is drawing professional judgement from.</p> <p>ii) Justify that all likely significant effects have been identified given that the specific construction methodology has not yet been finalised.</p> |

- 6.7.31 With respect to part (i) of the question, Drax has developed significant experience through the delivery of several large construction projects on the Existing Drax Power Station Complex over the years. These include installation of Flue Gas Desulphurisation in the 1990's, which was a £660 million project. Since 2008 Drax has invested heavily in a long term steam turbine upgrade project (>£100 million) which has extended over several years. Recently (over the last five years) Drax has constructed significant infrastructure for the processing, receipt, handling and storage of biomass both in the UK and the US, representing an investment of around £650 million.
- 6.7.32 The ES was prepared by Drax's environmental consultants, WSP. As required by Regulation 14(4)(a) of the Infrastructure Planning (Environmental Impact Assessment) Regulations

2017, section 1.7 of Chapter 1 of the ES (Examination Library ref APP-071) sets out the competency of WSP and the relevant expertise of WSP.

- 6.7.33 With respect, in particular, to paragraph 6.8.1 of the ES, which is the Air Quality chapter, WSP (and acquired companies) have extensive experience of both the assessment of air quality impacts from construction works (based on information provided by contractors and developers), and the in-house monitoring of dust and particulate matter from construction works.
- 6.7.34 WSP assessment work includes construction works for major projects including power generation ranging in scale from small (<10MW) to large (>100MW). WSP also has experience of construction assessments for mixed use developments, road and rail schemes, and industrial facilities. Examples of recent experience include:
- (i) 300MW Power Plant (Hirwaun, South Wales)
  - (ii) 300MW Power Plant (Eye, Suffolk)
  - (iii) Barakah future Nuclear Power Plant (Abu Dhabi)
  - (iv) Tihama Power Plants (Saudi Arabia)
  - (v) Facility D Independent Water and Power plant (IWPP) Facility (Qatar)
  - (vi) East-West Rail (Bicester to Bedford)
  - (vii) Ordsall Chord (Manchester)
  - (viii) M27/M3 Smart Motorways
  - (ix) A1 Birtley to Coalhouse
  - (x) Hereford Southern Link Road
- 6.7.35 In addition, the WSP air quality team has extensive experience of the monitoring of impacts during construction works including linear and non-linear schemes such as:
- (i) Barakah future Nuclear Power Plant (Abu Dhabi) – this work included monitoring of particulate matter on site, monitoring of emissions from construction equipment and dispersion modelling of impacts
  - (ii) Cambourne Pool Redruth Major Scheme (Cornwall) – monitoring of construction compounds in area of contaminated soils
  - (iii) CrossRail (multiple construction compounds around London) – monitoring of construction compounds and site access points in environment of high sensitivity
  - (iv) Barnstaple Gas Works Remediation (Devon) – monitoring of ground works including particulate matter and VOCs
- 6.7.36 The above experience of WSP, with input from Drax's experience, has informed the assessment of likely significant effects and risk associated with construction of the Proposed Scheme.



- 6.7.37 With respect to part (ii) of the question, the risk assessment referred to in this question CO 1.13 followed the Institute for Air Quality Management (IAQM) guidance on the assessment of dust from demolition and construction activities (2014). This is generic guidance based on the qualitative assessment of the potential magnitude of dust emissions and the sensitivity of the local area to dust and particulate matter. The assessment is set out in Appendix 6.2 to the ES (Examination Library ref APP-099).
- 6.7.38 In relation to the sensitivity of the area, this is based on an assessment of background pollutant concentrations (for particulate matter), the proximity of sensitive ecological receptors, and the numbers of properties in distance bands from potential construction works. For the ES, the banding and receptor distances were calculated from the Site Boundary for the Proposed Scheme and, taking account of the sparsely populated surrounding area, the assessment of the area sensitivity is highly unlikely to be affected by any changes to the detailed construction methods.
- 6.7.39 In relation to the assessment of dust risk, the IAQM methodology sets broad criteria to determine the magnitude of dust emissions (small, medium and large) which are independent of the specific methods to be used. Where the criteria are based on the area occupied by construction works, this was assumed to equate to the area within the redline boundary.
- 6.7.40 Overall the methodology is sufficiently precautionary to allow an assessment of the overall risk from dust impacts on the basis of a realistic worst case in terms of dust emissions and proximity to receptors and the level of mitigation required. The risk level is unlikely to be amended when the specific methodology is set out by the appointed contractors, but this is not precluded by the suggested mitigation and the Construction Environmental Management Plan (including the Dust Mitigation Plan) will need approval from SDC before the commencement of works.
- 6.7.41 However, the overarching finding of the IAQM guidance is that with appropriate mitigation all risks from construction works can be mitigated. There are no site specific features that would mean that the mitigation of impacts was in any way constrained by the environment or likely to rendered ineffective. Therefore, the assessment provided in the ES is robust.

Table 6-15 - ExA Written Question – CO 1.14

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.14 | Applicant   | <p><b>Assessment of effects</b></p> <p>Table 6.2, Paragraph 6.2.12 of Chapter 6 of the ES states that the Applicant has agreed with the Environmental Health Officer from Selby District Council of the scoping out of the assessment, of construction and operational traffic. Paragraph 6.2.2 on Page 6-12 provides a commentary regarding the number of trips which have to be generated before a significant effect in ambient pollutant concentrations is identified and explains that the trips generated by both the construction and operation of the Proposed Development are expected to be lower than that threshold. The summary in Section 6.5 states that no likely significant effects will</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>arise during construction work, from dust arising, vehicle exhausts or emissions from construction plant.</p> <p>i) Show how anticipated traffic numbers was determined, and how that data alongside the distance to sensitive receptors was used to determine an absence of likely significant effects to air quality during construction and operation.</p> <p>ii) Explain the extent to which cumulative effects to air quality from increased traffic owing to construction and operation of other known developments has been considered.</p> |

## 6.8 Construction Traffic Impacts

- 6.8.1 With respect to part (i) of the question, the assessment of operational effects from traffic flows was scoped out of the air quality assessment due to limited anticipated change in operational vehicle flows to and from the Power Station Site compared to either the current or future baseline scenarios. This is set out in Paragraph 5.3.13 of the ES Chapter 5 – Transport (Examination Library ref APP-073):
- 6.8.2 *“Stage 3, the operation of the Proposed Scheme (when both Units X and Y are operational), will not represent a significant change when compared to current baseline conditions in areas such as hours of working and the number of staff on site and travelling to/from the Existing Drax Power Station Complex. As such, any impact on the local transport network during this stage of the Proposed Scheme is deemed to be negligible. Furthermore there is expected to be a reduction in HGV and rail deliveries in Stage 3 when compared to the existing situation because there would no longer be a need to transport Pond and Ash Fines to the two coal fired power units being upgraded to gas as outlined in Tables 5-27 and 5-28 later in this chapter.”*
- 6.8.3 The assessment of construction traffic has been split into three stages (Stages 0 – 2), representing the different phases of construction: Site Reconfiguration Works (Stage 0), the construction of Unit X (Stage 1), and the construction of Unit Y (Stage 2).
- 6.8.4 For Stage 0, the assessment of effects from traffic flows was scoped out of the transport assessment due to limited anticipated change in vehicle flow to and from the Power Station Site, as set out in Paragraph 5.3.12 of the ES Chapter 5 – Transport (Examination Library ref APP-073):
- 6.8.5 *“Stage 0, the Site Reconfiguration Works, includes the demolition, removal and relocation of existing facilities at the Power Station Site. The traffic impact on the local transport network is expected to be minimal for this stage as evidenced by the planning application (PP-06688208v1).”*
- 6.8.6 In any event, Stage 0 is now being removed from the Application.
- 6.8.7 Stages 1-2 were considered to represent the worst realistic cases for construction traffic.

- 6.8.8 Traffic data, as AADT HGV movements per quarter for the entire construction period (Stages 1 & 2), are set out in the ES Appendix 5.5 Trip Generation Methodology (Examination Library ref APP-094, Page 5). None of the quarters exceed 100 HGV movements per day (the maximum was 91.5 HGVs/day in Q8). This increase in traffic is below the criteria for determining ‘affected roads’ for the purpose of air quality assessment set out in DMRB HA 207/07 i.e. 200 HDVs as a 2-way AADT flow. HDVs comprise HGVs, together with buses and coaches. There will be no buses/coaches associated with construction works, and as such, taking into account the HGV trip generation, construction traffic impacts did not warrant explicit consideration within the assessment of air quality effects during construction.

## 6.9 Cumulative Impacts

- 6.9.1 With respect to part (ii) of the question, the assessment of cumulative effects is reported in ES Chapter 17 – Cumulative Assessment (Examination Library ref APP-085).
- 6.9.2 Regarding traffic generation, this Chapter states at 17.7.2:
- 6.9.3 *“None of the developments in the short list in Appendix 17.1 were identified during Stage 2 as having the potential to provide cumulative effects, when considered in the context of the Proposed Scheme, and taken forward to Stage 4 assessment. This is based on the assumption that the other developments will generate less than 30 vehicles at the in-scope junctions during the peak hour and are therefore not likely to have a significant cumulative effect during construction.”*
- 6.9.4 Developments that could have the potential to generate cumulative effects on air quality, including from construction and operational traffic, with the Proposed Scheme are identified in ES Chapter 17 – Cumulative Assessment (Examination Library ref APP-085) Table 17-4. This table also shows the proposed mitigation and residual cumulative effects. No significant cumulative effects on air quality were identified as a result of the construction and operation of other known developments.

Table 6-16 - ExA Written Question – CO 1.15

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO 1.15 | Applicant   | <p><b>Buffer from construction activities</b></p> <p>Chapter 9 of the ES refers to a buffer from woodland in Development Parcel B and directs the reader to the outline LBS for where this will be secured. However, whilst the outline LBS refers generally to a buffer of 15m from woodland, it only specifically refers to and shows on Figure 6.7.2 a buffer in Development Parcel A. There is also no reference to a buffer in the outline CEMP or dDCO, although Chapter 9 of the ES Table 9-4 infers that the CEMP will include measures such as the use of fencing to demarcate the construction footprint and protect adjacent ecological features.</p> <p>i) Clarify whether a 15m buffer from construction activities is proposed for all areas of woodland within the Proposed Development.</p> |

| ExA<br>Ref | Question<br>to | Question                                                                                                                                      |
|------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|            |                | <p>ii) Justify that the 15m buffer is adequate.</p> <p>iii) Confirm how buffers referred to in the outline LBS [APP-135] will be secured?</p> |

- 6.9.5 With respect to part (i) of the question, a 15 m buffer to offset construction activities is proposed for all woodlands identified within the Proposed Scheme Site Boundary. Woodlands have been identified as per habitat definitions within the Handbook for Phase 1 Habitat Survey by the Joint Nature Conservation Committee (JNCC) (2016), notably habitat code A1 (see Environmental Statement Figure 9.3, Examination Library ref APP-077). There are three woodlands within the Site Boundary, being North Station Wood and the woodland belt adjoining it from the north west and the section of woodland to the south of Development Parcel A. The revised Outline Landscape and Biodiversity Strategy (OLBS) (Applicant's Document Ref: 6.7, Rev 002 ), submitted at Deadline 2, documents that woodlands should have an offset of 15 m from construction activities (see Offsets and Easements in Appendix 3); this has been updated to cross refer to plans (Specifically Figure 6.7.6 in Appendix 1) that have been revised in the version of the Outline Landscape and Biodiversity Strategy submitted at this Deadline 2 (Applicant's document ref 6.7 Rev 002). Similarly, the CEMP (Examination Library Reference: APP-103) has been updated to include these measures at this Deadline 2.
- 6.9.6 For other woodland adjacent to the Site Boundary, an Arboricultural Protection Method Statement will be produced prior to construction. This will include restrictions on excavation depth and offset distances suitable for the protection of the woodland. The requirements for these measures are set out in the Outline Landscape and Biodiversity Strategy and the Construction Environmental Management Plan which are certified documents (as identified in Schedule 15, table 15 of the draft DCO) secured by the DCO (Requirements 7 and 16 respectively), as described below.
- 6.9.7 With respect to part (ii) of the question, Forestry Commission standing advice (2015) indicates that a 15 m buffer should be applied to ancient woodland to minimise direct and indirect effects from construction activities. The 15 m buffer is conservative in this respect given the fact that North Station Wood and other woodlands are not designated as ancient woodland. Furthermore, British Standard 5837 (2012) states that the maximum radius of the circular Root Protection Area (RPA) of any tree to be protected is 15 m. As a result, the 15 m buffer proposed is more than adequate to provide a barrier to impacts from construction activities.
- 6.9.8 With respect to part (iii) of the question, the buffers and Arboricultural Method Statement referred to in the revised OLBS (Applicant's document ref 6.7 Rev 002, Table 3-1 and Appendix 3 and 5) will be secured through the Outline Landscape and Biodiversity Strategy, which is a certified document as identified in Schedule 15, table 15 of the draft DCO. Implementation of and compliance with the OLBS is secured by requirement 7 of the draft DCO. Revised versions of these documents are submitted at this Deadline 2; revised

Outline Landscape and Biodiversity Strategy (Applicant's document ref 6.7 Rev 002) and revised draft DCO (Applicant's document ref 3.1, Rev 2).

## 7 DRAFT DEVELOPMENT CONSENT ORDER (DDCO)

Table 7-1 - ExA Written Question – DC 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.1 | Applicant   | <p><b>Definition of “Commence” – Part 1 Article 2</b></p> <p><b>General Requirements – Paragraph 2 Part 1 Schedule 2</b></p> <p>The ExA is concerned that this definitions as worded does not sufficiently tie the construction and completion dates of Unit Y. As a result, Unit Y could be constructed at any time after Unit X is commenced, and thus the construction programme and operating time period of Unit Y could fall outside the scope of the ES.</p> <p>i) Justify the approach not to impose a separate commencement and completion requirement on Unit Y in line with the scope and assessment of the ES.</p> <p>ii) Explain how the Secretary of State can be assured, having regard to the dDCO as worded, that Unit Y if commenced, will be restricted to the timescales assessed in the ES.</p> <p>iii) Alternatively, include a new paragraph in Part 1 of Schedule 2 which requires Unit Y to be commenced and completed pursuant to Unit X and within the scope and assessment of the ES.</p> |

- 7.1.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require the Applicant to assess the likely significant environmental effects of a project. The environmental impact assessment process is not intended to give a precise picture of the future. It is an aid to better decision making and should ensure flexibility in the face of any inherent uncertainty.
- 7.1.2 That assessment requires various assumptions to be made; one of which is the start date of the development. Whilst applicants ordinarily assess the first “commencement” and assume that the rest of the project will be built out, there is nothing preventing an applicant either not completing the development or building out part of it at a later point. That “standard” situation is no different from the approach taken by the Applicant to its environmental impact assessment, except that the Applicant’s approach has been more transparent in an attempt to be more realistic about when it anticipates Unit Y would be constructed. The assessment has, therefore, been based on a realistic assumption (a 12 month gap between the construction periods of Unit X and Unit Y). However, there is the possibility that the gap could be longer. This is made clear in Chapter 3 of the Environmental Statement, Site and Project Description (Examination Library ref APP-071) which states “*It is assumed for the purposes of this ES that there would be a gap of a year between construction periods, but this could be longer depending on commercial considerations*” (paragraph 3.2.8).



- 7.1.3 As demonstrated in response to question CO 1.1, the factors informing the environmental assessment are not sensitive to a change in when Unit Y is constructed (see in particular the response to part (i) of question CO 1.1). It follows that there are unlikely to be implications to the ES outcomes, in terms of any materially new or materially different likely significant effects, if the construction of Unit Y did not proceed in line with the assumptions made in the ES. The controls, mitigation, management and monitoring proposed to be put in place and secured through the requirements contained in Schedule 2 to the draft DCO would operate to restrict the future construction, operation and maintenance of the Proposed Scheme to the likely significant effects assessed in the Environmental Statement (which will be a certified document as identified in Schedule 15, table 15 of the draft DCO). It is for this reason that the requirements are drafted so as to either:
- a) Expressly prevent Work Number 2 (Unit Y) or Stage 2 (which incorporates Unit Y) from being commenced until the details secured in the particular requirement have been approved; or
  - b) Restrict any part of the authorised development from being commenced until the details secured in the particular requirement have been approved in respect of that part. So Unit Y could not commence until the necessary approvals have been obtained for Unit Y.
- 7.1.4 As a result, an overly prescriptive approach to start and end dates is neither justified nor required, beyond the standard time limits on implementation of the development (Requirement 2 of Schedule 2 of the draft DCO) and on the exercise of compulsory acquisition powers (Article 21 of the draft DCO). The combined effect of these limitations is to manage and limit the parameters, effects and temporal extent of the Proposed Scheme without the need for a further consenting process or assessment.
- 7.1.5 The Applicant, therefore, does not consider that it is appropriate, necessary or precedent to include requirements in the draft DCO tying the commencement and completion of particular parts of the Proposed Scheme, in this case Unit Y, to the assessment undertaken in the Environmental Assessment to enable a reasoned and sound conclusion, which fulfils the legislative purpose of the environmental impact assessment process as set out in regulations and guidance.<sup>4</sup>
- 7.1.6 This approach also has precedent. The Applicant refers, for example, to the Hornsea One Offshore Wind Farm Order 2014, which authorised three offshore wind generating stations in Work Numbers 1, 2 and 3. The Order only contains one commencement requirement, being the usual requirement that the authorised development must commence no later than the expiration of five years beginning with the date that the Order comes into force (Requirement 1 of Schedule 2). The same approach was also followed in Hornsea Two Offshore Wind Farm Order 2016.

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<sup>4</sup> Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014/52/EU), European Union 2017

Table 7-2 - ExA Written Question – DC 1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.2 | Applicant   | <p><b>“Permitted Preliminary Works” – Part 1 Article 2</b></p> <p>The dDCO [AS-012] subpart(1) defines “<i>permitted preliminary works</i>” as “<i>environmental surveys, geotechnical surveys, intrusive archaeological surveys and other investigations for the purpose of investigating ground conditions, demolition of buildings and removal of plant and machinery</i>”.</p> <p>The ExA considers that “<i>intrusive archaeological surveys</i>” should be approved prior to permitted preliminary works taking place.</p> <p>i) Provide a justified response.</p> <p>ii) Explain why the “<i>demolition of buildings</i>” is required as “<i>permitted preliminary works</i>”</p> |

- 7.1.7 With respect to part (i) of the question, the Applicant has amended Requirement 15 so that whilst permitted preliminary works can be carried out in advance of Requirement 15 being discharged, the intrusive archaeological surveys cannot be carried out. If intrusive archaeological surveys were deleted from the definition of “permitted preliminary works”, then the Applicant could be required to discharge other requirements before it carried out those archaeological surveys, which would be disproportionate and unreasonable.
- 7.1.8 With respect to part (ii) of the question, the Applicant has given careful consideration to where in the draft DCO “permitted preliminary works”, including demolition of existing buildings and structures, would be allowed to be undertaken without restriction. As a result, Requirement 16 of the draft DCO excludes “site clearance” (which the definition of “permitted preliminary works” makes clear includes “vegetation removal, demolition of existing buildings and structures”) from “permitted preliminary works” for the purposes of the submission and approval of the construction environmental management plan (CEMP). This is because the Outline CEMP, which will be a certified document as identified in Schedule 15, table 15 of the draft DCO, and which the CEMP will be in accordance with pursuant to Requirement 16 of the draft DCO, includes measures to manage demolition in order to avoid or minimise any adverse effects, and it was therefore considered that site clearance should not be able to be carried out until the CEMP had been submitted and approved. In addition, Requirement 14 of dDCO submitted at Deadline 2 also excludes “site clearance” from “permitted preliminary works” for the purposes of the submission and approval of a written strategy in relation to ground conditions.
- 7.1.9 In all other instances, where the permitted preliminary works would be allowed to be carried out prior to the discharge of the requirement, such works would not result in likely significant environmental effects requiring management or mitigation to be in place before demolition works are carried out. It is therefore considered appropriate that the permitted preliminary works may be carried out without restriction in accordance with the draft DCO.

Table 7-3 - ExA Written Question – DC 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.3 | Applicant   | <p><b>Definition of “Maintain” – Part 1 Article 2</b></p> <p>While the ExA accepts the need for the Applicant to undertake maintenance works, the ExA is nevertheless concerned that the definition as worded is not sufficiently precise. This is specifically the case where such maintenance works would be allowed <i>“insofar as such activities are unlikely to give rise to any materially new or materially different environmental effects from those assessed in the environmental statement”</i>. As currently worded, the ExA is concerned that maintenance activities could exceed the Rochdale Envelope of the ES.</p> <p>i) Explain what is meant by <i>“materially new or materially different”</i>.</p> <p>ii) Explain where <i>“materially new or materially different”</i> is defined in the dDCO.</p> <p>iii) Explain why the scope of maintenance works should exceed the scope of the ES.</p> <p>iv) Distinguish <i>“materially new or materially different”</i> from <i>“new or different”</i>.</p> <p>v) Who would be the arbiter or assessor that such maintenance works were <i>“new or different”</i> as opposed to <i>“materially new or materially different”</i>, and how this is secured in the dDCO.</p> <p>vi) Explain whether the relevant planning authority would have any role in checking whether maintenance works, individually or collectively, would be <i>“materially new or materially different”</i> and how this is secured in the dDCO.</p> |

- 7.1.10 The definition of "maintain" is deliberately and intentionally open in terms of the activities it includes, in order to fully enable the proactive future operational maintenance of the Proposed Scheme that allows for technological and practice advancement and improvements. However, the environmental standards and performance are controlled and managed with actions and activity restricted by the qualification on the environmental effects of such maintenance and overall terms of consenting within the DCO, thus providing adequate certainty and control, whilst enabling the Applicant to take the benefit of improvements and best practice without the need for formal application change procedure or control that stifles innovation and better practice, operation and delivery.
- 7.1.11 The breadth of the promoted definition of "maintain", has been drafted to directly reflect the nature and context of the Proposed Scheme, which will need to be properly maintained, managed and protected for a period of at least 25 years. The drafting, therefore, reflects this operational period and likely framework of maintenance that will be required whilst enabling technological and practice advancement and improvements within identified environmental performance standards without the disproportionate and unnecessary

administrative process of potential change procedures to enable the ongoing operation and maintenance of the Proposed Scheme.

- 7.1.12 Therefore, some flexibility must be built in to what maintenance of the Proposed Scheme will involve, particularly to keep up with changing standards and controls and advances in technology. It would be entirely wrong to create unnecessary administrative burden and constrain the development in operation and maintenance to old technology and practice. In fact, such an approach could be considered unreasonable and a corruption of the intent of the development consent process. Rather, it is entirely proper and reasonable for the development consent to be drafted, as in this case, so that the benefits of potential improvements can be taken advantage of and fully managed, monitored and controlled. Without that flexibility, further consents may be required, which defeats the purpose of the NSIP regime as being a single consenting regime, that by its very nature needs to be able to consent projects in a way that ensures the undertaker has sufficient powers to utilise future advances in technology and undertake unforeseen maintenance over the lifetime of the development being consented.
- 7.1.13 In addition, and as set out in response to question DCO 1.1, the EIA process involves prediction and assessment on the best available data and information using quantitative and qualitative assessment. Therefore, uncertainty to some extent is an integral and accepted part of project assessment and cannot, and is not intended to give a precise picture of the future. It is therefore inappropriate, and does not fulfil the legislative purpose of the EIA process, to tie the future maintenance of the Proposed Scheme to the assumptions about what maintenance will be undertaken for the purposes of the environmental assessment, which is an aid to decision making having regard to likely significant effects and measures to avoid, manage and mitigate the likely effects.
- 7.1.14 For the purposes of the Proposed Scheme, examples of the activities anticipated to be covered are listed below:
- a) **Maintenance and inspection:** Typical maintenance and inspection activities would be required on the main items of plant (the Gas Turbine, the Steam Turbine and the Heat Recovery Steam Generator (HRSG)). Maintenance operations on each of these is typically on a four yearly cycle, alternating between a 'minor' maintenance activity and a 'major' maintenance activity. The table below describes typical minor and major activities for the main items of plant:

Table 7-4 - Typical Minor and Major Activities for the Main Items of Plant

| Plant Item  | Typical activities associated with minor maintenance                                                                                        | Typical activities associated with minor maintenance                                                                                       |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Gas Turbine | <p>Inspection of blades in the power turbine.</p> <p>Inspection of combustor components.</p> <p>General inspections of associated plant</p> | As per minor maintenance activities, with the addition of a full strip down of the gas turbine and generator rotor removal and inspection. |

| Plant Item    | Typical activities associated with minor maintenance                      | Typical activities associated with minor maintenance                                                                                           |
|---------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Steam Turbine | Inspection of bearings and valves and contact surfaces.                   | Opening up of turbine cylinders to inspect turbine blades.<br><br>Removal of generator rotor,<br><br>Non-destructive testing of turbine blades |
| HRSG          | Visual inspection and external non-destructive testing of critical areas. | As per minor, with additional areas of non-destructive testing                                                                                 |

**Repair / Refurbish / Replaced:** Through the planned maintenance regime and indeed through any unplanned maintenance required due to plant failures, some failures are likely to require plant and equipment, particularly those with moving parts, to be repaired or refurbished or indeed replaced.

- b) **Adjust and Alter:** Through the planning maintenance regime, and indeed outside the planned maintenance regime, there may be a need to adjust or alter elements comprising the Proposed Scheme to respond to changing conditions throughout the life of the Proposed Scheme.
- c) **Remove:** Adjustment and replacement activities will require plant, equipment and material to be removed.
- d) **Reconstruct:** If, for example, a moving part has to be dismantled in order to be repaired or refurbished, then that part will need to be reconstructed.
- e) **Improve:** Technology will improve over the life of the Proposed Scheme and therefore there may be opportunities to "improve" the workings of the plant and equipment by, for example, the removal of an old moving part and replacing it with a new, more efficient moving part.

7.1.15 As is made clear by the definition, these activities apply to any part of the Proposed Scheme, but would not permit the Applicant from removing the whole of the Proposed Scheme and replacing it with an improved version. Furthermore, the development consent granted by virtue of Article 4 and Schedule 1 does not extend beyond the "authorised development" and the Order limits. In addition, the activities are restricted to those that do not give rise to materially new or materially different environmental effects from those assessed in the Environmental Statement.

- 7.1.16 To respond to part (i) of the question and what is meant by “materially new or materially different”, the use of this term is to distinguish from something that is simply “new or different”, but which does not actually change the level of significance of an environmental effect overall (such as from minor to moderate). Something that is “new” or “different” would be material where its effect changes the level of significance of the environmental effect(s) identified in the Environmental Statement as certified by the Secretary of State.
- 7.1.17 It would be unnecessarily restrictive and of no practical sense to say there could be “no new or different” effects, when EIA is a guiding process and the focus and concern (in line with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017) should be on those effects that are likely to be significant (rather than all or any effects).
- 7.1.18 It is, therefore, only necessary, reasonable, appropriate, proportionate and practicable to restrict the maintenance activities to those that are unlikely to give rise to any materially new or materially different environmental effects to that previously assessed and identified in the Environmental Statement. This also follows the Government guidance on the tests for requirements (which are the same as those for planning conditions). Paragraph 206 of the National Planning Policy Framework states “Planning conditions should only be imposed where they are:...reasonable in all other respects.”
- 7.1.19 Referring to “materially new” or “materially different” effects reflects the need to be pragmatic in the drafting of an Order that is governing the maintenance of a plant that has a life of 25 years or more. This is also the reason why the same phrasing is used in Requirement 5 (in the revised draft DCO submitted at this Deadline 2 (Applicant’s document ref 3.1 Rev 2)) for which there is precedent (such as the Progress Power (Gas Fired Power Station) Order 2015), as explained in paragraph 5.16.5 of the Explanatory Memorandum (Examination Library ref APP-021).
- 7.1.20 The control provided by these words means that a maintenance activity that is likely to change the significance level of an effect, or create a new effect which would be significant in EIA terms, would not be permitted by the DCO. In this way, the DCO has the necessary controls in place so that the proposed definition of “maintain” is not a means by which activities are authorised, seeking to circumvent any intended “change” legislative consenting processes. Without this “check” on the future maintenance that the proposed wording provides, there would be no future control mechanism on those activities.
- 7.1.21 The proposed approach is therefore considered an appropriate means of addressing the need for maintenance whilst ensuring that the DCO is implementable and commercially “bankable”. The wording proposed strikes the proportionate balance between the flexibility required to allow the normal operation and maintenance of the Proposed Scheme over its life time, with the need to control the effects of such actions and ensure that any maintenance activity or work is within the extent of the significant effects assessed.
- 7.1.22 With respect to part (ii) of the question, “materially new or materially different” is not defined in the draft DCO. It is a term that is widely used in DCOs (see for example the Eggborough Gas Fired Generating Station Order 2018 where the term is used in the definition of “permitted preliminary works”, Requirement 39 and Schedule 11 without being defined), and can be understood on its face (normal meaning) and, to date, it has not been considered necessary to provide a definition. There is nothing new or different in this proposed DCO that would suggest or merit any change from this established approach.



- 7.1.23 With respect to part (iii) of the question, whilst the maintenance may involve actions which have not been expressly identified within the Environmental Statement, the point of including the phrase “materially new or materially different” is that despite this, the effects resulting from the Proposed Scheme would not be beyond the scope of those effects predicted in the Environmental Statement. In this way, the definition and use of this phrase operate to give the flexibility to allow actions to be undertaken over the life of the plant that have not been foreseen at this stage, whilst restricting those actions based on their environmental effects – in other words maintenance that keeps an effect within moderate would be permitted, but maintenance that changes an effect from moderate to major would not.
- 7.1.24 With respect to part (iv) of the question, please refer to the answer provided for part (i).
- 7.1.25 With respect to part (v) of the question, the relevant planning authority is the enforcing authority, and therefore has the ability to take appropriate action if it considered that the maintenance of the Proposed Scheme was not in accordance with the DCO. Ultimately in the event of any potential breach or action, the burden of proof would fall to the Applicant who would need to stay within the terms of section 160 and section 161 of the Planning Act 2008 (as amended).
- 7.1.26 The response to part (vi) of the question follows from the answer to part (v). The onus is obviously on the Applicant to ensure the operation and maintenance of the Proposed Scheme is carried out in accordance with the DCO, and that any maintenance carried out does not have effects that are “materially new or materially different”. The relevant planning authority, as the enforcing authority, would be able to take appropriate action if it considered the effects of the maintenance were “materially new or materially different”, and to the extent there was any dispute or disagreement between the Applicant and the relevant local planning authority as to whether such effects were simply “new or different” or “materially new or different”, that would be determined as any other issue of fact in an enforcement situation. There is nothing within the terms of the maintenance and operation of the Proposed Scheme that would allow implementation beyond the significant effects set out in the Rochdale Envelope.

Table 7-5 - ExA Written Question – DC 1.4

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.4 | Applicant   | <p><b>Definition of “Maintain” – Part 1 Article 2</b></p> <p>In the Eggborough Gas Fired Generating Station Order 2018, made by the Secretary of State on 20 September 2018, the definition of “<i>maintain</i>” is defined as: “<i>includes inspect, repair, adjust, alter, remove, refurbish, reconstruct, replace and improve any part, but not the whole of the authorised development, to the extent that such activities have been assessed in the environmental statement and “maintenance” and “maintaining” are to be construed accordingly</i>”</p> <p>i) Explain why the Secretary of State should adopt a different and less precise definition as set out in the dDCO or</p> <p>ii) Alter the definition to match the above.</p> |

| ExA Ref | Question to | Question                                                                                                                                                        |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <i>[N.B – If the Applicant intends to alter the definition to reflect the Eggborough CCGT, it may not be necessary to provide a response to DCO 1.3 above].</i> |

- 7.1.27 As explained in response to question DCO 1.3, the Applicant considers that the definition of “maintain” as currently drafted is necessary, reasonable, proportionate and appropriate and as a result it does not propose to alter the definition.
- 7.1.28 It is unreasonable and disproportionate to expect an applicant to identify exactly what maintenance the Proposed Scheme will require over the course of its, at least, 25 year operational life. Maintenance may be required outside planned maintenance outages, and given the very nature of being “unplanned”, when and what the maintenance would involve is clearly an unknown. However, it would be a non-sense for the DCO to prevent such maintenance from being carried out.
- 7.1.29 Instead, the reasonable and proportionate approach is to tie maintenance to the significance of effects, thereby preventing any maintenance activities that are likely to give rise to a change in significance level to that identified in the Environmental Statement.
- 7.1.30 The definition as proposed, responds proportionately and realistically to the operation and maintenance of the Proposed Scheme, in that it allows for activities to be carried out which are currently unable to be predicted. This reflects the reality that not all maintenance and not all innovation and improvements in maintenance techniques can be predicted with complete certainty at this stage. As also set out above with respect to questions DCO 1.1 and DCO 1.3, that is the nature of environmental impact assessment and it follows from that that the maintenance of the Proposed Scheme over an at least 25 year period should not be constrained by the nature of the actions themselves, but by the environmental impact of those actions.
- 7.1.31 The Applicant therefore does not consider the definition should be amended as suggested.

Table 7-6 - ExA Written Question – DC 1.5

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.5 | Applicant   | <p><b>Development consent etc. granted by the Order – Part 2 Article 3</b></p> <p>For the Eggborough Gas Fired Generating Station Order made by the Secretary of State on 20 September 2018, subparagraph (2) also included the words at the end “...for each work number on the works plans”.</p> <p>i) Explain whether such wording is needed here in the interests of clarity and if so, amend accordingly.</p> |

- 7.1.32 The Applicant does not consider that such an amendment is necessary. Unlike with the Eggborough Gas Fired Generating Station Order 2018, the draft DCO includes a definition of the term “limits of deviation” in Article 2, which defines that term to mean “*the limits of deviation shown for each work number on the works plans*”. It would therefore be circular and create unnecessary duplication for Article 3(2) to also include the words “*for each work number on the works plans*”. No amendment has therefore been made.

Table 7-7 - ExA Written Question – DC 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.6 | Applicant   | <p><b>Application and modification of legislative provisions Part 2 Article 8</b></p> <p>The Article seeks to dis-apply the provisions of the Neighbourhood Planning Act 2017 (2017 Act) in respect to Articles 28 (temporary use of land for carrying out the authorised development) and 29 (temporary use of land for maintaining the authorised development). The Applicant’s position as set out in the Explanatory Memorandum that the disapplication is necessary for certainty given the absence of regulations providing any detail is noted.</p> <p>However the Government’s overall approach is understood namely to provide protections for those affected by the use of temporary possession powers. The ExA is concerned that the provisions within the 2017 Act which, amongst other things, specify an absolute period of temporary possession, have not been adequately justified to be dis-applied.</p> <p>i) Provide this justification; or<br/>ii) Amend accordingly.</p> |

- 7.1.33 The Applicant's rationale for this is that the provisions relating to temporary possession in the Neighbourhood Planning Act 2017 have not yet come into force and that regulations required to provide more detail on the operation of the regime have not yet been made (or even consulted on). The Applicant is of the view that it is not currently possible to understand or reflect accurately the temporary possession provisions as intended by Government in respect of DCOs. For example, whilst the notice period is set out in section 20(3) of the Neighbourhood Planning Act 2017, it is not yet known whether this particular provision will apply to DCOs or whether there will be any transitional arrangements.
- 7.1.34 As such, it is considered appropriate to apply the 'tried and tested' temporary possession regime which has been included in numerous DCOs and Orders made under the Transport and Works Act 1992 to date until the relevant provisions in the Neighbourhood Planning Act 2017 come into force.
- 7.1.35 A similar provision was included, for the reasons outlined above, in the Silvertown Tunnel Order 2018 (see Article 3(1)(p)), the Eggborough Gas Fired Generating Station Order 2018 (see Article 26(12)) and the A19/A184 Testo's Junction Alteration Development Consent Order 2018 (see Article 2(7)) and there has been no material change in circumstances since these orders were made that would alter the consideration or circumstances to be taken into account in this application, examination and ultimately consideration and determination. It would be inappropriate and is not for this application to pre-empt, to pre-determine or fetter Government's intended regulation, especially in the absence of draft proposals or consultation.

Table 7-8 - ExA Written Question – DC 1.7

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.7 | Applicant   | <p><b>Application and modification of legislative provisions Part 2 Article 8</b></p> <p>The ExA is concerned that approvals, permissions etc. are not "statutory provisions" and as such Article 8(2) of the dDCO cannot apply or modify statutory provisions pursuant to s120 (5)(a) of the PA2008.</p> <p>i) Explain whether the Article is pursuant to s120 (5)(c) of the PA2008 in which case it must be "necessary or expedient in consequence of a provision of the order or in connection with the order".</p> <p>ii) Confirm the power on which Article 8(2) is based.</p> |

- 7.1.36 Section 120(5)(a) of the Planning Act 2008 ("PA 2008") provides that a DCO may "apply, modify or exclude" a "statutory provision". The term "statutory provision" is defined in section 120(6) to mean "a provision of an Act or an instrument made under an Act". The interpretation of "instrument" is determined from its context, and in the case of section 120(5) the context is not conclusive as to scope. The drafter chose not to refer to subordinate legislation (in the context of "instrument") and therefore must have intended a wider scope. It follows from this that the terms "statutory provision" and "instrument" should be given a wide meaning.

- 7.1.37 This appears to have been the approach taken in the Thames Water Utilities Limited (Thames Tideway Tunnel) Order 2014, where Article 56 introduces Part 1 of Schedule 19 and states that Part 1 “*makes provision applying, modifying and excluding statutory provisions...*”. Paragraph 9(1) of Part 1 of Schedule 19 provides that “*no order, notice or regulation under the Town and Country Planning Act 1990 in relation to the preservation of trees shall have effect in relation to the authorised project*”. So, in making the Order, the Secretary of State was satisfied that a tree preservation order is a statutory provision within the meaning of section 120(6).
- 7.1.38 Any approval, grant, permission, authorisation or agreement made under the Electricity Acts and Planning Acts (as those terms are defined in Article 2 of the draft DCO (Examination Library ref AS-012 and the revised version submitted at Deadline 2)) are therefore “instruments” made under those respective Acts and fall within the term “statutory provision” of section 120(5)(a) of the PA 2008.
- 7.1.39 In any event, and in response to part (i) of the question, in the alternative Article 8(2) is also a provision falling within section 120(5)(c) of the PA 2008. Article 8(2) is considered necessary and expedient in connection with the proposed DCO, in order to address and resolve any overlap with, or conflict between, the DCO (should it be made) and any historic consents and planning obligations under the various Electricity Acts and Town and Country Planning Acts. The provision is particularly necessary in this case given the complex planning history over many years at the Drax Power Station site, since it was first started to be built in 1967, and the provision would therefore operate to make clear that the DCO takes precedence (to the extent of any inconsistency with previous approvals and obligations and the DCO), and is therefore the relevant consent in effect for enforcement purposes.
- 7.1.40 This article has been discussed with SDC and NYCC, who agree with the principle of the article.
- 7.1.41 In response to part (ii) of the question, the Applicant’s position is that Article 8(2) of the draft DCO is authorised pursuant to section 120(5)(a) of the PA 2008 and that in the alternative section 120(5)(c) would also provide such authorisation.

Table 7-9 - ExA Written Question – DC 1.8

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.8 | Applicant   | <p><b>Compulsory acquisition of land Part 5 Article 19</b></p> <p>The ExA is concerned with the clarity of this Article. It is not clear what land is to be acquired particularly if the Applicant is not seeking powers of compulsory acquisition of plots concerning statutory undertakers land or land required for highway works.</p> <p>i) The ExA requests this Article is altered to include an additional subparagraph to identify the plots from the Land Plans which are not subject to this Article and/or other Articles within Part 5 of the dDCO.</p> <p>ii) If the Applicant intends to include a subparagraph identifying plots not subject to this or other Articles within Part 5 of the dDCO, consider</p> |

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                  |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>whether similar wording is required for other Articles within Part 5 of the dDCO.</p> <p>iii) Comment on whether an additional subparagraph(s) is required to dis-apply statutory undertakers land or where this is elsewhere secured in the dDCO.</p> |

- 7.1.42 With respect to part (i) of the question, the Applicant considers that there is no need to include an additional sub-paragraph as requested on the basis that Article 19(1) refers to acquiring compulsorily so much of the Order land as is required. Order land is defined in Article 2(1) as meaning "the land delineated and marked as such on the land plans". In turn, the land plans clearly identify the land that is subject to freehold and leasehold acquisition under Article 19 (i.e. the land shaded pink).
- 7.1.43 With respect to part (ii) of the question, the Applicant does not consider a sub-paragraph identifying which plots are not subject to the article is required for the other articles in Part 5 which give powers of acquisition for the following reasons -
- Article 20 (Statutory authority to override easements and other rights) – The powers in this article are sought for every plot within the Order limits;
  - Article 22 (Compulsory acquisition of rights etc) – As the article makes clear, the powers in this article may be used in relation to land acquired under Article 19 or the Order land specified in Schedule 8 of the draft DCO;
  - Article 23 (Private rights) – The powers in this article apply to the Order limits. Sub-paragraph (1) applies to land subject to Article 19, sub-paragraph (2) applies to land subject to Article 22, sub-paragraph (3) applies to land in the ownership of Drax and sub-paragraph (4) applies to Articles 28 and 29.
  - Article 27 (Rights under or over streets) – This article is clear it relates to streets only;
  - Articles 28 (Temporary use of land for carrying out the authorised development) & 29 (Temporary use of land for maintaining the authorised development) – Both articles are clear as to which land and in what circumstances temporary possession may be taken; and
  - Article 30 (Statutory undertakers) – As with Article 19, Article 30 refers to "the order land", and therefore the same reasoning applies to this article.
- 7.1.44 With respect to part (iii) of the question, the Applicant has inserted reference to Article 30 in Article 19(3) to make it clear that Article 19 is subject to the operation of Article 30.
- 7.1.45 Amendments to the draft DCO as set out in this respect are reflected in the draft DCO submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2).



Table 7-10 - ExA Written Question – DC 1.9

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                              |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.9 | Applicant   | <p><b>Application of the Compulsory Purchase (Vesting Declarations) Act 1981. Modifications of Part 1 of the Compulsory Purchase Act 1965 Part 5 Articles 24 and 26</b></p> <p>Explain what changes were made to these Acts by the Housing and Planning Act 2016.</p> |

- 7.1.46 Sections 182(2) and 202(2) of the Housing and Planning Act 2016 (“HPA 2016”) inserted new sections 5A and 5B in to the Compulsory Purchase (Vesting Declarations) Act 1981. Sections 182(1) and 202(1) of the HPA 2016 inserted new sections 4 and 4A in to the Compulsory Purchase Act 1965. These provisions relate to a time period of 3 years which is not consistent with the time period referred to in Article 21 of the draft DCO. Therefore, there is a need to amend the Compulsory Purchase (Vesting Declarations) Act 1981 and Compulsory Purchase Act 1965 accordingly. The longer time period of 5 years, provided by Article 21, aligns with the time limit for commencement of the development (Requirement 2 of Schedule 2) and is appropriate given the scale of the Proposed Scheme. The 5 year timeframe is also in line with the model provisions.
- 7.1.47 Section 186(3) of the HPA 2016 inserted new section 11A into the Compulsory Purchase Act 1965. These provisions relate to further notices required to be served on a newly identified person and require slight amendment in Article 26 of the draft DCO to fit properly into the DCO context, so that the provisions relate to taking possession under section 11 of the Compulsory Purchase Act 1965 (rather than under other powers).

Table 7-11 - ExA Written Question – DC 1.10

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.10 | Applicant   | <p><b>Statutory undertakers Part 5 Article 30</b></p> <p>i) Provide an update on whether it is expected that any representations made by statutory undertakers will have been withdrawn by the end of the Examination.</p> <p>ii) If not, provide justification (having regard to the specified matters within s127) as to why the Secretary of State will be able to include this Article.</p> |

- 7.1.48 The Applicant can provide the following updates on the representations received:-
- National Grid Electricity Transmission plc and National Grid Gas plc (together “National Grid”):** a representation was received from National Grid on 27 February 2018 before submission of the Application. National Grid has also made a relevant

representation, received by the Planning Inspectorate on 29 August 2018. As set out in the response to question CA 1.2, the Applicant is in discussions with National Grid and it is anticipated that the representation will have been withdrawn by the end of the Examination.

- b) **Vodafone Limited:** Vodafone has not submitted a relevant representation. However, before submission of the Application, Vodafone Limited submitted a stopping up objection on 23 March 2018. As set out in the response to question CA 1.2, the Applicant is in discussions with Vodafone, and it is anticipated that this objection will have been withdrawn by the end of the Examination.
- c) **Yorkshire Water:** Yorkshire Water has not submitted a relevant representation. Despite this, the Applicant has undertaken meaningful discussions with Yorkshire Water to confirm if it has any apparatus or owns any land within the vicinity of the Proposed Scheme. As set out in the response to question CA 1.2, Yorkshire Water has confirmed that the protective provisions included in the draft DCO (Examination Library ref AS-012) are acceptable.
- d) **Northern Powergrid Limited:** Northern Powergrid has not submitted a relevant representation. However, an objection to the Proposed Scheme was submitted by Northern Powergrid Limited on 9 January 2018. As set out in the response to question CA 1.2, the Applicant is in discussions with both Northern Powergrid Limited and Northern Powergrid (Yorkshire) plc and it is anticipated that the objection will have been withdrawn by the end of the Examination.
- e) **Environment Agency:** Whilst the Environment Agency has made a relevant representation and is listed as a "relevant statutory undertaker" in Appendix 1 to the Scoping Opinion adopted by the Secretary of State, the Environment Agency does not have an interest in land within the Order limits and it is not proposed to acquire any land or rights over land from the Environment Agency. Its representation is submitted in its capacity as a statutory consultee, rather than as a statutory undertaker.
- f) **NATS Limited** – in its relevant representation, NATS Limited confirmed "*NATS anticipates no impact from the proposal and accordingly has no comments to make on the application*". Therefore, the Applicant considers there is no representation to withdraw before the end of the Examination.
- g) **Canal and River Trust** – Whilst the Canal and River Trust made a relevant representation, this was in its capacity as the harbour authority for the River Ouse. The Canal and River Trust does not have an interest in land within the Order limits and it is not proposed to acquire any land or rights over land from the Canal and River Trust. In any event, the Trust does not object to the Proposed Scheme.

7.1.49 Section 127 of the Planning Act 2008 only applies to National Grid and Northern Powergrid Limited. As set out in the Explanatory Memorandum submitted as part of the Application, Article 30 is subject to the Protective Provisions included at Schedule 12 of the draft DCO and similar wording has been used in made Orders for gas fired generating stations, including the Wrexham Gas Fired Generating Station Order 2017. The inclusion of Protective Provisions protecting both National Grid and Northern Powergrid mean that the Secretary of State can be satisfied that there would be no serious detriment to the carrying on of their respective undertaking (as required under section 127(3) and section 127(6)).

7.1.50 However, as stated, it is the Applicant's intention that there will be no outstanding objections from National Grid or Northern Powergrid by the end of the Examination.

Table 7-12 - ExA Written Question – DC 1.11

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                            |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.11 | Applicant   | <p><b>Apparatus and rights of statutory undertakers in streets Part 5 Article 31</b></p> <p>Provide justification as why the Secretary of State should be satisfied that the extinguishment or removal is necessary for the purpose of carrying out the development to which the Order relates.</p> |

- 7.1.51 Article 31 makes provision in respect of the apparatus and rights of statutory undertakers in streets which are temporarily altered or diverted or where use is temporarily prohibited or restricted. This article doesn't relate to extinguishment or removal.
- 7.1.52 Article 30, however, does provide for the acquisition of land belonging to statutory undertakers within the Order land, and includes a power to move the apparatus of those statutory undertakers and to extinguish their rights. This power is required with respect to the Order land in order to ensure the delivery and operation of a nationally significant infrastructure project is not unnecessarily delayed. Operation of this article is subject to the Protective Provisions in Schedule 12 of the draft DCO, and that the model provision has been amended so as to allow for the suspension of rights of a statutory undertaker (for example where land is being temporarily used under the terms of the Order) rather than just extinguishment. The Applicant will not, therefore, be able to extinguish rights or remove any apparatus belonging to a statutory undertaker without first complying with the Protective Provisions, which effectively require the Applicant to provide "alternative apparatus" before exercising the powers contained in the DCO.

Table 7-13 - ExA Written Question – DC 1.12

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                            |
|----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.12 | Applicant   | <p><b>Defence to proceedings in respect to statutory nuisance Part 7 Article 38</b></p> <p>i) Explain whether the Article requires updating to reflect that Section 65 (noise exceeding registered level) of the Control of Pollution Act 1974 was repealed by the Deregulation Act 2015).</p> <p>ii) Ensure all statutory references are updated in this dDCO.</p> |

- 7.1.53 The Applicant agrees that Article 38 requires updating in response to the question, and the draft DCO has been amended accordingly.
- 7.1.54 All statutory references in the draft DCO are up to date.

Table 7-14 - ExA Written Question – DC 1.13

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.13 | Applicant   | <p><b>Temporary Construction Areas – Schedule 1</b></p> <p>Schedule 1 of the dDCO lists those works that form part of the authorised development. A number of works are temporary. Of note are the required construction laydown areas and the pedestrian footbridge. However, it is not clear from the dDCO how the temporary nature and time limit for their subsequent removal are secured. Clarify.</p> |

- 7.1.55 The temporary works included as part of the authorised development in Schedule 1 of the draft DCO are numbered works 6C & 6D (construction laydown areas in connection with the AGI), 7B (construction laydown area in relation to the Gas Pipeline), 9 (construction laydown areas and temporary pedestrian bridge), and 14 (the passing place). The temporary nature of those works and their subsequent removal is secured through requirements related to the reinstatement of the areas upon which these works are situated. The reinstatement of these areas, including the time limits for such reinstatement, is secured by requirements to the draft DCO which secure the implementation of the Construction Environmental Management Plan (CEMP) and the Landscape and Biodiversity Strategy.
- 7.1.56 The Outline CEMP (Examination Library ref APP-133, a revised version of which has been submitted at this Deadline 2 (Applicant's document ref 6.5, Rev 002)) at paragraph 3.6.1 sets out mitigation measures to be undertaken during construction in order to specifically limit impacts on landscape and visual amenity. These measures include:
- a) Spreading of topsoil, reseeding and planting within the Project Site and adjoining areas that are to be reinstated as soon as possible after sections of work are complete;
  - b) Management of all reinstated area(s) in accordance with a 25 year aftercare plan detailed in the outline Landscape and Biodiversity Strategy to help ensure full and successful establishment of the planting in the opinion of the relevant planning authority; and
  - c) The prompt reinstatement of temporary construction areas when no longer required, notably upon completion of the Gas Pipeline installation.
- 7.1.57 At paragraph 4.4.1 of the Outline CEMP, it is also confirmed that "[a]ll vegetation clearance and reinstatement will be undertaken in line with the Landscape and Biodiversity Strategy".
- 7.1.58 The Outline Landscape and Biodiversity Strategy (Examination Library ref APP-135, a revised version of which has been submitted at this Deadline 2 (Applicant's document ref 6.7, Rev 002)) provides more detail as to how each of the areas used temporarily during construction will be reinstated and the timing for each.

- 7.1.59 Appendix 5 - Detailed Proposed Mitigation Measures Linking To Compensation Areas, section entitled "Development Parcel J - Reinstatement of arable land associated with the Gas Pipeline" relates to the reinstatement of arable land along the Gas Pipeline, including that this will occur during Stage 1 of the Proposed Scheme, when the Gas Pipeline (as well as the Unit X, the battery storage facility for Unit X, the GRF and AGI) would be constructed. More specifically the strategy states *"Works would be undertaken within 12 months of completion of the Gas Pipeline and it is expected that such works would be phased, with land reinstated immediately after completion of specific sections of the pipeline during Stage 1."* The strategy makes clear that the passing place is treated as being part of the Gas Pipeline.
- 7.1.60 Appendix 5, section entitled "Development Parcel K- AGIs" relates to the AGI. The whole area of the AGI will not be reinstated, as part of the works there include the permanent AGI, access roads and fencing. However, these paragraphs set out the reinstatement and planting that will occur at the AGI. The planting and associated works would be undertaken during Stage 1 following completion of the construction of the AGI.
- 7.1.61 Appendix 5, under section entitled "Stage 2", relates to Development Parcels A and B (as shown on Figure 1-3 in Chapter 1 of the Environmental Statement (Examination Library ref APP-069)), which are the construction laydown areas comprising Work Numbers 9A (the northern part of which aligns with part of Development Parcel B) and 9B (which aligns with Development Parcel A) in Schedule 1 of the draft DCO and on the works plans. Reinstatement of these areas is discussed as occurring during Stage 2, which is during the period when Unit Y is constructed. The strategy refers to the reinstatement of hedgerow planting and some hedgerow trees lost as a consequence of the creation of a temporary access and footbridge during construction. The reinstatement is said to occur during Stage 2 once Unit Y has been completed.
- 7.1.62 Requirement 7 to the draft DCO (Examination Library ref AS-012, a revised version of which is submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)) secures the approval and implementation of the detailed Landscape and Biodiversity Strategies (a Strategy is to be submitted prior to each of Stage 1 and Stage 2), in substantial accordance with the Outline Landscape and Biodiversity Strategy (which is itself a certificate document as identified in Schedule 15, table 15 of the draft DCO). The details to be submitted for approval include an implementation timetable. The requirement also requires the implementation of the approved strategies.
- 7.1.63 Similarly, requirement 16 of the draft DCO secures the submission, approval and implementation of the CEMP, in substantial accordance with the Outline CEMP (which is itself a certificate document as identified in Schedule 15, table 15 of the draft DCO). Again, more than one CEMP could be submitted, as the requirement prevents any part of the authorised development, save for the permitted preliminary works (except for site clearance), from commencing until a CEMP for that part has been submitted for approval.

7.1.64 It is also noted that for much of the land along the Gas Pipeline and at the AGI (the land shown yellow on the Land Plans (Examination Library ref AS-010)) only temporary possession powers are sought as neither that land, nor rights over that land, are needed permanently. The draft DCO only authorises the temporary possession of such land pursuant to Article 28 of the draft DCO, for the purpose specified in relation to that land in column (2) of the table in Schedule 10 (land of which temporary possession may be taken) of the draft DCO. The purposes listed in column 2 of the table in Schedule 10 are clearly only related to:

- The temporary use as laydown, construction compound, construction use and accesses required to facilitate construction of the Gas Pipeline (Work No. 7) and the AGI (Work No. 6);
- The temporary use for the improvement, reinstatement, and retention of existing planting to facilitate construction of the Gas Pipeline; and
- The temporary use as vehicle, plant and machinery passing place as part of Work No. 14 (the passing place) to facilitate construction of the Gas Pipeline and the AGI.

7.1.65 These provisions of the draft DCO therefore operate to ensure the removal of temporary works from these areas upon the completion of the Gas Pipeline and AGI. It would be outside of the terms of the draft DCO if land required temporarily was held and used for any other purpose than consented within the draft DCO. Therefore, once works and temporary use are complete the obligation will be to reinstate the land as stated on the face of the draft DCO, there is no ability to keep land and use it beyond the need and requirements set out within the order.

7.1.66 In this way both the temporary possession and the reinstatement of the land upon which temporary works are carried out are secured by the draft DCO. This has the effect of ensuring the cessation of the temporary works and the removal of the infrastructure associated with those temporary works, as this is essential in order to allow the works for the reinstatement of those areas and in order to comply with the restrictions on the use of temporary possession powers.

Table 7-15 - ExA Written Question – DC 1.14

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.14 | Applicant   | <p><b>Notice of carrying out of the site reconfiguration works under another permission Schedule 2 Part 1 Requirement 3</b></p> <p>At the Preliminary Meeting, the Applicant stated that the ‘Stage 0’ works were no longer being sought for the Proposed Development.</p> <p>In pursuance of written question CO 1.6 and in advance of such formal notification being submitted in the Examination, confirm whether this Requirement 3 is to be deleted and what other Articles and Schedules require amending.</p> |



- 7.1.67 At this Deadline 2, the Applicant has submitted an amendment to the DCO Application to remove the Site Reconfiguration Works ("Stage 0") from the Proposed Scheme. As a result, revisions have been made to the draft DCO submitted at this deadline (Applicant's document ref 3.1 Rev 2) to facilitate this amendment.
- 7.1.68 The amendments include the deletion of Requirement 3. Other amendments resulting from the removal of Stage 0 are:
- Amendment to definition of "authorised development" as this no longer includes the site reconfiguration works;
  - Amendment to definition of "commence" as this definition no longer needs to specifically address the site reconfiguration works;
  - Deletion of definitions for (and reference to) "main development" and "site reconfiguration works", as there is no longer a need to distinguish between the "main development" and "site reconfiguration works";
  - Amendment to definition of "requirements", as all requirements now relate to the authorised development, and are not categorised based on whether they are applicable to the main development or site reconfiguration works;
  - Deletion of "site reconfiguration works plans";
  - Deletion of Work Number 15 in Schedule 1, which was the site reconfiguration works;
  - Deletion of Part 3 of Schedule 2, which was the requirements related only to the site reconfiguration works;
  - Deletion of Part 4 of Schedule 13, which was the parameters for the site reconfiguration works; and
  - Deletion of Schedule 15 which was the site reconfiguration works plans.

Table 7-16 - ExA Written Question – DC 1.15

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.15 | Applicant   | <p><b>The use of "save for the permitted preliminary works" Schedule 2 All relevant Requirements</b></p> <p>The ExA is concerned that in some cases, allowing all permitted preliminary works to take place prior to the submission of a particular requirement could undermine the very requirement sought for approval. Specifically, Requirements 14 (Ground Conditions) and 16 (Construction and Environmental Management Plan (CEMP)) are not sufficiently precise in permitting specific investigation works to inform the Phase 2 geo-technical reports and CEMP respectively.</p> <ol style="list-style-type: none"> <li>Justify the approach; or</li> <li>Amend the Requirements.</li> </ol> |

- 7.1.69 The Applicant's response to question DCO 1.2 is relevant to this question, in terms of the general approach to considering the requirements for which it was appropriate to exclude the permitted preliminary works.
- 7.1.70 In the revised version of the draft DCO submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2), Requirement 14 has been amended so that demolition of existing structures, environmental surveys, geotechnical surveys and other investigations for the purpose of assessing ground conditions have been removed from "permitted preliminary works".
- 7.1.71 Regarding Requirement 16, "site clearance" has been excluded from "permitted preliminary works" for the purposes of the submission and approval of the construction environmental management plan (CEMP). This is because the Outline CEMP, which will be a certified document as identified in Schedule 15, table 15 of the draft DCO, and which the CEMP will be in accordance with pursuant to Requirement 16 of the draft DCO, includes measures to manage demolition in order to avoid or minimise any adverse effects, and it was therefore considered that site clearance should not be able to be carried out until the CEMP had been submitted and approved.

Table 7-17 - ExA Written Question – DC 1.16

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                               |
|----------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.16 | Applicant   | <p><b>Ground conditions</b></p> <p>The Environment Agency in its RR states that the wording of this Requirement needs amending because it is insufficient to protect controlled waters. Provide a response and if necessary amend the Requirement.</p> |

- 7.1.72 The Applicant has amended this requirement in response to the Environment Agency's relevant representation. This requirement is now Requirement 14 in the draft DCO submitted for this Deadline 2 (Applicant's document ref 3.1 Rev 2).

Table 7-18 - ExA Written Question – DC 1.17

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.17 | Applicant   | <p><b>Archaeology</b></p> <p>Requirement 15 (archaeology) of the dDCO would permit all permitted preliminary works and in particular permit uncontrolled archaeological works before the written scheme of investigation is submitted. The ExA considers excluding permitted preliminary works from the submission of the written scheme of investigation could undermine it. The ExA considers no permitted preliminary works take place prior to the submission of the written scheme of investigation.</p> <p>i) Provide a response; or</p> |

| ExA Ref | Question to | Question                               |
|---------|-------------|----------------------------------------|
|         |             | ii) Amend the Requirement accordingly. |

7.1.73 As noted in response to question DCO 1.2, the revised version of the draft DCO submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2) excludes "intrusive archaeological surveys" from "permitted preliminary works" in respect of Requirement 15.

7.1.74 The Applicant considers that it is appropriate for all other actions included in the definition of "permitted preliminary works" to be carried out prior to the submission and approval of the written scheme of investigation pursuant to Requirement 15, as it is not anticipated that such actions will adversely affect archaeological features.

Table 7-19 - ExA Written Question – DC 1.18

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                              |
|----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.18 | Applicant   | <p><b>Absence of Highway Works</b></p> <p>North Yorkshire County Council in its RR refers to the provision for a temporary car park and footway over New Road for construction traffic associated with the Proposed Development.</p> <p>Indicate how this is secured in the dDCO.</p> |

7.1.75 The temporary car park to the east of New Road is part of Work Number 9B in Schedule 1 to the draft DCO, and the pedestrian footbridge is part of Work Number 9A (which is largely located on the west of New Road, but which also crosses New Road). There is also some temporary car parking included within Work Number 9B. These temporary aspects of the Proposed Scheme are therefore part of the development proposed to be authorised by the DCO.

7.1.76 The relevant articles in the draft DCO securing and controlling the provision of the temporary car parking and pedestrian footbridge are:

- a) Article 3(2) which provides that each numbered work may only be situated within the corresponding numbered area shown on the works plans and within the limits of deviation for each work number on the works plans. This secures the general location of the car parking and footbridge.
- b) Articles 9 and 27 provide specific powers to authorise the construction of the pedestrian footbridge over the highway. It is noted that no part of the footbridge would attach to the highway itself, so no further powers are needed in that respect.
- c) Requirement 6(9) requires the pedestrian bridge to be carried out in accordance with the pedestrian bridge plan (which is a certified document).

- d) Requirement 6(10) requires the authorised development to be carried out in accordance with the relevant parameters in Schedule 13 (design parameters). Schedule 13 includes temporary construction parameters in Part 1, being the parameters for the temporary pedestrian footbridge.
- e) Schedules 3, 4 and 5 identify (by reference to the access and rights of way plans) the new temporary construction accesses to be built with respect to the temporary construction laydown area and car parking in connection with Work No. 9B. Articles 9, 10 and 11 of the draft DCO provide the powers pursuant to which the new temporary accesses are constructed, operated and maintained. Requirement 10 also includes controls around the detail of the accesses and their reinstatement.

Table 7-20 - ExA Written Question – DC 1.19

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                        |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.19 | Applicant   | <p><b>Absence of separate Site Waste Management Plan</b></p> <p>The Environment Agency in its RR states that the Site Waste Management Plan should be specifically referred to in Requirement 16 of the dDCO. Provide a justified response.</p> |

- 7.1.77 A Site Waste Management Plan ("SWMP") will be produced as part of the Construction Environmental Management Plan ("CEMP") (Examination Library ref APP-133, a revised version of which has been submitted at this Deadline 2 (Applicant's document ref 6.5 Rev 002)). The proposed content and structure of the SWMP is set out in section 3.10 of the Outline CEMP. Requirement 16 of the draft DCO (Examination Library ref AS-012, a revised version of which is submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)) secures the approval and implementation of the CEMP, and therefore the SWMP. The Outline CEMP will be a certified document as identified in Schedule 15, table 15 of the draft DCO. A further requirement is therefore not considered necessary.

Table 7-21 - ExA Written Question – DC 1.20

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                  |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.20 | Applicant   | <p><b>Absence of Requirement for Protected Species</b></p> <p>The ExA notes that no Requirement is included for survey works to establish whether any protected species are present on any part of the land affected or likely to be affected by the authorised development. Explain whether such a Requirement needs to be inserted.</p> |

- 7.1.78 The Outline Landscape and Biodiversity Strategy (Examination Library ref APP-135, a revised version of which has been submitted at this Deadline 2 (Applicant's document ref 6.7 Rev 002)) secures the carrying out of pre-construction surveys "to re-assess the ecological baseline and to determine if any additional ecological mitigation is required" (in Appendix 3 - Impact Avoidance Requirements, under the heading "Pre-Construction Surveys"). Under the same section the strategy further states that "The scope of each walkover would be defined on a case by case basis in consultation and with the agreement of Drax, NYCC and SDC" and "The results of the pre-construction walkovers would inform the detailed delivery of construction phase ecological mitigation". Aspects to be monitored during the surveys include "Any changes in habitat condition or other evidence indicating previously unrecorded protected species could be present".
- 7.1.79 Requirement 7 to the draft DCO (Examination Library ref AS-012, a revised version of which is submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)) secures the approval and implementation of the detailed Landscape and Biodiversity Strategies (a Strategy is to be submitted prior to each of Stage 1 and Stage 2), in substantial accordance with the Outline Landscape and Biodiversity Strategy, which itself will be a certified document as identified in Schedule 15, table 15 of the draft DCO. The requirement also requires the implementation of the approved strategy(ies). A further requirement is therefore not considered necessary.

Table 7-22 - ExA Written Question – DC 1.21

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                      |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.21 | Applicant   | <p><b>Absence of Requirement for the Control of Noise and Vibration from Construction</b></p> <p>The ExA notes that no Requirement is included for the monitoring and control of noise and vibration during the construction of the relevant part of the authorised development. Explain whether such a Requirement needs to be inserted.</p> |

- 7.1.80 Chapter 7 of the ES, Noise and Vibration (Examination Library ref APP-075) has assessed the likely noise and vibration effects of the Proposed Scheme during construction and has concluded that the effects would be negligible.
- 7.1.81 The assessment took into account embedded mitigation set out within the Outline CEMP at section 4.3 (Examination Library ref APP-133, a revised version of which has been submitted at this Deadline 2 (Applicant's document ref 6.5, Rev 002)). The submission, approval and implementation of the CEMP are secured by Requirement 16 of the draft DCO (Examination Library ref AS-012, a revised version of which is submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)).
- 7.1.82 With the DCO requirements in place, securing compliance with the Outline CEMP, which itself will be a certified document as identified in Schedule 15, table 15 of the draft DCO, it is not considered that any further requirement is necessary.

Table 7-23 - ExA Written Question – DC 1.22

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                   |
|----------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.22 | Applicant   | <p><b>Absence of Requirement for the Restoration of Land Used for Temporary Construction</b></p> <p>The ExA notes that no Requirement is included for the land, particularly Work No 7 (gas pipeline) during the construction to be restored. Explain whether such a Requirement needs to be inserted.</p> |

- 7.1.83 The Applicant's response to question reference DCO 1.13 provides a response to this question. That response explains how the restoration and reinstatement of the land used temporarily for construction (along the Gas Pipeline, the AGI, construction laydown and the pedestrian footbridge) is secured by way of the provisions of the Outline Landscape and Biodiversity Strategy (which is itself a certificate document as identified in Schedule 15, table 15 of the draft DCO) ((Examination Library ref APP-135, a revised version of which has been submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)) and the Outline CEMP (also a certified document, as identified in Schedule 15, table 15 of the draft DCO) (Examination Library ref APP-133). Those strategies are in turn secured by Requirements 7 and 16 of the draft DCO respectively. In addition, the temporary possession powers in the draft DCO only authorise the temporary possession of much of the land along the Gas Pipeline and at the AGI (the land shown yellow on the Land Plans (Examination Library ref AS-010)) pursuant to Article 28 of the draft DCO, for the purpose specified in relation to that land in column (2) of the table in Schedule 10 (land of which temporary possession may be taken) of the draft DCO. The purposes listed in column 2 of the table in Schedule 10 are clearly only related to temporary works associated with the AGI and Gas Pipeline.
- 7.1.84 The combined effect of these requirements is that land used temporarily during construction must be vacated once that work is completed, and reinstatement of that land must occur in accordance with the Landscape and Biodiversity Strategy and the CEMP.
- 7.1.85 On this basis, it is considered that the restoration and reinstatement of the land along the Gas Pipeline, as well as other land used temporarily during construction, are adequately secured, and that no further requirement is necessary.

Table 7-24 - ExA Written Question – DC 1.23

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                            |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.23 | Applicant   | <p><b>Absence of Requirement for Employment, Skills and Training</b></p> <p>North Yorkshire County Council in its RR states that the construction phase of the Proposed Development will create opportunities to train and employ local people.</p> |



| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |             | <p>Section 14.9 of Chapter 14 of the ES set out the direct and indirect employment opportunities, per phase, the Proposed Development would generate.</p> <p>The ExA notes that a proposed Heads of Terms would obligate the Applicant to offer apprenticeships and to submit a Local Employment Scheme.</p> <p>i) Explain why the promotion of local employment, skills and training is regulated by a planning obligation as opposed to being a Requirement in the dDCO.</p> <p>ii) If a legal agreement is to be pursued, set out a timetable as to when it intends to be signed and submitted into the Examination.</p> |

7.1.86 With respect to part (i) of the question, the promotion of local employment, skills and training has been proposed as a planning obligation for the following reasons:

- a) The local employment scheme differs from the types of mitigation secured by requirements to the DCO as its successful delivery relies on Selby District Council and North Yorkshire County Council working with the Applicant. The Applicant therefore seeks to secure these obligations by way of a legal agreement under section 106 of the Town and Country Planning Act 1990 in order to place obligations on the Councils to work with Applicant in relation to the Local Employment Scheme. It is considered this could not be achieved by way of a DCO requirement.
- b) Securing the local employment scheme by planning obligation enables the scheme to be more flexible and responsive, as revisions can be made over time, to reflect any changes in circumstances or how employment advertising is carried out. This would be more difficult if secured by a requirement to the DCO.
- c) Whilst the obligations in relation to apprenticeships could be secured by a requirement to the DCO, the Applicant considers that it is more appropriate to keep those obligations with the local employment scheme obligations, and that both should therefore be contained in the section 106 agreement.

7.1.87 The Applicant has had discussions with SDC and NYCC as to whether these obligations should be included as requirements to the DCO or as planning obligations, and the parties have agreed that planning obligations are appropriate in this instance. A similar approach has been taken for other DCOs, see for example The Hirwaun Generating Station Order 2015, which included a section 106 agreement to secure obligations in relation to apprenticeships and measures to assist local businesses.

7.1.88 With respect to part (ii) of the question, a draft legal agreement has been prepared by the Applicant and has been discussed with SDC and NYCC. It is anticipated that it will be agreed, completed and submitted into the Examination on or before the final deadline.

Table 7-25 - ExA Written Question – DC 1.24

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.24 | Applicant   | <p><b>Procedure for discharge of requirements</b></p> <p>Paragraph 4(2)(b) of Schedule 11 of the dDCO states that “<i>the Secretary of State is to appoint a person within twenty business days...</i>”. The ExA considers that it is not for the dDCO to dictate to the Secretary of State the time period in which they must undertake this action. In any event, the ExA questions the enforceability of this paragraph if it were not complied with.</p> <p>In the Eggborough Gas Fired Generating Station Order 2018, made by the Secretary of State on 20 September 2018, a similar obligation stated that “<i>the Secretary of State is to appoint a person as soon as reasonably practicable...</i>”. The ExA requests this paragraph is amended.</p> |

- 7.1.89 The Applicant has included the words “*as soon as is practicable after receiving the appeal documentation, the Secretary of State must appoint a person to determine the appeal...*” in the revised version of the draft DCO submitted at Deadline 2 (Applicant’s document ref 3.1 Rev 2).

Table 7-26 - ExA Written Question – DC 1.25

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.25 | Applicant   | <p><b>Procedure for discharge of requirements</b></p> <p>Paragraph 10 of Schedule 11 of the dDCO states that “<i>the appointed person may or may not be a member of the Planning Inspectorate but must be a qualified town planner of at least ten years’ experience</i>”. The ExA considers that it is not for the dDCO to dictate to the Secretary of State whom they should appoint in such circumstances. In any event, the ExA questions the enforceability of this paragraph if it were not complied with.</p> <ul style="list-style-type: none"> <li>i) Delete the paragraph; and</li> <li>ii) Amend the referencing in paragraph 11 accordingly.</li> </ul> |

- 7.1.90 This deletion has made in the version of the draft DCO submitted at Deadline 2 (Applicant’s document ref 3.1 Rev 2).

Table 7-27 - ExA Written Question – DC 1.26

| ExA Ref  | Question to      | Question                                                                                                                                   |
|----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.26 | Statutory Bodies | <b>Protective Provisions</b><br><b>Schedule 12</b><br>Comment on the adequacy of Schedule 12 (Protective Provisions) in the dDCO [AS-012]. |

No response from the Applicant.

Table 7-28 - ExA Written Question – DC 1.28

| ExA Ref  | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DCO 1.27 | Applicant   | <b>Design parameters</b><br>Schedule 13, of the dDCO states that the maximum stack heights for the Proposed Development should be 120m. However, as a stack height of 120m has been applied to the modelling of emissions used to inform the ES the ExA considers that any ambiguity that the stack height could be lower would fall outside the scope of the ES and the assessment made in the HRA report.<br>i) Justify the approach taken, or<br>ii) Amend to read a 'minimum of 120m'.<br>iii) Ensure your response here is reconciled with your response to question AQ 1.11 |

- 7.1.91 The Applicant is content to amend Schedule 13 of the draft DCO as suggested in part (ii) of the question. This amendment has not been made for the draft DCO submitted at this Deadline 2 as the Applicant considers that a maximum also needs to be referred to. The Applicant is currently reviewing the EIA assessment to ensure the maximum inserted falls within the parameters of the ES. The maximum and minimum parameters will therefore be picked up in the next draft of the DCO.

## 8 FLOOD RISK AND WATER RESOURCES

Table 8-1 - ExA Written Question – FW 1.1

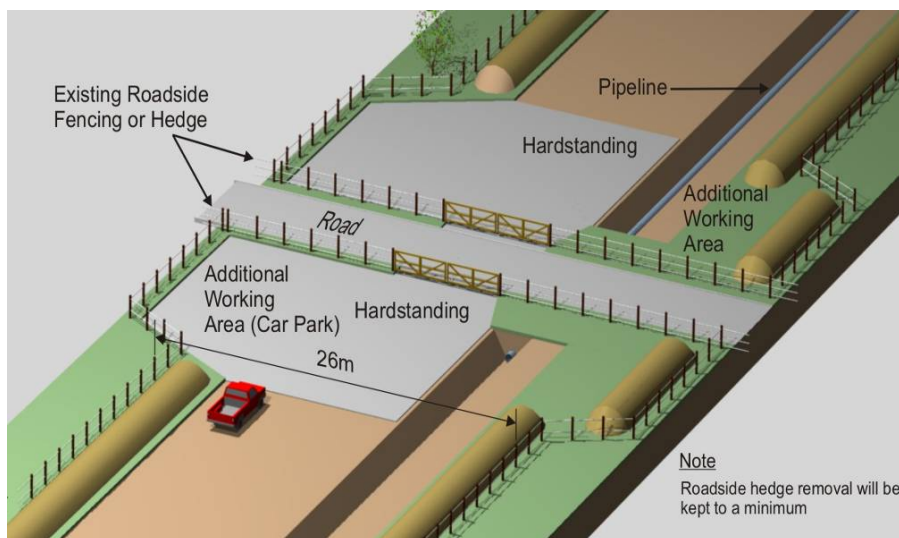
| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FW 1.1  | Applicant   | <p><b>Gas pipeline crossings techniques</b></p> <p>Paragraph 3.3.19 of Chapter 3 of the ES states that the Gas Pipeline will likely be constructed using primarily open cut construction techniques. It is noted that Paragraph 12.9.2 of Chapter 12 of the ES [APP-080] has made an assessment with particular assumptions, such as it is likely that the gas pipeline crossings under watercourses, drains and hedgerows would be undertaken using trenchless techniques. It also includes at Section 9.7, further strategies should trenchless crossing not be used. Yet, the term “likely to be used” is also stated.</p> <p>The ExA is concerned that the wordings “consider the use of trenchless crossing techniques” and “likely to be used” are insufficiently precise, that the Applicant should commit to using trenchless crossing techniques for the constraints.</p> <p>i) Confirm if the crossings are to be trenchless and provide a plan.</p> <p>ii) Clarify whether trenchless techniques are relied upon for the conclusion of no likely significant effects in the ES in respect to flooding.</p> <p>iii) How is trenchless techniques secured in the dDCO in this regard.</p> <p><i>[N.B: This question overlaps with BHR 1.1 – The ExA is content if the Applicant wishes to addresses the questions together.]</i></p> |

- 8.1.1 With respect to part (i) of the question, the Applicant can define the approach to crossings techniques and the proposed approach as has been determined during the design studies conducted to date. This includes a commitment to use, where appropriate, trenchless crossing techniques at a number of locations identified below.
- 8.1.2 Where appropriate, all minor water crossings will be addressed using trenchless techniques. By this it is meant that the approach will not be open cut and therefore will not include a trench straight through the feature. A trenchless approach means that the surface features of these crossing should not be affected by the pipeline installation. The term “trenchless” encompasses several construction techniques, some of which are as follows:
- Auger Bore
  - Thrust Bore
  - Horizontal Directional Drill
  - Micro tunnel

8.1.3 These techniques are not as cost effective or time efficient as an open cut approach but will ensure the surface can be left unaffected should the crossing be completely inaccessible or subject to protective provisions. The following diagram shows a typical schematic layout for a trenchless crossing of a road. This road may be subject to a trenchless approach for several reasons:

- There are habitats in the verge that must be protected
- The road is of a sufficient traffic density or route importance that it cannot be interrupted in any way

*Figure 8-1 - Illustrative working width layout – special crossing (road crossing)*



- 8.1.4 A table of which crossings may be subject to a trenchless approach and which may not be included at Table 3-3 of the ES (Examination Library ref APP-071).
- 8.1.5 Table 3-3 of the ES (Examination Library ref APP-071) shows which crossings may be subject to a trenchless approach and which may not. This table is extracted below. The table refers to "likely technique" in order to provide the Applicant with flexibility should it prove more beneficial or necessary, due to currently unknown ground conditions, to use another method. For example, if when breaking ground an archaeological artefact is found then it may be beneficial (in terms of time, resource and impact) to use a trenchless approach instead of open cut

Figure 8-2 - Extract from page 3-10 of ES

3.2.37. Crossings anticipated as part of the Gas Pipeline construction are shown in Table 3-3.

Table 3-3 - Pipeline Construction Crossings

| Description                             | Type               | Likely Technique |
|-----------------------------------------|--------------------|------------------|
| Crossing off Rusholme Lane (Minor Road) | Minor Road         | Open Cut         |
| Field North of Rusholme Lane            | Minor Water        | Trenchless       |
| Main Road, Drax                         | Minor Road         | Trenchless       |
| Main Road, Drax                         | Minor Water        |                  |
| Field West of Main Road                 | Overhead Electrics | Open Cut         |
| Field South of Carr Lane                | Minor Water        | Trenchless       |
| Wren Hall Lane                          | Overhead Electrics | Open Cut         |
| Wren Hall Lane                          | Minor Road         | Trenchless       |
| Field in front of Drax Site             | Overhead Electrics | Open Cut         |

- 8.1.6 At minor water crossings (for example streams, deep ditches or deep drains), the Applicant's intention will be to use trenchless techniques, as shown in the table. By this it is meant that the approach will not be open cut and therefore will not include a trench straight through the feature. Final confirmation of this method, together with the method of crossing other features, will be determined following further design work. Other crossings, including shallow ditches, are expected to be addressed using open cut techniques.
- 8.1.7 Further information is provided in the attached diagrammatic annotation of the Works Plans to confirm the likely techniques for all identified crossings. The proposed approach for each of the crossings referred to in the above table is given below:
- Crossing off Rusholme Lane (Minor Road) Minor Road: Open Cut
    - Selected as Open cut as it is considered that a single lane of traffic can be maintained during the open cut construction process (which for this crossing should be less than 1 week) which should be sufficient for the likely traffic
  - Field North of Rusholme Lane Minor Water: Trenchless
    - Selected as trenchless in consideration of the depth of the Drainage Ditch (considering that the primary design code IGEM/TD/1 calls for a clearance of 1.2m between the installed pipeline and the true cleaned bottom of the drain), the likely approach to be preferred by the enforcing stakeholder requirements and the proximity of a water vole burrow.
  - Main Road, Drax, Minor Road and Minor Water: Trenchless
    - Selected as trenchless in consideration of the significance of the road to local residents and the presence of a water feature on the west of the road.
  - Field West of Main Road Overhead Electrics: Open Cut
    - Selected as open cut and labelled as a crossing to ensure due consideration is given to the risk presented from the presence of the overhead lines.
  - Field South of Carr Lane Minor Water: Trenchless



- Selected as trenchless in consideration of the depth of the ditch (considering that the primary design code IGEM/TD/1 calls for a clearance of 1.2m between the installed pipeline and the true cleaned bottom of the drain) and the likely impacts from the presence of the declassified SINC to the north.
- Wren Hall Lane Overhead Electrics: Open Cut
  - Selected as open cut and labelled as a crossing to ensure due consideration is given to the risk presented from the presence of the overhead lines.
- Wren Hall Lane Minor Road: Trenchless
  - Selected as a trenchless in consideration of the significance of the road to local residents and the presence of a water feature on the west of the road.
- Field in front of Drax Site: Open Cut
  - Selected as open cut and labelled as a crossing to ensure due consideration is given to the risk presented from the presence of the overhead lines.

- 8.1.8 With respect to part (ii) of the question, the construction of the Gas Pipeline will be undertaken in an area identified to be at risk of flooding only in the unlikely breach of the existing flood defences. The use of either trenchless or open cut techniques to construct the proposed Gas Pipeline does not impact the risk of flooding in the construction areas or elsewhere.
- 8.1.9 The Applicant can confirm that the conclusion of ‘no likely significant effects in the ES in respect to flooding is the same for either open cut trenching or trenchless techniques and that no reliance has been placed on the use of trenchless techniques to achieve this conclusion.
- 8.1.10 With respect to part (iii) of the question, the use of trenchless techniques, as the preferred method, for water crossings is secured through requirement 16 of the dDCO which secures the approval and implementation of the CEMP, in substantial accordance with the Outline CEMP (Examination Library ref APP-133, and which is a certified document as identified in Schedule 15, table 15 of the draft DCO).
- 8.1.11 The Outline CEMP (Examination Library ref APP-133) states “*The crossings of the Gas Pipeline with the watercourses will be constructed using trenchless crossing techniques to minimise impact on the watercourses unless such techniques are not appropriate following pre-construction surveys.*”

Table 8-2 - ExA Written Question – FW 1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                   |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FW 1.2  | Applicant   | <p><b>Gas pipeline crossings techniques</b></p> <p>There is no explanation of the requirements of open cut techniques, such as width of cutting and duration of works.</p> <p>Confirm that the worst case scenario regarding construction of the pipeline using open cut techniques has been assessed.</p> |

- 8.1.12 As stated in the response to FW1.1, point (ii), the use of either trenchless or open cut techniques to construct the proposed Gas Pipeline does not have an impact on the risk of flooding in the area or elsewhere.
- 8.1.13 The usual requirements of an open cut cross country pipeline construction project and the ones expected to be employed on the Proposed Scheme are explained as follows. The durations for each element for the Gas Pipeline are to be determined, but the preliminary schedule is also described herein. The Environmental Assessment has assumed the techniques as set out in Figure 2 above. This is robust as the final techniques can only be determined at detailed design stage. However, these final techniques will be confirmed in the CEMP, which must be submitted to SDC for approval, and so SDC will ultimately be the decision maker on the Gas Pipeline installation techniques. Given the final CEMP must be substantially in accordance with the outline CEMP, the Applicant would need to confirm trenchless techniques for the minor water courses and, where it did not, explain why such trenchless techniques cannot be utilised and the alternative method that was no worse than the trenchless method (taking into account the particular circumstances, ground conditions and ecological quality of the crossing in question). Open Cut Crossings
- 8.1.14 The open cut technique involves creating an open-top trench across the feature so the pipeline can be laid as normal. For private roads / tracks / ditches, an open cut construction technique is preferred. This technique is normally used where no environmental restrictions exist and on farm tracks or minor roads where allowance to divert or stop traffic is a possibility.
- 8.1.15 For open cut construction techniques, a trench is dug directly across the private road / track / ditch. Once dug, a short pre-fabricated section of pipe is installed and the trench backfilled with the graded excavated material in a timely manner
- 8.1.16 In the case of watercourses or ditches, the pipe will be installed as per the enforcing stakeholder requirements e.g. EA, Internal Drainage Boards or Local Authorities. This may be either open cut or trenchless techniques. The depth required will be as per the Pipeline Design Standard IGE/TD/1, and protective concrete slabs will be installed if the crossing technique permits this. The surface of the ditch will then be reinstated with appropriate material to its original line and level. The banks of ditches will be re-seeded as soon as possible upon completion. Erosion protection will be included where appropriate to assist re-vegetation.
- 8.1.17 This technique is the most invasive but generally the most economical and fastest as the equipment required performing this type of crossing is not specialised and would most likely already be on site. It is essentially an extension of the cross-country laying process common to the majority of pipelines.

#### Typical Open Cut Construction Methodology

- 8.1.18 The section begins by describing the general approach for a pipeline construction project in order to justify the approach taken and flexibility requested at this stage. Though related to normal cross country installation, this approach is applicable to open crossings as well as and an assumption is made that minimal restrictions will be applied (for an example for crossing of an overhead line a height restriction is applied to the working width but otherwise it is as per the rest of the normal installation approach).

8.1.19 The following steps are key to a pipeline construction project:

- Pegging Out
  - This is the process of walking along the route and marking out approximately where the pipeline will be laid.
- Pre-construction drainage works
  - Pre-construction land drainage schemes will be installed wherever appropriate to help prevent water logging of the working width and so any impact from the construction process is not detrimental to the land owners.
- Fencing
  - This is the activity of erecting a temporary fence along the boundaries of the working width. This fence will be the boundary of the project and will be the limits of the controlled construction environment.
  - In most areas, the fencing should comprise strands of plain or barbed wire and / or square mesh netting, as considered appropriate for the particular land in use. Gates and stiles are incorporated into the fencing wherever access must be maintained (such as for farm tracks or for livestock movements).
  - At this stage any environmental preparation that is required would normally be put in place, such as Newt Fences/ Hotels, Bat Bags, Badger Crossings etc.
- Hedgerow Removal
  - Where possible the gas pipeline will be routed away from hedgerows. However, where this is not possible, short sections of hedgerows will be removed. Established trees should be avoided where possible.
  - Any hedging and trees remaining within the working width will be protected with fencing material where appropriate.
- Topsoil strip
  - Topsoil should be stripped from within the working width and stored at one side of the spread while subsoil from excavating the trench should be stored at the other side of the spread to prevent the soils being mixed or damaged. In exceptional circumstances where the type of topsoil and sub soil and or any environmental issues require it; the topsoil and subsoil may need to be stored on top of a geo-textile membrane.
  - During topsoil stripping, an archaeological watching brief should be provided in a manner agreed previously.
- Pipe Stringing
  - The pipeline is likely to be constructed from pre-coated lengths of steel pipe which are circa 12m long. Once required, the steel pipes would be transported from a temporary pipeline storage yard to the working width and laid on wooden sleepers (skids) running parallel to the proposed trench.
- Welding and Joint Coating
  - The steel pipes should be welded together in sections to form a continuous steel pipeline. Each weld should be inspected using Automatic Ultrasonic Testing (AUT) or Radiography. Any faults detected should be repaired or cut out and replaced and then re-inspected as appropriate. The steel pipes arrive on site with a protective coating already applied, except at their ends. After welding and inspection, the bare metal at the welds / joints would be cleaned and a coating applied to make the pipe coating continuous along its entire length.
- Trenching and Laying

- A trench should be excavated to a depth that will allow the pipes to be buried with a minimum depth of cover which is in accordance with IGEM/TD/1, the governing design code. The trench width will usually be about 300mm wider than the linepipe i.e.900mm wide trench for a 600mm diameter gas pipeline.
- During pipe laying, side boom tractors or equivalent plant are used to lower the pipe into the trench, taking care to avoid damage to the pipe coating. The trench will then be backfilled with the excavated subsoil. The subsoil is carefully compacted around and over the pipe up to the top of the trench.
- Topsoil Replacement
  - The topsoil should be substantially replaced over the working width prior to any testing. Care should be taken at this stage to ensure that the various soil structures are maintained so that no detrimental effect on drainage will be experienced around the gas pipeline working width.
- Testing and Commissioning
  - A Direct Current Voltage Gradient (DCVG) Survey will be conducted on completion of the installation of the gas pipeline to determine if there any coating defects that need to be exposed to carry out coating repairs. Following the DCVG Survey, the pipeline should be cleaned internally using a swabbing PIG (Pipeline Inspection Gauge) which will be driven through the pipe using water or compressed air.
  - A "gauging" PIG is then driven through to check the internal diameter of the pipe so as to enable irregularities to be detected and, if necessary, rectified.
  - The pipe should be hydrostatically tested by closing off the ends, filling it with water and increasing the pressure to a pre-determined level (higher than the pressure the pipe is designed to operate at). On completion of pressure testing, the pipe will be dried with a combination of "vacuum drying PIGs" and clean compressed air to the required dew point.
  - The pipe should then be purged with Nitrogen (N<sub>2</sub>) prior to being commissioned with natural gas.
- Permanent Reinstatement
  - Reinstatement, including replacement of the remaining stored topsoil, reseeded of pastureland and installation of post-construction land drainage schemes, should be carried out within the same year as construction, unless prevented by adverse weather. As agreed with the land owners / land occupiers, reinstatement may include deep cultivation or ripping of the subsoil if it has been significantly compacted and spreading of the stored topsoil.
  - Banks, walls and fences should be reinstated and hedges replanted between protective fences. Permanent pipe aerial / ground marker posts and cathodic protection test posts should be installed at agreed locations, generally at field / road boundaries, so as to minimise interference with normal agricultural operations. Finally, the temporary fencing along the working width should be removed, unless the land owner / land occupier prefer it to be left in place until the re-seeded/pastureland is fully established, which typically take one growing season. In ecologically sensitive areas, reinstatement may be modified to suit the local prevailing conditions.

8.1.20 Construction activities including but not limited to fencing, setting out, cold pipe bending, reinstatement and field drainage will likely be carried out in accordance with NG standard

T/SP/P/10, Technical specification for general pipelining designed to operate at pressures greater than 7 bar (Complementary to BS8010), November 2011 or a similar UK industry standard approach.

- 8.1.21 A pipeline construction must be considered as a moving production line, as such it has a direction of travel based on a number of key factors which are only known once a Main Works Contractor (MWC) can review a detailed design and survey the specific site circumstance. Defining this direction of travel without the input of the MWC will be time/cost inefficient for the Project as a whole and unnecessarily disruptive to third parties.

#### Preliminary Pipeline Construction Timelines

- 8.1.22 The Proposed Scheme has currently estimated that the main Gas Pipeline construction aspects should last approximately 4 months.

Table 8-3 - ExA Written Question – FW 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FW 1.3  | Applicant   | <p><b>Mitigation</b></p> <p>Chapter 12 of the ES refers to continuous long term groundwater level monitoring and water user groundwater level and/or surface water level monitoring should be completed for baseline purposes to assess hydraulic linkages.</p> <p>For the Applicant:</p> <p>i) Confirm whether such monitoring has been put in place.</p> <p>For the Environment Agency:</p> <p>ii) Comment on the proposed monitoring.</p> |

- 8.1.23 Following further design development and gaining a more detailed understanding of the local geology, the Applicant considers that the original assessment of groundwater and surface water connectivity within the Environmental Statement (paragraphs 12.4.29 and 12.6.32) (Examination Library ref APP-080) was overly cautious. The Gas Pipeline will be installed between 2-3m below ground and the Gas Pipeline trench will be reinstated with backfill derived from the original excavation. This is important because the back fill will, therefore, have similar permeability to the adjacent ground - limiting the potential for it to act as a preferential groundwater flow path once the Gas Pipeline has been completed.
- 8.1.24 In the vicinity of the River Ouse, the Gas Pipeline and Above Ground Installation will be founded within Warp ground materials (defined in ES chapter 12 Water Resources, Quality and Hydrology, Examination Library ref APP-080) – local BGS borehole logs show that these ground materials are composed of clay, which have very low permeabilities. The Warp ground materials are therefore limiting the hydraulic connectivity with the River Ouse. As the Warp consists of low permeability ground materials, should sump pump dewatering of the proposed pipeline trench during construction of the Gas Pipeline and the Above Ground Installation be required it would have very limited lateral impact. Therefore, Gas Pipeline

trench dewatering over a short period of time within these Warp ground materials would be unlikely to have an impact upon the River Ouse.

- 8.1.25 Further to the west the Gas Pipeline will be founded in the Hemingbrough Glaciolacustrine Formation, Brighton Sand Formation and Alluvium superficial deposits. The Hemingbrough Glaciolacustrine Formation and Alluvium deposits are composed of clay (very low permeability) and the Brighton Sand Formation is composed of a sandy clay (low permeability) down to approximately 2m below ground level (bgl). There is no significant hydraulic connectivity between the above deposits and the River Ouse. Should sump dewatering be required during construction (unlikely given the depth of excavation although possible in the event of prolonged wet weather), it would be for a short period of time and would be unlikely to have an impact upon the River Ouse.
- 8.1.26 Given the above, the Applicant therefore considers that continuous long-term groundwater level and surface water level monitoring is not required. This approach has been discussed and agreed with the Environment Agency; this will be confirmed in a Statement of Common Ground.

Table 8-4 - ExA Written Question – FW 1.4

| ExA Ref | Question to                                            | Question                                                                                                                                                                                             |
|---------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FW 1.4  | The Environment Agency, North Yorkshire County Council | <b>Outline Surface Water Drainage Strategy</b><br>Provide a response as to the adequacy of this document (Chapter 6 of the Flood Risk Assessment [APP-136] and Requirement 13 of the dDCO [AS-012]). |

- 8.1.27 The proposed outline drainage strategy has been reviewed by the EA as part of its review of the FRA report (Examination Library ref AS-014). The EA confirmed that the content of the report is acceptable. The EA confirmation letters are provided in Appendix FW-A.
- 8.1.28 NYCC advised that the proposed construction is located in an area under the jurisdiction of the Selby Area IDB, and Selby Area IDB should be consulted in relation to local flood risk and drainage aspects associated with land drainage ditches. Confirmation of the IDB requirements is provided in the IDB correspondence in Appendix FW-B. The Applicant can confirm that the proposed Outline Drainage Strategy (at Section 6.0 of the Flood Risk Assessment, Examination Library ref AS-014) was developed in accordance with these requirements.

Table 8-5 - ExA Written Question – FW 1.5

| ExA Ref | Question to                   | Question                                                                                                                                          |
|---------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FW 1.5  | The Environment Agency, North | <b>Flood Risk Assessment</b><br>Confirm whether or not they are content with the scope, assessment, methodology and conclusions of the Flood Risk |



| ExA Ref | Question to              | Question                                                                                                                                  |
|---------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
|         | Yorkshire County Council | Assessment [AS-014]. If not, provide details of the specific areas of concern and confirm how these should be addressed by the Applicant. |

- 8.1.29 The content of the FRA, including the supporting hydraulic model, has been reviewed and accepted by the EA. The confirmation letters are provided in Appendix FW-A of this document.

Table 8-6 - ExA Written Question – FW 1.6

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FW 1.6  | Applicant   | <p><b>Water framework directive</b></p> <p>It is noted from Chapter 12 of the ES that a Water Framework Directive (WFD) Screening was submitted to the EA during the pre-application period and it is stated the Environment Agency (EA) confirmed to the Applicant that a full WFD assessment was not required. Provide the WFD Screening to the Examination and evidence of agreement with the EA regarding this matter.</p> |

- 8.1.30 The WFD Screening Assessment submitted to the EA for review during the pre-application process is attached to this document in Appendix FW-C. The EA response and the confirmation for the Selby Area IDB that they do not require WFD assessment are also enclosed in Appendix FW-C.

## 9 HISTORIC ENVIRONMENT

Table 9-1 - ExA Written Question – HE 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                     |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HE 1.1  | Applicant   | <p><b>Heritage value of the existing power station</b></p> <p>Provide a response on whether the existing power station and in particular the group of cooling towers has any local, regional or national heritage value.</p> |

- 9.1.1 It could be argued that the existing Drax Power Station has some limited heritage value as one of the remaining coal fired power stations constructed in the 1970s in England. This is evidenced in the Historic England guide 'Introductions to Heritage Assets: 20th-Century Coal- and Oil-Fired Electric Power Generation' (June 2015). This short guide states that *"Power stations are among the largest and most recognisable complexes built in the British landscape during the C20. They had a profound impact on the British landscape, visually, environmentally, and culturally, and the electricity they generated had a transformational effect on our economy and society (pg 1)"*. It goes on to state that *"what have been described as the 'great temples to the carbon age', are likely to disappear from the landscape, as their sites are reused for new production plant, or are reclaimed for new uses"* (pg 17).
- 9.1.2 However, the existing Drax Power Station has not been subject to Listing and is not therefore a statutory designated heritage asset. It does not appear on the National Heritage List for England as a listed building. Neither does it appear on the NYCC Historic Environment Record which would merit it as being considered up to regional importance. Historic England has not advised that it is a non-designated asset demonstrably of equivalent significance to statutory designated monuments. The SDC Conservation Officer has stated that SDC does not have an up to date Local List of heritage assets and has not stated that the Power Station is recorded as being of local significance.

Table 9-2 - ExA Written Question – HE 1.2

| ExA Ref | Question to                                                                 | Question                                                                                                                                                                                                                                                 |
|---------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HE 1.2  | North Yorkshire County Council, Selby District Council and Historic England | <p><b>Written Scheme of Investigation</b></p> <p>Comment on the approach taken by the Applicant to submit a Written Scheme of Investigation for future mitigation, as set out in Requirement 15 of the dDCO [AS-012] post decision/pre-commencement.</p> |

- 9.1.3 As stated in response to first written question DCO 1.2, requirement 15 has been amended to remove intrusive archaeological surveys from "permitted preliminary works."
- 9.1.4 The programme of archaeological mitigation is currently under discussion with NYCC and SDC. Agreement on this matter will be recorded in future updates to the Statement of Common Ground with NYCC and SDC. Historic England has reviewed the geophysical survey (document reference 6.2.8.2, Examination Library Reference APP-105) and evaluation trenching fieldwork (document reference 6.2.8.3, Examination Library Reference APP-106) and agreed that no remains of national significance were exposed or expected, as detailed in the Statement of Common Ground with Historic England (Examination Library Ref: REP1-003).

Table 9-3 - ExA Written Question – HE 1.3

| ExA Ref | Question to      | Question                                                                                                                                                                                                                                                                                                |
|---------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HE 1.3  | Historic England | <p><b>Assessment Methodology</b></p> <p>Chapter 8 of the ES [APP-076] makes reference to agreements with Historic England on specific matters.</p> <p>i) Confirm whether all agreements referred to in the ES are satisfactory.</p> <p>ii) Confirm details and provide evidence of such agreements.</p> |

- 9.1.5 Paragraph 2.1.1 of the Statement of Common Ground with Historic England (Examination Library Ref: REP1-003) confirms that *"It is agreed that Chapter 8 (Historic Environment) in the Environmental Statement submitted with the Application (Examination Library Ref: APP-076) accurately sets out the consultation and engagement undertaken between the Parties in relation to the Application."* Table 1 in the Statement of Common Ground then summarises the record of meetings and key correspondence between the Applicant and Historic England, including references to where agreement has been reached. Paragraph 2.1.3 then states that *"It is AGREED that Table 1 is an accurate record of the meetings and key correspondence between Drax and Historic England."*
- 9.1.6 The Statement of Common Ground confirms at paragraphs 2.2, 2.3 and 2.4, that the scope of the assessment, assessment of methodology and assessment conclusions are all agreed. Furthermore, paragraph 2.5 confirms that there are no outstanding matters.
- 9.1.7 Accordingly, the Applicant considers that the Statement of Common Ground provides the ExA with the necessary evidence.

## 10 LANDSCAPE AND VISUAL

Table 10-1 - ExA Written Question – LV 1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LV 1.1  | Applicant   | <p><b>Assessment Methodology</b></p> <p>Paragraphs 10.4.56 and 10.4.57 of Chapter 10 of the ES describe that Table 10-7 includes shading to identify 'significant' effects. However, there is no shading within Table 10-7. Table 10.3.8 of Appendix 10.3 also does not make this clear.</p> <p>i) Clarify both so that it clearly states what level of effect is considered to be significant or not significant.</p> <p>ii) Confirm whether the 'moderate' and 'minor' residual effects identified in Table 10- 15 are considered to be 'significant'.</p> |

- 10.1.1 In relation to part (i) of the question, there is a formatting error in Table 10.7, Chapter 10 of the ES (Examination Library Ref: APP-078), and Table 10.3.8, Appendix 10.3 (Examination Library Ref: APP-119). The tables should have shown the following shading:

|                     |            | Sensitivity (value / importance) |                  |                    |            |
|---------------------|------------|----------------------------------|------------------|--------------------|------------|
|                     |            | High                             | Medium           | Low                | Negligible |
| Magnitude of change | Large      | Major                            | Moderate – Major | Minor – Moderate   | Negligible |
|                     | Medium     | Moderate – Major                 | Moderate         | Minor              | Negligible |
|                     | Small      | Minor – Moderate                 | Minor            | Negligible – Minor | Negligible |
|                     | Negligible | Negligible                       | Negligible       | Negligible         | Negligible |

- Dark grey cells are used to identify significant effects in the context of the EIA Regulations 2017 and include moderate, moderate to major and major significant effects;
- Light grey cells are used to identify effects that may or may not be significant and include minor - moderate and moderate significant effects; and
- Unshaded cells denote effects that would not be significant and therefore are not generally considered material to the planning decision. Such effects are negligible, negligible – minor or minor.

- 10.1.2 Throughout the assessment the text states whether the effects would be significant or not for each identified landscape resource and visual receptor during all the stages of the development for the Proposed Scheme.
- 10.1.3 In response to part (ii) of the question, all the moderate residual effects identified in Table 10-15 within Chapter 10 Landscape and Visual Amenity of the ES (Examination Library ref APP-078) are considered to be significant residual effects following mitigation.
- 10.1.4 There is one minor residual landscape effect identified in Table 10-15 on the local landscape character following establishment of mitigation in Year 15. This is not considered to be a significant effect.

Table 10-2 - ExA Written Question – LV 1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LV 1.2  | Applicant   | <p><b>Design</b></p> <p>The ExA notes that Chapter 4 of the ES does not outline the design approach and objectives for the Proposed Development. Furthermore, North Yorkshire County Council (NYCC) in its RR states that the design choice and its subsequent effects (if any) on the original power station design needs to be further explained.</p> <p>i) Explain whether an assessment of the architectural and landmark value of the existing power station and in particular the composition of the group of cooling towers from range of close and distant viewpoints has been undertaken.</p> <p>ii) Explain the approach to the design and visual appearance of the proposed development, setting it within the composition of the existing power station.</p> <p>iii) Confirm whether the approach been discussed with NYCC and Selby District Council (SDC). Include the outcome of the discussion in Statements of Common Ground.</p> |

- 10.1.5 With respect to part (i) of the question, the original power station and specific structures within the original power station are not listed nationally and whether it is of regional or local landmark value is a subjective judgement, but the original power station is not identified as either in any regional or local lists. Whilst an assessment of the architectural and landmark value of the original power station and composition of the group of cooling towers has not been undertaken, the assessment has considered the symmetry and original design of the power station (including development that has taken place since the original design in order to reflect the existing environment at the Existing Drax Power Station Complex) as part of the existing baseline, against which the assessment of the Proposed Scheme's impact has taken place. This is in accordance with EIA Regulations 2017.

- 10.1.6 The ES Chapter 10 Landscape and Visual Amenity (Examination Library ref APP-078) does acknowledge the architectural symmetry of the original power station as referenced in paragraph 10.5.43, *“The Existing Drax Power Station Complex is a dominant feature in the landscape with a strong, almost iconic “presence”. Its large scale, mass and coherent, considered design has resulted in strong, symmetry primarily relating to the cooling towers, chimney, boiler house and turbine hall.”* The coherent, considered design and symmetry of the original design has been taken into account for the purposes of the assessment.
- 10.1.7 Chapter 10 also notes that subsequent development has taken place since the implementation of the original design of the power station which has eroded this harmony. Paragraph 10.4.95 of Chapter 10 states that *“Since the original Weddle design, there has been an erosion of the original symmetry and a widening of the original footprint increasing visual coalescence from some elevations and increasing visual clutter through an intensification of land use. This has been through incremental development on the existing Drax Power Station Complex prior to the application, including the introduction of biomass cofiring units, the biomass storage domes as well as the more recent Lytag plant to the north west of the existing Drax Power Station Complex”*.
- 10.1.8 Chapter 10 acknowledges in paragraph 10.5.69 and 10.5.70 that *“The Proposed Scheme would “jar” within the Existing Drax Power Station Complex from certain elevations and conflict with its simple symmetry”*. It goes on to state that *“The Proposed Scheme, and in particular the presence of eight stacks would protrude above the horizontal lines created by the tops of the cooling towers, forming a strong contrast to the existing mass due to their narrow width and form, and visually “clutter” the top of the towers resulting in a slightly discordant view from certain angles. However, subject to appropriate climatic conditions, plumes from the existing cooling towers would mask views of the tops of the stacks in certain directions.”* Discordant views would be particularly apparent in elevations to the north east, east and south east.
- 10.1.9 With respect to part (ii) of the question, locational, environmental, engineering and operational drivers have been key considerations in the siting, layout and design of the Proposed Scheme within the Existing Drax Power Station Complex. Considerations outlined in Chapter 4 Consideration of Alternatives of the ES (Examination Library ref APP-072) and summarised in ES Chapter 10 Landscape and Visual Amenity, (Examination Library ref APP-078) include the following:
- Units X and Y have been positioned close to the existing steam turbines to reuse existing infrastructure, maximise existing infrastructure and enable ongoing operations of Drax’s coal units until such a time as they are decommissioned.
  - Gas turbine selection was based on achieving higher efficiency electricity production and lower emissions of CO<sub>2</sub> per MW. The Proposed Scheme uses vertical Heat Recovery Steam Generators (HRSGs) which are beneficial since they are compact and have a much smaller footprint compared to horizontal HRSGs allowing the plant layout within the Existing Drax Power Station Complex boundary to be optimised. Proximity to the steam turbines maximises efficiency by generating shorter steam pipe runs.
  - Stack heights associated with Units X and Y are set in response to reducing air quality impacts.
  - The Proposed Scheme makes use of an existing brownfield site that has long been established for electricity generation. The majority of the site is brownfield land, and



the majority of the proposed infrastructure would be perceived in the context of the already industrialised Existing Drax Power Station Complex. Permanent loss of currently agricultural land would be minimised and there would therefore be little material change in land use.

10.1.10 During detailed design development, regard will be had to using materials for the proposed structures which reduce reflection and glare and to assist with breaking up the massing of the buildings and structures. The buildings are likely to be steel structures with concrete walls or metal / GRP cladding. The turbine stacks would be a steel frame with a reinforced concrete shell. Requirement 6 in Schedule 2 of the draft DCO (Examination Library ref AS-012, a revised version of which is submitted at this Deadline 2, Applicant's document ref 3.1, Rev 2) requires the approval by Selby District Council of the siting, layout, scale and external appearance, including colour, materials and surface finishes of all new permanent buildings and structures. An indicative colour palette for structures is provided in the ES Chapter 10 Landscape and Visual Amenity (Examination Library ref APP-078). The proposed colours have drawn on the colour palette used in the original Drax design.

10.1.11 The Proposed Scheme retains existing blocks of woodland on and off site which were identified through the original Weddle's landscape proposals. Specific areas which have been retained through changes in the design process include:

- The retention of North Station Wood (north of the materials handling entrance) during construction and operation of the Proposed Scheme (without CCS).
- The retention of a 15 m wide woodland buffer within the Power Station Site, adjacent to the northern boundary during construction providing a continuous belt of woodland during the construction and operation of the Proposed Scheme (without CCS).
- The retention of existing planting along the southern road entrance and within the Site Boundary resulting in revisions to the arrangement of the contractor's village access
- road.

10.1.12 The revised Outline Landscape and Biodiversity Strategy submitted at Deadline 2 (Applicant's document ref 6.7 Rev. 002) sets out design objectives for the detailed design of the proposed landscaping of the Proposed Scheme. These objectives reflect many of the landscape design objectives of the Weddle landscape management report including objectives that:

- Provide a bold, simple landscape structure to connect and unify large scale structures as well as linking physically and visually with surrounding off site planting. Planting should be drawn from a small planting palette.
- Reduce visual clutter and introduce a low-level screening internally through new hedgerows and shrub planting where feasible.
- Maintain existing trees and shrubs and where appropriate substitute and introduce further planting to provide greater interest, increase density and spread.

- 10.1.13 With respect to part (iii) of the question, the approach set out above has been discussed with NYCC and SDC and this is reflected in the Statement of Common Ground with both Local Planning Authorities (a draft of which was submitted at Deadline 1, Examination Library ref REP1-006) which states (at paragraphs 3.7.1 – 3.7.6) that:
- 10.1.14 *“Whilst NYCC and SDC do not wish to comment on the appropriateness of the Proposed Scheme’s design from an engineering point of view, it is acknowledged and agreed that the Applicant has sought to incorporate a degree of flexibility within the layout and design of the Proposed Scheme. The Applicant has adopted a flexible approach and has assessed a number of maximum design parameters which are set out and secured in Schedule 13 of the draft DCO (Examination Library Ref: AS-012).*
- 10.1.15 *It is agreed that the Environmental Impact Assessment provides an appropriate assessment of the likely significant environmental effects of the Proposed Scheme within the parameters defined by Schedule 13.*
- 10.1.16 *Requirements set out in Schedule 2 of the draft DCO which secure the submission of details of design are:*
- *Requirement 7: Detailed design approval [now requirement 6 in the draft DCO submitted at Deadline 2]*
  - *Requirement 8: Provision of landscape and biodiversity mitigation [now requirement 7 in the draft DCO submitted at Deadline 2]*
  - *Requirement 10: External lighting during construction and operation [now requirement 9 in the draft DCO submitted at Deadline 2]*
  - *Requirement 11: Highway access and passing place during construction [now requirement 10 in the draft DCO submitted at Deadline 2]*
  - *Requirement 12: Means of enclosure [now requirement 11 in the draft DCO submitted at Deadline 2]*
  - *Requirement 13: Surface water drainage [now requirement 12 in the draft DCO submitted at Deadline 2]*
  - *Requirement 28: Details of finished colour treatment and profile of cladding (in relation to the Site Reconfiguration Works) [requirement deleted in the draft DCO submitted at Deadline 2 following the removal of Stage 0 from the DCO Application]*
  - *Requirement 31: Provision of landscape and biodiversity mitigation (in relation to the Site Reconfiguration Works) [requirement deleted in the draft DCO submitted at Deadline 2 following the removal of Stage 0 from the DCO Application]*
  - *Requirement 32: Surface water drainage (in relation to the Site Reconfiguration Works) [requirement deleted in the draft DCO submitted at Deadline 2 following the removal of Stage 0 from the DCO Application]*
- 10.1.17 *These are being kept under review as a number of requirements are proposed to be deleted following the removal of “Stage 0” (the Site Reconfiguration Works) from the Application.*
- 10.1.18 *It is agreed that the above requirements would secure the submission of the necessary level of detail (in accordance with the design parameters) and provide SDC, as relevant planning authority, with sufficient control over and certainty as to the final design of the Proposed Scheme.*

10.1.19 *It is agreed that the consideration of alternatives in Chapter 4 of the ES demonstrates that consideration has been given to alternative design options. Key elements of the Proposed Scheme have been through several design iterations and evolutions. Environmental and technological constraints have informed the siting of the Proposed Scheme, its extent and height. The authorities have taken a pragmatic approach to the consideration and assessment of these issues and do not have any additional queries or concerns with them."*

Table 10-3 - ExA Written Question – LV 1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LV 1.3  | Applicant   | <p><b>Landscape Mitigation</b></p> <p>Yorkshire Wildlife Trust in its RR states that opportunities exist to mitigate the effects on landscape and visual character as identified in the Chapters 10 and 18 of the ES. Options include improving visitor experiences at Barlow Common Nature Reserve or to major habitat creation flood plain grassland at the River Ouse, which it says would add to landscape value. NYCC in its RR states that the current proposals do not seek to adequately mitigate or compensate for the identified significant adverse effects of the Proposed Development.</p> <p>i) Provide a response, including whether further discussions are on-going between parties.</p> <p>ii) If mitigation is to be undertaken off-site, explain how this is to be secured and why, notwithstanding the Landscape and Biodiversity Strategy, additional work is required and agreed.</p> <p>iii) If an off-site financial contribution is to be agreed, provide an explanation and justification for the sum sought and the project to be funded, and how the contribution would meet the requirements of paragraph 4.1.8 of NPS EN-1.</p> |

10.1.20 With respect to part (i) of the question, it is accepted in Chapter 10 of the ES, Landscape and Visual Amenity (Examination Library ref APP-078) that there are significant adverse landscape and visual effects as a result of the Proposed Scheme. Government policy, as set out in the Energy NPSs, acknowledges that negative effects on landscape / visual amenity are likely as a result of the development of new energy infrastructure, at the scale and speed required to meet the current and future need. NPS EN-1 further acknowledges that *"the impacts on landscape/visual amenity in particular will sometimes be hard to mitigate"* (paragraph 1.7.2).

10.1.21 The location of the Proposed Scheme is appropriate and has been driven by objectives relating to utilising existing brownfield land forming part of the Existing Drax Power Station Complex and its associated infrastructure, already developed for energy generation. The reutilisation of existing brownfield land represents an efficient land use with fewer environmental impacts during construction and operation than a new power station on previously developed land, or on land that does not have an existing electricity generating

use. The reutilisation of as much existing infrastructure as possible (such as the existing cooling systems, cooling towers and steam turbines at Drax Power Station) avoids such infrastructure potentially becoming redundant despite remaining within its operating life and being capable of contributing more efficient energy production and a lower carbon footprint (given it is already constructed).

- 10.1.22 The consideration of alternatives and the explanation of choices in relation to layout, structures and technologies which have influenced or provided parameters for the design of the Proposed Scheme are set out in Chapter 4 of the ES (Examination Library APP-072). The draft DCO contains a requirement to mitigate the landscape and visual effects of the Proposed Scheme by securing the submission to, and approval by, SDC of appropriate details and materials for Units X and Y. Requirement 6 of the draft DCO (Examination Library ref AS-012, a revised version of which is submitted at this Deadline 2, Applicant's document ref 3.1, Rev 2) requires the submission and approval of details of the external appearance of Unit X and Unit Y, in particular the colour, materials and surface finishes of all new permanent buildings and structures, prior to commencement of development. The proposed colours outlined in the LVIA have drawn on the colour palette used in the original Drax Power Station design. Whilst design has therefore been factored in to the iterative development of the Proposed Scheme, there is a need for this to be balanced by the engineering requirements of the Proposed Scheme and its objectives.
- 10.1.23 The Outline Landscape and Biodiversity Strategy (Examination Library ref APP-135, a revised version of which is submitted at Deadline 2) addresses the key landscape and visual effects as far as reasonably practicable given siting, operation and other limitations including the extent of Best and Most Versatile agricultural land (BMV) (Grade 1 and 2). The revised Outline and Landscape Biodiversity Strategy has been prepared in response to comments received from NYCC. It sets out the optioneering process which has informed the identification and consideration of a number of mitigation sites on land within the existing Drax Power Station Complex boundary and land outside this boundary but within the Applicant's ownership. It also includes an overarching Strategy Mitigation Plan which explains how measures to mitigate (where feasible) significant effects and deliver enhancements to existing vegetation have been identified, and outlines a suite of internal design objectives for the detailed site design where the detailed site design has yet to be determined.
- 10.1.24 The Applicant has produced a paper entitled Landscape and Visual Amenity Effects – Appropriateness of Proposed Mitigation, which is submitted at this Deadline 2 (Applicant's document ref 8.4.7) which demonstrates that whilst it has not been possible to eliminate the visual effects of the Proposed Scheme, the mitigation measures which are proposed reduce the visual and landscape impact as far as reasonably practicable. The paper demonstrates that the benefits of providing further mitigation would be disproportionately low compared to the disbenefits (land take of agricultural land) associated with further mitigation. The mitigation provided in the Outline Landscape and Biodiversity Strategy is therefore considered to be appropriate and proportionate. Table 5.1 within the paper summarises where the proposed mitigation measures would have an effect on the landscape resource and visual receptors.

10.1.25 On the basis that the location is appropriate for the Proposed Scheme it is considered that mitigation has been introduced to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable. Whilst the visual effects of the Proposed Scheme are acknowledged, they should be given limited weight in accordance with NPS EN2 – paragraph 2.6.10 which states *“if having regard to the considerations in respect of other impacts set out in EN-1 and this NPS, the [Secretary of State] is satisfied that the location is appropriate for the project, and that it has been designed sensitively (given the various siting, operational and other relevant constraints) to minimise harm to landscape and visual amenity, the visibility of a fossil fuel generating station should be given limited weight.”* Furthermore, it should be noted that NPS EN-1 paragraph 5.9.15 states that *“the SoS should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project”*.

## 11 TRAFFIC AND TRANSPORT

Table 11-1 - ExA Written Question – TT1.1

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.1  | Applicant   | <p><b>Assessment Methodology</b></p> <p>Paragraph 5.11.1 of Chapter 5 of the ES states that assumptions relating to the assessment of transport impacts and operational traffic, including the scoping of the impacted transport network have been agreed with Highways England, North Yorkshire County Council (NYCC) and East Riding of Yorkshire Council. The ExA notes however, that no explanation has been offered as to what those assumptions are.</p> <p>i) Provide those assumptions.</p> <p>ii) Confirm how concerns raised by Highways England, NYCC and East Riding of Yorkshire Council regarding traffic and transport issues have been addressed in the ES.</p> |

- 11.1.1 With respect to parts (i) and (ii) of the question, there are a number of assumptions referenced throughout the Transport Chapter (Chapter 5) of the Environmental Statement (Examination Library ref [APP-073](#)) and the associated Appendices (Examination Library ref APP-090 to APP-097). These assumptions are presented below under grouped headings with specific reference made to those documents.
- 11.1.2 The 2018 Baseline Traffic Flows are presented at Appendix 5.3 – Baseline Traffic Flows (Examination Library ref APP-092). The traffic flows presented are for the network peak, which were determined to be as follows:
- AM Network Peak Hour (07:45 – 08:45)
  - PM Network Peak Hour (16:30 – 17:30)
- 11.1.3 The trip generation assumptions are presented at Appendix 5.5 Trip Generation Methodology (Examination Library ref [APP-094](#)). They include the following:
- Number of staff required each year throughout the construction period
  - The profile of construction activities
  - The working week hours of construction
  - Car sharing assumptions
  - Dimensions of lorry capacities
- 11.1.4 The construction worker Arrival and Departure Profiles, and Gravity Model assumptions are presented at Appendix 5.6 Webtris M62 Hourly Traffic Variations (Examination Library ref APP-095) and Appendix 5.7 – Gravity Model Distribution (Examination Library ref APP-096) respectively. They include the following:
- Arrival and departure profiles of workers for the Site using the existing traffic flow profile for the M62



- A gravity model calibrated with an average trip length of 30km, which reflects the remote nature of the Site, and the likely source of workers.
- 11.1.5 Discussion of the assumptions used in the assessment of the Proposed Scheme impacts are included in the Transport Chapter (Chapter 5) of the Environmental Statement (Examination Library ref [APP-073](#)) and associated appendices. In responding to Highways England, NYCC and East Riding of Yorkshire Council's comments before submission, the Applicant agreed these assumptions with Highways England, NYCC and East Riding of Yorkshire through scoping discussions from January to May 2018, as presented at Table 5.1 in the Transport Chapter (Chapter 5) of the Environmental Statement (Examination Library ref APP-073), with a meeting held on 16<sup>th</sup> April 2018 to discuss and agree the assumptions.
- 11.1.6 Post submission, further discussions have been held with Highways England and NYCC and it has been agreed that the potential adverse impact of the Proposed Scheme during construction can be monitored and managed through revisions to the outline Construction Worker Travel Plan (CWTP) (Examination Library ref APP-090) and Construction Traffic Management Plan (CTMP) (Examination Library ref APP-091) submitted with the Application.
- 11.1.7 The revised outline CTWP and outline CTMP are submitted at Deadline 2 (Applicant's document ref 6.2.5.1 Rev 002 and ref 6.2.5.2 Rev 002 respectively). The revisions strengthen the monitoring of the impacts associated with the construction traffic and provide a framework to manage the impacts. The revised CTMP and CWTP have been agreed by NYCC, which will be recorded in the final form Statement of Common Ground with NYCC and SDC. Highways England has agreed the revised CTMP and CWTP in principle, which again will be recorded in the Statement of Common Ground with Highways England.
- 11.1.8 Regarding the East Riding of Yorkshire Council, the Applicant has agreed a Statement of Common Ground with the Council (Examination Library Ref: REP1-005). This Statement of Common Ground confirms that:
- The assessment methodology and baseline conditions set out in the Transport Chapter (Chapter 5) of the Environmental Statement (Examination Library ref [APP-073](#)) are agreed;
  - The Transport Chapter (Chapter 5) of the Environmental Statement (Examination Library ref APP-073) and its appendices address the points raised by the East Riding of Yorkshire Council during consultation activities;
  - No further additional points have been raised by the East Riding of Yorkshire Council post submission of the Application;
  - The effects and mitigation identified in the Transport Chapter (Chapter 5) of the Environmental Statement (Examination Library ref APP-073) are appropriate and agreed;
  - The Proposed Scheme, taking into account the proposed mitigation, would not result in unacceptable impacts in traffic and transport term, including upon the local network;
  - The outline Construction Worker Travel Plan (CWTP) and Construction Traffic Management Plan (CTMP) are adequately secured via the requirements contained in the draft DCO;

- The decommissioning traffic management plan is adequately secured via a requirement contained in the draft DCO;
- The draft DCO adequately manages the construction and reinstatement of highway accesses;
- The highway works and temporary road closures identified in Schedules 3, 4, 5 and 6 to the draft DCO are agreed.

Table 11-2 - ExA Written Question – TT1.2

| ExA Ref | Question to | Question                                                                                                                                                                                                                                     |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.2  | Applicant   | <p><b>Assessment Methodology</b></p> <p>Confirm whether the likely vehicle movements associated with the disposal of waste from the construction of the Proposed Development has been included in the assessment in Chapter 5 of the ES.</p> |

11.1.9 The likely vehicle movements associated with the disposal of waste associated with the construction of the Proposed Scheme have been included in the assessment in Chapter 5 of the Environmental Statement, Transport (Examination Library ref APP-073). Specifically, the trips associated with all construction activities, including disposal of waste, are presented at Appendix 5.5 Trip Generation Methodology (Examination Library ref [APP-094](#)).

Table 11-3 - ExA Written Question – TT1.3

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.3  | Applicant   | <p><b>Gas Pipeline and Above-Ground Installation</b></p> <p>Chapter 4 of the ES sets out the transport implications of the Proposed Development on the local highway network. Figures 5.2 and 5.3 illustrate the Abnormal Indivisible Loads (AIL) and Heavy Good Vehicles (HGV) routes from Port of Goole and J36 of the M62 motorway. However, the ExA is not clear on the traffic routes to be taken for the construction of the proposed gas pipeline route and above-ground installation. Newland Parish Council in its RR cite concerns with the use of Brier Lane for these purposes, and suggest a temporary route in advance of a construction haul road.</p> <p>Clarify and indicate on a plan the construction traffic route for the gas pipeline and above-ground installation.</p> |

11.1.10 Paragraph 3.1.8 of the revised outline Construction Traffic Management Plan (CTMP) (submitted at this Deadline 2 (Applicant's document ref 6.2.5.2 Rev002) considers the routes identified by Newland Parish Council to be appropriate for access to the proposed location of the Gas Pipeline and AGI. A plan showing the construction traffic route has been included in the revised CTMP and illustration below. This confirms Brier Lane would not be used by

contractors for the construction of the Gas Pipeline or the AGI at Rusholme Lane. The plan confirms contractors would be required to use New Road, Carr Lane, Main Road, Church Dike Lane, and Rusholme Lane or the working width of the Gas Pipeline if analysis indicates certain sections of the route are unsuitable for larger vehicles.

11.1.11 Paragraph 3.1.9 of the revised CTMP includes measures to ensure that only vehicles capable of comfortably traversing the length of Rusholme Lane are allowed to do so. The analysis secured by the CTMP in order to decide which vehicles can use Rusholme Lane will involve undertaking a swept path analysis of the route prior to deliveries to the AGI with on-site check measurements. Any vehicles that are identified as unable to travel along Rusholme Lane will be required to use the proposed route of the Gas Pipeline, with access from Main Road.

11.1.12 As these measures will be in place for the duration of construction, no restrictions on the time of year vehicles can use the appropriate routes are proposed.

11.1.13 A Statement of Common Ground is being prepared with Newland Parish Council which includes the issues and measures outlined in response to this question; this will be submitted at a future deadline.

Figure 11-1 - Construction Access Route

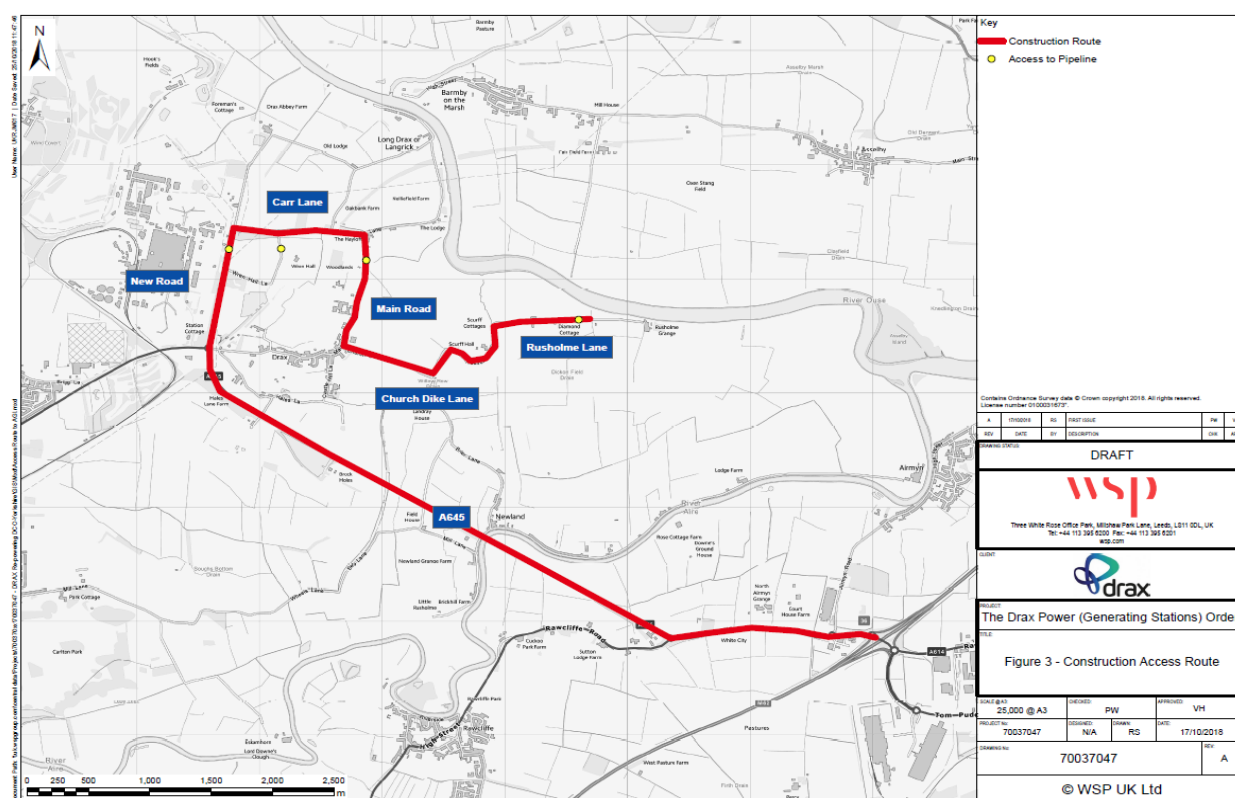


Table 11-4 - ExA Written Question – TT1.4

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.4  | Applicant   | <p><b>HGV/AIL</b></p> <p>Paragraph 3.3.32 of Chapter 3 of the ES identifies that the Applicant may require certain highway powers to for example, remove barriers on the highway (such as street furniture) and temporarily close part of the highway to allow the HGV and AIL to pass. Possible construction transport routes for HGVs/AILs are stated to be shown on Figures 5.2, 5.3 and 5.4 of Chapter 5 of the ES [APP- 073]. No highways work beyond the proposed passing place along Rushmore Lane are shown on the Works Plans. Explain the extent to which effects associated with any highways works along Rushmore Lane have been assessed.</p> |

11.1.14 In addition to the passing place on Rusholme Lane, the following works / temporary closures would be carried out on Rusholme Lane (reference to the access and rights of plan is to Examination Library Ref: APP-012, a revised version of which is submitted at Deadline 2):-

- Between points Y and Z on sheet 8 of the access and rights of way plan, it is proposed to carry out temporary widening works for the provision of a new construction access to Work No. 7 on the north side of Rusholme Lane (i.e. a construction access for the installation of the gas pipeline) (see Schedules 3 and 4 of the draft DCO). These works would be carried out pursuant to the powers in Articles 9 and 10 and referenced at the end of Schedule 1 at (i).
- Between points Y and Z on sheet 8 of the access and rights of way plan, it is proposed to carry out temporary widening works for the provision of a new construction access to Work No. 6D and Work No. 7 on the south side of Rusholme Lane (i.e. a construction access for the installation of the gas pipeline and also the AGI) (see Schedules 3 and 4 of the draft DCO). These works would be carried out pursuant to the powers in Articles 9 and 10. Reference to the construction access routes are referred to in Work No 6D and at the end of Schedule 1 at (i).
- Between points BY and Z on sheet 8 of the access and rights of way plan, it is proposed to install and maintain Work No. 7 in Rusholme Lane (see Schedule 3 of the draft DCO). These works would be carried out pursuant to the powers in Articles 9.
- Between points AW and AV on sheet 8 of the access and rights of way plan, it is proposed to carry out works for the provision of a new permanent access to Work No. 6 on the south side of Rusholme Lane (see Schedules 3 and 4 of the draft DCO). These works would be carried out pursuant to the powers in Articles 9 and 10. Reference to the permanent access is referred to in Work No 6A (vii).
- Between points Y and AV on sheet 8 of the access and rights of way plan, it is proposed to temporarily close Rusholme Lane to install and facilitate the construction of Works No. 6 and 7 (see Schedule 6 of the draft DCO). Article 12 would be relied upon in this regard.

11.1.15 In identifying these required works, we have considered the effects of construction work in relation to the access requirements of users east of the AGI, who use Rusholme Lane as their only access to the public highway. Our assessment is that as Rusholme Lane will remain open for each of the works except that identified in 2.1.10.5 above, and any works on the public highway will be undertaken in line with Chapter 8 of the Traffic Signs Manual, which aims to facilitate safe road works, whilst keeping the traffic flowing as freely as possible.

11.1.16 In relation to 2.1.10.5. above (proposed to temporarily close Rusholme Lane to install and facilitate the construction of Works No. 6 and 7), this relates to the laying of pipe across Rusholme Lane. Although a closure *may not* be required, if it is, then this would be limited to approximately 2 days, and appropriately safe access would be provided directly offset along the verge of Rusholme Lane, where required, to provide access at all times for properties east of the AGI and also for construction staff requiring access to other parts of the AGI and Pipeline.

Table 11-5 - ExA Written Question – TT1.5

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.5  | Applicant   | <p><b>Waterborne Freight</b></p> <p>Both the Canal &amp; River Trust and the Commercial Boat Operators Association in their RR state that waterborne freight should be explored fully to maximise potential usage of the river. Paragraphs 4.10.1 and 4.10.2 of Chapter 4 of the ES state that Drax Jetty was discounted for use because the necessary works to facilitate its use would have resulted in significant environmental effects, particularly from dredging. Paragraph 4.10.3 and Figure 5.2 of Chapter 5 of the ES state and illustrate that the Port of Goole will be used for AILs.</p> <p>i) Clarify whether Drax Jetty could have been used for other construction deliveries without the need for facilitating works and if so, why it was not considered within the scope of the ES.</p> <p>ii) Clarify why the Port of Goole is only being used for AILs and not other construction deliveries.</p> <p>iii) Respond to the points raised by the Canal &amp; River Trust and the Commercial Boat Operators Association particularly in respect to the “Government’s Water Preferred Policy”.</p> |

11.1.17 With respect to part (i) of the question, the use of the Drax jetty was considered at the initial design stage for the delivery of all construction materials up to 200 tonnes, not just abnormal indivisible loads (AILs). The use of the jetty was ultimately ruled out for the Proposed Scheme as it was judged to be not practical either from an engineering, environmental or economic perspective.

11.1.18 Use of the jetty for any construction materials would be highly likely to result in adverse environmental effects on local residential receptors and terrestrial and aquatic protected



species such as otter and river lamprey. These would result from the need for at least one mobile crane landside of the jetty, associated security lighting, fencing, storage and welfare facilities, laydown areas and dredging to make the jetty suitable for use.

- 11.1.19 If brought into use for the delivery of construction materials, the jetty would provide limited benefit as a result of the limited draught restricting the vessels that could be used and tidal restrictions on the hours of use. A summary of these considerations is provided in the Chapter 4 of the Environmental Statement – Consideration of Alternatives (Examination Library ref APP-072). Accordingly, the very limited benefit would be considerably outweighed by the environmental cost of bringing the jetty back into use and making it fit for purpose for the Proposed Scheme.
- 11.1.20 Furthermore, following a structural report on the jetty, it has been determined that the jetty could not support materials over 100 tonnes, thereby reducing the usefulness of the jetty even more. The Drax jetty would, therefore, need to be demolished and rebuilt to manage loads in excess of about 100 tonnes.
- 11.1.21 Subsequently, it has also been found by Drax's transport advisers that the road between the Drax jetty and the Power Station Site would need to be widened and rebuilt to accommodate the heaviest abnormal loads, and may need to be widened to accommodate standard heavy goods vehicles (HGVs). Due to the close proximity of residential receptors to this road, disturbance from dust, noise and vibration both from construction and use of the route by construction vehicles of all types would be significant.
- 11.1.22 Accordingly, Drax has considered that the more appropriate solution is to use an alternative inland facility on the River Ouse at the Port of Goole, approximately 7 miles from the Drax Power Station, for the delivery of abnormal indivisible loads (AILs) for the Proposed Scheme.
- 11.1.23 With respect to part (ii) of the question, other Heavy Goods Vehicles (HGVs) will be distributed on fixed routes to and from the Site on the M62, A614 and A645. They are assumed to travel on the Strategic Road Network (SRN) via the M62 west of junction 36 as this provides connectivity to the majority of the UK.
- 11.1.24 The SRN was selected for the delivery of construction materials instead of the Port of Goole as this is an established HGV route for the Drax Power Station. The origin of the majority of construction materials is not currently known and the Port of Goole may not be a practical or cost-effective route for bring them to the site. However, Drax will consider waterborne transport where the loads can be handled by Port of Goole and it is the most efficient node to deliver materials.
- 11.1.25 With respect to part (iii) of the question, the Canal & River Trust and the Commercial Boat Operators Association both provided relevant representations regarding the application of the Government's Water Preferred Policy for AILs (Highways England (2012, updated 2017) Water preferred policy guidelines for the movement of abnormal loads). Information in response to the relevant representations can be found in the 'Applicant's Response to Relevant Representations' document that was submitted for deadline 1 (Examination Library ref REP1-013). Drax is currently in discussions with Highways England over a Statement of Common Ground to agree the approach to the 'Water Preferred Policy'.



Table 11-6 - ExA Written Question – TT1.6

| ExA Ref | Question to                    | Question                                                                                                                                                                                                             |
|---------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.6  | North Yorkshire County Council | <p><b>Drax Jetty</b></p> <p>Provide comment on the Applicant's assertions stated within paragraph 4.10.2 of Chapter 4 of the ES [APP-072] on the investigation and discounting of waterborne freight being used.</p> |

11.1.26 Through our ongoing discussions with NYCC, no concerns in the discounting of waterbourne freight have been raised and there are no outstanding matters on transport with NYCC as stated in the draft SOCG (Application Library Ref: REP1-006).

Table 11-7 - ExA Written Question – TT1.7

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.7  | Applicant   | <p><b>Public Rights of Way</b></p> <p>Paragraph 5.8.16 of Chapter 5 of the ES states that during the construction phase of Stage 1, a number of Public Rights of Way (PRoW) may need to be temporarily closed in order to remove any potential for conflict between pedestrians and construction vehicles for the construction of the Gas Pipeline. In Stage 2, the Gas Pipeline will be complete, and there will be no impacts for severance. Requirement 9 of the dDCO states that a PRoW management plan will be submitted. No such outline plan accompanies the ES. Schedule 7 states the footpaths 35.47/1/1 and 35.47/6/1 are to be permanently stopped up; those PRoWs being illustrated on Sheet 2 of the Access &amp; Rights of Way Plans.</p> <p>i) Justify the approach as to why a draft PRoW Management Plan has not been submitted with the application, particularly given that Schedule 7 of the dDCO indicates two.</p> <p>ii) Submit a draft/outline PRoW Management Plan.</p> |

11.1.27 With respect to part (i) of the question, the submission of a draft PRoW Management Plan is not a document that is required to be submitted to accompany a development consent application under the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. The Transport Chapter of the ES included measures to mitigate the impact of temporarily or permanently stopping up PROW, this includes reference to providing an alternative route and ensuring publicity and signage be provided in advance of any closure. The details to be included in the PRoW Management Plan were also set out in Requirement 9(2) of the draft DCO (Examination Library AS-012). It was therefore considered that sufficient detail had been provided in relation to what the PRoW

Management Plan would cover and achieve in terms of managing the impacts of the temporary PRoW closures.

11.1.28 It should also be noted that Requirement 9(2) only requires a PRoW Management Plan to be provided in respect of the temporary closure of PRoWs for the construction of Work No. 7. The Management Plan would not cover the permanent closure of the PRoWs identified in Schedule 7. This is because the permanent closure of PRoW 35.47/1/1 and PRoW 35.47/6/1 are only required if it is necessary for the Applicant to take such action in order to prepare the carbon capture readiness reserve space for the installation and operation of carbon capture equipment. This is set out in Article 13 of the draft DCO. Furthermore, Article 13 prevents the closure of the two PRoWs until the new PRoWs have been completed pursuant to the approved details under Requirement 9(4), which requires the Applicant to submit details of the form and lay out of the surface of the new substitution PRoWs. Therefore, there is no need for the Management Plan to cover the permanent closure of PRoW 35.47/1/1 and PRoW 35.47/6/1.

11.1.29 In response to part (ii) of the question, an outline PRoW Management Plan has been prepared at the request of the ExA and is submitted at this Deadline 2 (Applicant's document ref. 8.4.6). The draft PRoW Management Plan outlines how the impacts on the PRoW network will be managed. The draft DCO submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2) has also been amended so that Requirement 8 requires the PRoW Management Plan to be prepared in substantial accordance with the outline PRoW Management Plan. The outline plan will also be a certified document, included in Table 15 of Schedule 15 of the draft DCO.

Table 11-8 - ExA Written Question – TT1.8

| ExA Ref | Question to | Question                                                                                                                                                                                                                                                                                                            |
|---------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.8  | Applicant   | <p><b>Outline Construction Traffic Management Plan</b></p> <p>Provide a response as to the adequacy of this document and Requirement 17 of the dDCO particularly in the light of the comments made by North Yorkshire CC in its RR in respect to temporary car park and footbridge construction and management.</p> |

11.1.30 Both the Applicant and NYCC consider the submission, approval and implementation of the CTMP, as revised a submitted at Deadline 2, which outlines the proposed management of traffic relating to all construction related activities, including the construction of a car park and footbridge, is both adequate and is adequately secured by the requirement in the draft DCO (a revised version of which is submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)). NYCC may require a side agreement in respect of the footbridge and this is currently being discussed.

Table 11-9 - ExA Written Question – TT1.9

| ExA Ref | Question to | Question                                                                                                                                                                                                                                           |
|---------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TT 1.9  | Applicant   | <p><b>Outline Construction Workers Travel Plan</b></p> <p>Provide a response as to the adequacy of this document and Requirement 18 of the dDCO, particularly in the light of the comments made by NYCC in its RR on the need for improvement.</p> |

11.1.31 Both the Applicant and NYCC consider the submission, approval and implementation of the CWTP, as revised and submitted for Deadline 2, is both adequate and is adequately secured by the requirement in the draft DCO (a revised version of which is submitted at this Deadline 2 (Applicant's document ref 3.1 Rev 2)).

## APPENDICES

# BIODIVERSITY AND HABITATS REGULATIONS

## **BHR – APPENDIX A – NYCC CORRESPONDENCE**



Jenner, Hebe

---

From: Julia Casterton <Julia.Casterton@northyorks.gov.uk>  
Sent: 23 October 2018 10:16  
To: Davidson, Philip  
Cc: Michael Reynolds; Peter, Lara; Taylor, Chris; Tumwine, Patricia; Richards, Lloyd  
Subject: RE: 70037047\_Drax\_BatActivity\_ISS.pdf

Hi Phil

Thank you for sending through the bat activity survey results and report. I have now had a chance to review this and I consider that the information gathered over the 5 month period April to Sept 2018 provides sufficient information to inform the ecological assessment in relation to bat activity. I agree with the conclusions of the report in that the precautionary assessment made within the ES remains accurate and valid in light of the information gathered. As such the protection and mitigation measures proposed within the ES are also considered reasonable and proportionate.

Please let me know if you require any further information.

Best wishes

Julia

Julia Casterton  
Principal Ecologist

Heritage Services  
Growth, Planning and Trading Standards

01609 532093

Please note that I am part time and do not work on Fridays.

---

From: Davidson, Philip [mailto:Philip.Davidson@wsp.com]  
Sent: 17 October 2018 16:15  
To: Julia Casterton  
Cc: Michael Reynolds; Peter, Lara; Taylor, Chris; Tumwine, Patricia; Richards, Lloyd  
Subject: 70037047\_Drax\_BatActivity\_ISS.pdf

Hi Julia,

Hope you are well.

Please find attached a copy of the bat activity survey report for Drax Repower.

I would be very grateful if you could review and let us know if you have any comments, or if you are happy with the content and finding of the reports, confirm this by return of email.

As you know we consider that a further survey visit in October would not provide any significant additional information on the use of the site by bats and as such we are not proposing any activity survey effort this month. We would therefore be grateful if you could confirm your agreement to this at the earliest opportunity, so we can avoid any requirements to remobilise a survey team.

Please don't hesitate to contact me and Lloyd (copied) with any queries.

Kind regards,

Phil

**Philip Davidson**

Associate Director, Ecology



T +44 (0) 2920 366353

M +44 (0) 7972 659504

1, Capital Quarter  
Tyndall Street  
Cardiff  
CF10 4BZ

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North Yorkshire County Council.

# **BHR – APPENDIX B – NATURAL ENGLAND CORRESPONDENCE**

Jenner, Hebe

---

From: Walsh, James (NE) <James.Walsh@naturalengland.org.uk>  
Sent: 13 April 2018 11:57  
To: Davidson, Philip  
Subject: RE: 70037047\_EclA\_Data\_Memo\_21032018

Philip

Thanks for your email. I can confirm that the proposed survey programme and sources of information are appropriate. Note that in addition to the ecological reporting for the White Rose CCS project, there may also be survey information from other recent planning proposals in the area, which may be of use.

Kind regards

James Walsh  
Lead Adviser  
Yorkshire & Northern Lincolnshire Team  
Natural England  
Lateral  
8 City Walk  
Leeds  
LS11 9AT

Office: 0208 026 8639  
Mobile: 07887 625570

**We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.**

In an effort to reduce Natural England's carbon footprint, I will, wherever possible, avoid travelling to meetings and attend via audio, video or web conferencing.

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---

From: Davidson, Philip [<mailto:Philip.Davidson@wsp.com>]  
Sent: 27 March 2018 10:55  
To: Beyer, Nick <[nick.beyer@environment-agency.gov.uk](mailto:nick.beyer@environment-agency.gov.uk)>; Julia Casterton <[Julia.Casterton@northyorks.gov.uk](mailto:Julia.Casterton@northyorks.gov.uk)>; Walsh, James (NE) <[James.Walsh@naturalengland.org.uk](mailto:James.Walsh@naturalengland.org.uk)>  
Cc: Taylor, Chris <[Chris.Taylor2@wsp.com](mailto:Chris.Taylor2@wsp.com)>; Jim Doyle <[Jim.Doyle@drax.com](mailto:Jim.Doyle@drax.com)>; Jenny Blyth <[Jenny.Blyth@drax.com](mailto:Jenny.Blyth@drax.com)>; Peter, Lara <[Lara.Peter@wsp.com](mailto:Lara.Peter@wsp.com)>; Sugden, Catherine <[Catherine.Sugden@wsp.com](mailto:Catherine.Sugden@wsp.com)>; Richards, Lloyd <[lloyd.richards@wsp.com](mailto:lloyd.richards@wsp.com)>  
Subject: 70037047\_EclA\_Data\_Memo\_21032018

Dear Nick, Julia, and James,

We are continuing with the delivery of ecological surveys for the Drax Repowering Project and the production of the ecological assessment for the DCO application. As part of this process we have been reviewing the data sources that we intend to use to inform the assessment, both desk-based and survey-based.

As discussed previously with James and Julia, whilst many of our ecological surveys will be complete by the time of the DCO submission, some survey work will need to continue into the summer in order to meet best practice survey guidelines.

I have set out the data sources we expect to use on the attached memo. I would be grateful for your comments on the attached.

Nick, I would also be grateful if you could confirm contact details for your Biodiversity specialist, as it would be useful to discuss ecology aspects related to the River Ouse/Aire.

Kind regards,

Philip

**Philip Davidson**

Associate Director, Ecology



T +44 (0) 2920 366353

M +44 (0) 7972 659504

1, Capital Quarter  
Tyndall Street  
Cardiff  
CF10 4BZ

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## **BHR – APPENDIX C – HRA MATRICES AND SUMMARY TABLES**

## **APPENDIX 1 POTENTIAL EFFECTS (SUBMITTED FOR DEADLINE 2)**

---

Potential effects upon the European site(s)<sup>1</sup> which are considered within the submitted HRA Report are provided in the table below.

Effects considered within the screening matrices are set out below on a site by site basis.

---

<sup>1</sup> As defined in Advice Note 10.

| Designation                 | Effects described in submission information                                                                                                                                                                                                                                    | Presented in screening matrices as                                     |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| River Derwent SAC           | <ul style="list-style-type: none"> <li>Habitat degradation from water-borne pollution and contamination incidents</li> <li>Release of silts and sediments</li> <li>Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul> | <ul style="list-style-type: none"> <li>Habitat degradation</li> </ul>  |
|                             | <ul style="list-style-type: none"> <li>Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                            | <ul style="list-style-type: none"> <li>Species displacement</li> </ul> |
|                             | <ul style="list-style-type: none"> <li>Risk of incidental mortality of species</li> </ul>                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Direct mortality</li> </ul>     |
| Lower Derwent Valley RAMSAR | <ul style="list-style-type: none"> <li>Degradation from water-borne pollution and contamination incidents</li> <li>Release of silts and sediments</li> <li>Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul>         | <ul style="list-style-type: none"> <li>Habitat degradation</li> </ul>  |
|                             | <ul style="list-style-type: none"> <li>Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                            | <ul style="list-style-type: none"> <li>Species displacement</li> </ul> |
|                             | <ul style="list-style-type: none"> <li>Risk of incidental mortality of species</li> </ul>                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Direct mortality</li> </ul>     |
| Lower Derwent Valley SAC    | <ul style="list-style-type: none"> <li>Degradation from water-borne pollution and contamination incidents</li> <li>Release of silts and sediments</li> <li>Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul>         | <ul style="list-style-type: none"> <li>Habitat degradation</li> </ul>  |
|                             | <ul style="list-style-type: none"> <li>Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                            | <ul style="list-style-type: none"> <li>Species displacement</li> </ul> |
|                             | <ul style="list-style-type: none"> <li>Risk of incidental mortality of species</li> </ul>                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Direct mortality</li> </ul>     |
| Lower Derwent Valley SPA    | <ul style="list-style-type: none"> <li>Degradation from water-borne pollution and contamination incidents</li> </ul>                                                                                                                                                           | <ul style="list-style-type: none"> <li>Habitat degradation</li> </ul>  |

| Designation                | Effects described in submission information                                                                                                                                                                                                                                  | Presented in screening matrices as                                       |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
|                            | <ul style="list-style-type: none"> <li>• Release of silts and sediments (from plant movement)</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul>                                                         |                                                                          |
|                            | <ul style="list-style-type: none"> <li>• Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                        | <ul style="list-style-type: none"> <li>• Species displacement</li> </ul> |
|                            | <ul style="list-style-type: none"> <li>• Incidental mortality of species</li> </ul>                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Direct mortality</li> </ul>     |
| Humber Estuary SAC         | <ul style="list-style-type: none"> <li>• Degradation from water-borne pollution and contamination incidents</li> <li>• Release of silts and sediments</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul> | <ul style="list-style-type: none"> <li>• Habitat degradation</li> </ul>  |
|                            | <ul style="list-style-type: none"> <li>• Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                        | <ul style="list-style-type: none"> <li>• Species displacement</li> </ul> |
|                            | <ul style="list-style-type: none"> <li>• Incidental mortality of species</li> </ul>                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Direct mortality</li> </ul>     |
| Humber Estuary SPA         | <ul style="list-style-type: none"> <li>• Degradation from water-borne pollution and contamination incidents</li> <li>• Release of silts and sediments</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul> | <ul style="list-style-type: none"> <li>• Habitat degradation</li> </ul>  |
|                            | <ul style="list-style-type: none"> <li>• Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                        | <ul style="list-style-type: none"> <li>• Species displacement</li> </ul> |
|                            | <ul style="list-style-type: none"> <li>• Incidental mortality of species</li> </ul>                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Direct mortality</li> </ul>     |
| Humber Estuary Ramsar Site | <ul style="list-style-type: none"> <li>• Degradation from water-borne pollution</li> </ul>                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>• Habitat degradation</li> </ul>  |

| Designation                 | Effects described in submission information                                                                                                                                                                                                                                                        | Presented in screening matrices as                                       |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
|                             | <ul style="list-style-type: none"> <li>and contamination incidents</li> <li>• Release of silts and sediments</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul>                                                                |                                                                          |
|                             | <ul style="list-style-type: none"> <li>• Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                                              | <ul style="list-style-type: none"> <li>• Species displacement</li> </ul> |
|                             | <ul style="list-style-type: none"> <li>• Incidental mortality of species</li> </ul>                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Direct mortality</li> </ul>     |
| Skipwith Common SAC         | <ul style="list-style-type: none"> <li>• Degradation from water-borne pollution and contamination incidents</li> <li>• Release of silts and sediments (from plant movement)</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul> | <ul style="list-style-type: none"> <li>• Habitat degradation</li> </ul>  |
| Thorne & Hatfield Moors SPA | <ul style="list-style-type: none"> <li>• Degradation from pollution and contamination incidents</li> <li>• Release of silts and sediments (from plant movement)</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul>             | <ul style="list-style-type: none"> <li>• Habitat degradation</li> </ul>  |
|                             | <ul style="list-style-type: none"> <li>• Displacement from functionally-linked habitat due to increase in noise vibration, lighting and visual disturbance</li> </ul>                                                                                                                              | <ul style="list-style-type: none"> <li>• Species displacement</li> </ul> |
|                             | <ul style="list-style-type: none"> <li>• Incidental mortality of species</li> </ul>                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Direct mortality</li> </ul>     |
| Thorne Moor SAC             | <ul style="list-style-type: none"> <li>• Degradation from water-borne pollution and contamination incidents</li> <li>• Release of silts and sediments</li> <li>• Increase in ambient NO<sub>x</sub> and NH<sub>3</sub> levels and eutrophication during operation</li> </ul>                       | <ul style="list-style-type: none"> <li>• Habitat degradation</li> </ul>  |

## STAGE 1: SCREENING MATRICES

The European sites included within the screening assessment are:

River Derwent SAC;

Lower Derwent Valley RAMSAR;

Lower Derwent Valley SAC;

Lower Derwent Valley SPA;

Humber Estuary SAC;

Humber Estuary SPA;

Humber Estuary Ramsar;

Skipwith Common SAC;

Thorne & Hatfield Moors SPA; and

Thorne Moor SAC.

Matrix Key:

✓ = Likely significant effect cannot be excluded

✗ = Likely significant effect can be excluded

C = construction

O = operation

D = decommissioning



## HRA Screening Matrix 1: River Derwent SAC

| Name of European site and designation: River Derwent SAC                                                                         |                        |       |       |                      |       |       |                  |       |       |                        |       |       |
|----------------------------------------------------------------------------------------------------------------------------------|------------------------|-------|-------|----------------------|-------|-------|------------------|-------|-------|------------------------|-------|-------|
| EU Code: UK0030253                                                                                                               |                        |       |       |                      |       |       |                  |       |       |                        |       |       |
| Distance to NSIP: 0.8km to the Power Station Site, 1.1km to the Pipeline Area                                                    |                        |       |       |                      |       |       |                  |       |       |                        |       |       |
| European site features                                                                                                           | Likely effects of NSIP |       |       |                      |       |       |                  |       |       |                        |       |       |
| Stage of Development                                                                                                             | Habitat Degradation    |       |       | Species Displacement |       |       | Direct Mortality |       |       | In Combination Effects |       |       |
|                                                                                                                                  | C                      | O     | D     | C                    | O     | D     | C                | O     | D     | C                      | O     | D     |
| 3260 Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation | ✓ (a)                  | ✓ (b) | ✓ (a) |                      |       |       |                  |       |       | ✗ (g)                  | ✓ (h) | ✗ (g) |
| 1099 River lamprey <i>Lampetra fluviatilis</i>                                                                                   | ✓ (a)                  | ✓ (b) | ✓ (a) | ✗ (c)                | ✗ (c) | ✗ (c) | ✗ (c)            | ✗ (d) | ✗ (c) | ✗ (g)                  | ✓ (h) | ✗ (g) |
| 1095 Sea lamprey <i>Petromyzon marinus</i>                                                                                       | ✓ (a)                  | ✓ (b) | ✓ (a) | ✗ (c)                | ✗ (c) | ✗ (c) | ✗ (c)            | ✗ (d) | ✗ (c) | ✗ (g)                  | ✓ (h) | ✗ (g) |
| 1163 Bullhead <i>Cottus gobio</i>                                                                                                | ✓ (a)                  | ✓ (b) | ✓ (a) | ✗ (c)                | ✗ (c) | ✗ (c) | ✗ (c)            | ✗ (d) | ✗ (c) | ✗ (g)                  | ✓ (h) | ✗ (g) |
| 1355 Otter <i>Lutra</i>                                                                                                          | ✓ (a)                  | ✓ (b) | ✓ (a) | ✓ (e)                | ✗ (f) | ✓ (e) | ✓ (e)            | ✗ (f) | ✓ (e) | ✓ (g)                  | ✓ (h) | ✓ (g) |

Evidence supporting conclusions:

- (a) The SAC is located approximately 0.8 km from the Proposed Scheme footprint, with the River Derwent upstream of the Proposed Scheme, and no suitable habitat for any of the qualifying interests except otter recorded within 50 m of the Site. During construction and decommissioning of the Proposed Scheme activities such as vegetation clearance, demolition of structures and earthworks could result in the incidental release of silt, fuels and other chemicals. Any contaminants released could potentially be transported into the River Ouse via surface water connections. The River Derwent is directly upstream of the River Ouse. As such, changes in water quality within the Ouse could potentially be transported upstream to the River Derwent. Otters and qualifying interest fish species forming part of the River Derwent SAC populations are also likely to make use of habitats within the River Ouse (and for otter, also connecting waterbodies). These could therefore be affected if the condition of habitats within the River Ouse or River Derwent were affected. It is therefore considered that there is the potential for Likely Significant Effects (LSE) in relation to water quality and this issue will be taken forwards for Appropriate Assessment.
- (b) Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the River Derwent SAC. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub>. The Air Pollution Information System (APIS) is the main reference point for critical loads for habitats and designated sites in the UK. No critical loads for nitrogen deposition or acidification are identified on APIS for the River Derwent SAC. APIS identifies that no critical loads are set for river habitats, as these need considering on a site-specific basis. APIS states that '*No Critical Load has been assigned to the EUNIS classes for meso/eutrophic systems. These systems are often P limited (or N/P co-limiting), therefore decisions should be taken at a site specific level...*' (Ref. 9.53). Given the uncertainty regarding the potential effects of air quality impacts on the SAC in the absence of mitigation measures, there is considered to be potential for LSE. As such, operational air quality impacts will be taken forward for Stage 2 Appropriate Assessment.
- (c) No suitable habitat for SAC fish species has been recorded within 50 m of the Proposed Scheme. The closest suitable watercourse for SAC fish species is the River Ouse, which is located approximately 85 m north of the Pipeline Area (see paragraph 9.5.56 of the ES Biodiversity Chapter). Given the absence of suitable habitat within or adjacent to the footprint of the Proposed Scheme, no displacement or mortality of SAC fish species is predicted to arise. As such, no LSE are predicted to arise in relation to displacement of SAC fish species.
- (d) The existing water cooling system used within the Existing Drax Power Station Complex will continue to be used for the Proposed Scheme, with the same intake and outflow volumes and temperature of water returning to the River Ouse. As there will be no change in the cooling water infrastructure and therefore any associated risk of fish entrainment, no LSE are predicted to arise (see Paragraph 3.2.17 of Chapter 3 of the ES).

- (e) Installation and decommissioning of the Gas Pipeline and Above Ground Installation (AGI) I with associated increases in noise, lighting, and human activity may lead to temporary disturbance of occasionally used otter commuting and foraging routes (see paragraph 9.6.74 of the ES Biodiversity Chapter). This would occur for up to a few months at a time (per watercourse) and as such, may temporarily limit the ability of the local otter population to commute and forage across the local landscape. There would also be a low risk of incidental mortality of otters, for example if excavations are left uncovered overnight. There is therefore the potential for LSE to arise, and this issue will be taken forward for Stage 2 Appropriate Assessment.
- (f) During the fully operational phase (Stage 3), there will be no physical impacts on any areas of suitable or confirmed otter habitat (see paragraph 9.6.88 of the ES Biodiversity Chapter). Occasional maintenance visits could be required to the AGI where the Proposed Scheme connects to the natural gas National Transmission System. The AGI will be located to the north (a minimum of 5 m) from the Dickon Field Drain, a watercourse that could potentially be used by otters. Any maintenance visits would be infrequent, and in the case of planned maintenance would take place primarily during daylight hours, when otter activity would be relatively limited. There could however be a need for visits outside normal working hours for unplanned maintenance, requiring access by personnel and use of artificial lighting during the night. Any such visits would be infrequent, with any disturbance limited to the section of the Dickon Drain adjacent to the AGI. Given that no evidence of otters has been recorded within the Dickon Field Drain and that visits would be infrequent, no Likely Significant Effects are predicted to arise (see paragraph 9.6.89 of the ES Biodiversity Chapter).
- (g) The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). As such no in-combination LSE are predicted to arise during the construction and decommissioning phases of the Proposed Scheme.
- (h) Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the River Derwent SAC as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased in-combination effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE, there is also the potential for in-combination air quality effects to lead to LSE. This issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

## HRA Screening Matrix 2: Lower Derwent Valley SAC

|                                                                                                                                                                  |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|----------|----------|------------------|----------|----------|------------------------|----------|----------|
| Name of European site and designation: Lower Derwent Valley SAC                                                                                                  |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| EU Code: UK0012844                                                                                                                                               |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| Distance to NSIP: 5.1 km to the Power Station Site, 5.7 km to the Pipeline Area                                                                                  |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| European site features                                                                                                                                           | Likely effects of NSIP |          |          |                      |          |          |                  |          |          |                        |          |          |
| Stage of Development                                                                                                                                             | Habitat Degradation    |          |          | Species Displacement |          |          | Direct Mortality |          |          | In Combination Effects |          |          |
|                                                                                                                                                                  | C                      | O        | D        | C                    | O        | D        | C                | O        | D        | C                      | O        | D        |
| 6510 Lowland hay meadows <i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>                                                                            | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |          |          |                  |          |          | ✗<br>(e)               | ✓<br>(f) | ✗<br>(e) |
| 91E0 Alluvial forests with Alder <i>Alnus glutinosa</i> and Ash <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> ) | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |          |          |                  |          |          | ✗<br>(e)               | ✓<br>(f) | ✗<br>(e) |
| 1355 Otter <i>Lutra</i>                                                                                                                                          | ✓<br>(a)               | ✓<br>(b) | ✓<br>(a) | ✓<br>(c)             | ✗<br>(d) | ✓<br>(c) | ✓<br>(c)         | ✗<br>(d) | ✓<br>(c) | ✗<br>(e)               | ✓<br>(f) | ✗<br>(e) |

Evidence supporting conclusions:

- A. The SAC is located outside of the Proposed Scheme footprint (in excess of 5 km from the Proposed Scheme). At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). The SAC is also upstream of the River Ouse, and

beyond the tidal range, meaning there is no pathway by which water-borne pollutants could be transported far enough upstream to impact SAC habitats. As such, no LSE are predicted to arise.

- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Lower Derwent Valley SAC. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.
- C. Installation and decommissioning of the Gas Pipeline and Above Ground Installation (AGI) with associated increases in noise, lighting, and human activity may lead to temporary disturbance of occasionally used otter commuting and foraging routes (see paragraph 9.6.74 of the ES Biodiversity Chapter). This would occur for up to a few months at a time (per watercourse) and as such, may temporarily limit the ability of the local otter population to commute and forage across the local landscape. There would also be a low risk of incidental mortality of otters, for example if excavations are left uncovered overnight. There is therefore the potential for LSE to arise, and this issue will be taken forward for Stage 2 Appropriate Assessment.
- D. During the fully operational phase (Stage 3), there will be no physical impacts on any areas of suitable or confirmed otter habitat (see paragraph 9.6.88 of the ES Biodiversity Chapter). Occasional maintenance visits could be required to the AGI where the Proposed Scheme connects to the natural gas National Transmission System. The AGI will be located to the north (a minimum of 5 m) from the Dickon Field Drain, a watercourse that could potentially be used by otters associated with the Lower Derwent Valley SAC population. Any such visits would be infrequent, and in the case of planned maintenance would take place primarily during daylight hours, when otter activity would be relatively limited. There could however be a need for visits outside normal working hours for unplanned maintenance, requiring access by personnel and use of artificial lighting during the night. Any such visits would be infrequent, with any disturbance limited to the section of the Dickon Drain adjacent to the AGI. Given that no evidence of otters has been recorded within the Dickon Field Drain and that visits would be infrequent, no Likely Significant Effects are predicted to arise (see paragraph 9.6.89 of the ES Biodiversity Chapter).
- E. The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction

and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). As such no in-combination LSE are predicted to arise during the construction and decommissioning phases of the Proposed Scheme.

- F. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Lower Derwent Valley SAC as a result of the Proposed Scheme alone (see (b) above). There is also the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative impacts and in-combination effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

## HRA Screening Matrix 3 Lower Derwent Valley RAMSAR

|                                                                                                                                                                                                                                                                  |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|---|---|------------------|---|---|------------------------|----------|----------|
| Name of European site and designation: Lower Derwent Valley RAMSAR                                                                                                                                                                                               |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| EU Code: UK11037                                                                                                                                                                                                                                                 |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| Distance to NSIP: 5.1 km to the Power Station Site, 5.7 km to the Pipeline Area                                                                                                                                                                                  |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| European site features                                                                                                                                                                                                                                           | Likely effects of NSIP |          |          |                      |   |   |                  |   |   |                        |          |          |
| Stage of Development                                                                                                                                                                                                                                             | Habitat Degradation    |          |          | Species Displacement |   |   | Direct Mortality |   |   | In Combination Effects |          |          |
|                                                                                                                                                                                                                                                                  | C                      | O        | D        | C                    | O | D | C                | O | D | C                      | O        | D        |
| The river and flood meadows play a substantial role in the hydrological and ecological functioning of the Humber Basin)                                                                                                                                          | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(d)               | ✓<br>(e) | ✗<br>(d) |
| Rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates as well as a leafhopper, <i>Cicadula ornate</i> for which Lower Derwent Valley is the only known site in Great Britain. | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(d)               | ✓<br>(e) | ✗<br>(d) |



|                                                                                                                                                                                           |          |          |          |          |          |          |          |          |          |          |          |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Staging post for passage birds in spring. Of particular note are the nationally important numbers of Ruff, <i>Philomachus pugnax</i> and Whimbrel, <i>Numenius phaeopus</i> .             | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(d) | ✓<br>(e) | ✗<br>(d) |
| Regularly supports 20,000 or more waterbirds                                                                                                                                              | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(d) | ✓<br>(e) | ✗<br>(d) |
| Regularly supports 1% of the individuals in a population of the following species or subspecies of waterbird: Eurasian wigeon, <i>Anas Penelope</i> and Eurasian teal, <i>Anas crecca</i> | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(d) | ✓<br>(e) | ✗<br>(d) |

Evidence supporting conclusions:

- A. The Ramsar site is located outside of the Proposed Scheme footprint (in excess of 5 km from the Proposed Scheme). At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). The Ramsar site is also upstream of the River Ouse and beyond the tidal range, meaning there is no pathway by which water-borne pollutants could be transported far enough upstream to impact Ramsar site habitats. The hydrological and ecological functioning of the Ramsar site would not therefore be affected and no LSE are predicted to arise.

- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Lower Derwent Valley Ramsar site. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.
- C. Monthly wintering bird surveys were carried out between November 2017 and March 2018 (see paragraph 9.4.18 of the ES Biodiversity chapter (Examination Library Ref APP-077)). Breeding bird surveys between March and June 2018 (Examination Library Ref: REP1-010). None of the bird species identified on the citation for the Lower Derwent Valley Ramsar site were recorded during these surveys, with the exception of a peak count of four (4) Eurasian teal, recorded at a pond at Abbey Farm, approximately 150 m north of the Proposed Scheme. This suggests that the Proposed Scheme and adjacent habitats does not include areas of important functionally-linked habitat, which support Ramsar site birds when they are outside the Ramsar site. As such, there is considered to be a negligible risk of disturbance or incidental mortality of Ramsar site birds during any stage of the Proposed Scheme and no LSE are predicted to arise.
- D. The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). In addition, no effects on Ramsar site bird species are predicted to result from construction and decommissioning of the Proposed Scheme. As such no in-combination LSE would occur during the construction and decommissioning phases of the Proposed Scheme.
- E. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the River Derwent SAC as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE, (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

## HRA Screening Matrix 4 Lower Derwent Valley SPA

|                                                                                                                                                                                                                                                                                                                          |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|----------|----------|------------------|----------|----------|------------------------|----------|----------|
| Name of European site and designation: Lower Derwent Valley SPA                                                                                                                                                                                                                                                          |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| EU Code: UK9006092                                                                                                                                                                                                                                                                                                       |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| Distance to NSIP: 5.1 km to the Power Station Site, 5.7 km to the Pipeline Area                                                                                                                                                                                                                                          |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| European site features                                                                                                                                                                                                                                                                                                   | Likely effects of NSIP |          |          |                      |          |          |                  |          |          |                        |          |          |
| Stage of Development                                                                                                                                                                                                                                                                                                     | Habitat Degradation    |          |          | Species Displacement |          |          | Direct Mortality |          |          | In Combination Effects |          |          |
|                                                                                                                                                                                                                                                                                                                          | C                      | O        | D        | C                    | O        | D        | C                | O        | D        | C                      | O        | D        |
| Supporting populations of the following Annex I species; <u>Breeding Season</u> : Northern shoveler <i>Anas clypeata</i> ; <u>Over winter</u> : <i>Eurasian wigeon</i> <i>Anas penelope</i> Bewick's Swan <i>Cygnus columbianus bewickii</i> , Golden Plover <i>Pluvialis apricaria</i> , Ruff <i>Philomachus pugnax</i> | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) | ✗<br>(c)             | ✗<br>(c) | ✗<br>(c) | ✗<br>(c)         | ✗<br>(c) | ✗<br>(c) | ✗<br>(d)               | ✓<br>(e) | ✗<br>(d) |
| Supporting populations of following migratory species; <u>Over winter</u> : Teal <i>Anas crecca</i>                                                                                                                                                                                                                      | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) | ✗<br>(c)             | ✗<br>(c) | ✗<br>(c) | ✗<br>(c)         | ✗<br>(c) | ✗<br>(c) | ✗<br>(d)               | ✓<br>(e) | ✗<br>(d) |

|                      |     |     |     |     |     |     |     |     |     |     |     |     |
|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Waterbird Assemblage | ✗   | ✓   | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✗   | ✓   | ✗   |
|                      | (a) | (b) | (a) | (c) | (c) | (c) | (c) | (c) | (c) | (d) | (e) | (d) |

Evidence supporting conclusions:

- A. The designated feature is outside of the Proposed Scheme footprint with the SPA in excess of 5 km from the Proposed Scheme. At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). The SPA is also upstream of the River Ouse and beyond the tidal range, meaning there is no pathway by which water-borne pollutants could be transported far enough upstream to impact SPA habitats. There would therefore be no resultant degradation of habitats supporting SPA bird species and no LSE are predicted to arise.
- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Lower Derwent Valley SPA. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.
- C. Monthly wintering bird surveys were carried out between November 2017 and March 2018 (see paragraph 9.4.18 of the ES Biodiversity chapter (Examination Library Ref APP-077)). Breeding bird surveys between March and June 2018 (Examination Library Ref: REP1-010). None of the bird species identified on the citation for the Lower Derwent Valley SPA were recorded during these surveys, with the exception of a peak count of four (4) Eurasian teal, recorded at a pond at Abbey Farm, approximately 150 m north of the Proposed Scheme. This suggests that the Proposed Scheme and adjacent habitats does not include areas of important functionally-linked habitat, which support SPA birds when they are outside the SPA. As such, there is considered to be a negligible risk of disturbance or incidental mortality of SPA birds during any stage of the Proposed Scheme and no LSE are predicted to arise.
- D. The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). In addition, no effects on SPA bird species are predicted to result from construction and decommissioning of the Proposed Scheme. As such no in-combination LSE would occur during the construction and decommissioning phases of the Proposed Scheme.

- E. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Lower Derwent Valley SPA as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. The air quality assessment has identified cumulative process contributions that would exceed 1% of the critical load for nitrogen deposition (see Table 6.26 in the ES Air Quality chapter) and 1% of the critical level for annual mean ammonia concentrations (see Table 6.24 of the ES Air Quality chapter). This issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

## HRA Screening Matrix 5: Humber Estuary SPA

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|-----|----------------------|-----|-----|------------------|-----|-----|------------------------|-----|-----|
| Name of European site and designation: Humber Estuary SPA                                                                                                                                                                                                                                                                                                                                                                                                                                        |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
| EU Code: UK9006111                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
| Distance to NSIP: 6.5 km to the Power Station Site, 6.0 km to the Pipeline Area                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
| European site features                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Likely effects of NSIP |     |     |                      |     |     |                  |     |     |                        |     |     |
| Stage of Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Habitat Degradation    |     |     | Species Displacement |     |     | Direct Mortality |     |     | In Combination Effects |     |     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | C                      | O   | D   | C                    | O   | D   | C                | O   | D   | C                      | O   | D   |
| Used regularly by 1% or more of the Great Britain populations of the following Annex I species: Eurasian teal <i>Anas crecca</i> , Eurasian wigeon <i>Anas Penelope</i> , mallard <i>Anas platyrhynchos</i> , turnstone <i>Arenaria interpres</i> , common pochard <i>Aythya farina</i> , greater scaup <i>Aythya marila</i> , Brent goose <i>Branta bernicla bernicla</i> , common goldeneye <i>Bucephala clangula</i> , sanderling <i>Calidris alba</i> , avocet <i>Recurvirostra avosetta</i> | ×                      | ✓   | ×   | ×                    | ×   | ×   | ×                | ×   | ×   | ×                      | ✓   | ×   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (a)                    | (b) | (a) | (c)                  | (c) | (c) | (c)              | (c) | (c) | (d)                    | (e) | (d) |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |          |          |          |          |          |          |          |          |          |          |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Bittern <i>Botaurus stellaris</i> , Hen harrier <i>Circus cyaneus</i> , Golden plover <i>Pluvialis apricaria</i> , Bar-tailed godwit <i>Limosa lapponica</i> , Ruff <i>Philomachus pugnax</i> , Marsh harrier <i>Circus aeruginosus</i> , Little tern <i>Sterna albifrons</i> , common ringed plover <i>Charadrius hiaticula</i> , Eurasian curlew <i>Numenius arquata</i> , whimbrel <i>Numenius phaeopus</i> , greenshank <i>Tringa nebularia</i> , lapwing <i>Vanellus vanellus</i> . |          |          |          |          |          |          |          |          |          |          |          |          |
| Used regularly by 1% or more of the biogeographical populations of the following migratory species: Shelduck <i>Tadorna tadorna</i> , red Knot <i>Calidris canutus</i> , Dunlin <i>Calidris alpina</i> , Redshank <i>Tringa totanus</i> , Black-tailed godwit <i>Limosa limosa</i> , Eurasian oystercatcher <i>Haematopus ostralegus</i> , grey plover                                                                                                                                   | ×<br>(a) | ✓<br>(b) | ×<br>(a) | ×<br>(c) | ×<br>(c) | ×<br>(c) | ×<br>(c) | ×<br>(c) | ×<br>(c) | ×<br>(d) | ✓<br>(e) | ×<br>(d) |



|                                                                                            |          |          |          |          |          |          |          |          |          |          |          |          |
|--------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>Pluvialis squatarola</i>                                                                |          |          |          |          |          |          |          |          |          |          |          |          |
| Assemblage qualification under article 4.2 or use of over 20,000 waterbirds in any season. | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(c) | ✗<br>(d) | ✓<br>(e) | ✗<br>(d) |

Evidence supporting conclusions:

- A. The designated feature is outside of the Proposed Scheme footprint with the SPA in excess of 6 km from the Proposed Scheme. At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). The SPA is also sufficiently far downstream such that no perceptible effects on water quality are predicted to arise during any stage of the Proposed Scheme (see paragraph 12.6.82 of Chapter 12 of the ES). There would therefore be no resultant degradation of designated habitats supporting SPA bird species and no LSE are predicted to arise.
- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Humber Estuary SPA. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.
- C. Monthly wintering bird surveys were carried out between November 2017 and March 2018 (see paragraph 9.4.18 of the ES Biodiversity chapter (Examination Library Ref APP-077)). Breeding bird surveys between March and June 2018 (Examination Library Ref: REP1-010). None of the bird species identified on the citation for the Humber Estuary SPA were recorded during these surveys, with the exception of a peak count of four (4) Eurasian teal and three (3) mallard, recorded at a pond at Abbey Farm, approximately 150 m north of the Proposed Scheme and one (1) lapwing recorded on one occasion in Development Parcel A. This suggests that the Proposed Scheme and adjacent habitats does not include areas of important functionally-linked habitat, which support SPA birds when they are outside the Ramsar site. As such, there is considered to be a negligible risk of disturbance of Ramsar site birds during any stage of the Proposed Scheme and no LSE are predicted to arise.

- D. The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). In addition, no effects on SPA bird species are predicted to result from construction and decommissioning of the Proposed Scheme. As such no in-combination LSE would occur during the construction and decommissioning phases of the Proposed Scheme.
- E. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Humber Estuary SPA as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative impacts. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

## HRA Screening Matrix 6: Humber Estuary Ramsar Site

|                                                                                                                                                                                                                                                                  |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|-----|----------------------|-----|-----|------------------|-----|-----|------------------------|-----|-----|
| Name of European site and designation: Humber Estuary Ramsar Site                                                                                                                                                                                                |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
| EU Code: UK11031                                                                                                                                                                                                                                                 |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
| Distance to NSIP: 6.5 km to the Power Station Site, 6.0 km to the Pipeline Area                                                                                                                                                                                  |                        |     |     |                      |     |     |                  |     |     |                        |     |     |
| European site features                                                                                                                                                                                                                                           | Likely effects of NSIP |     |     |                      |     |     |                  |     |     |                        |     |     |
| Stage of Development                                                                                                                                                                                                                                             | Habitat Degradation    |     |     | Species Displacement |     |     | Direct Mortality |     |     | In Combination Effects |     |     |
|                                                                                                                                                                                                                                                                  | C                      | O   | D   | C                    | O   | D   | C                | O   | D   | C                      | O   | D   |
| Ramsar Criterion 1: The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. | ×                      | ✓   | ×   | ×                    | ×   | ×   | ×                | ×   | ×   | ×                      | ✓   | ×   |
|                                                                                                                                                                                                                                                                  | (a)                    | (b) | (a) | (c)                  | (c) | (c) | (c)              | (c) | (c) | (d)                    | (e) | (d) |
| Ramsar criterion 3<br>The Humber Estuary Ramsar site supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook.                                                                                                                           | ×                      | ✓   | ×   | ×                    | ×   | ×   | ×                | ×   | ×   | ×                      | ✓   | ×   |
|                                                                                                                                                                                                                                                                  | (a)                    | (b) | (a) | (c)                  | (c) | (c) | (c)              | (c) | (c) | (d)                    | (e) | (d) |

|                                                                                                                                                                                                                                                                                                                           |          |          |          |          |          |          |          |          |          |          |          |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i> .   |          |          |          |          |          |          |          |          |          |          |          |          |
| Ramsar criterion 5<br>Assemblages of international importance: 153,934 waterfowl, non-breeding season                                                                                                                                                                                                                     | ✕<br>(a) | ✓<br>(b) | ✕<br>(a) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(d) | ✓<br>(e) | ✕<br>(d) |
| Ramsar criterion 6 – species/populations occurring at levels of international importance: Eurasian golden plover, <i>Pluvialis apricaria</i><br>Altifrons; Red knot, <i>Calidris canutus</i> ;<br>Dunlin, <i>Calidris alpina</i><br>Alpine; Black-tailed godwit, <i>Limosa Islandica</i> ; Common redshank, <i>Tringa</i> | ✕<br>(a) | ✓<br>(b) | ✕<br>(a) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(c) | ✕<br>(d) | ✓<br>(e) | ✕<br>(d) |

|                                                                                                                                                                                                                                                        |          |          |          |          |          |          |          |          |          |          |          |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>totanus</i><br>Brittanica; Common<br>shelduck, <i>Tadorna</i> ; Bar-<br>tailed godwit , <i>Limosa</i><br><i>lapponica</i><br><i>Lapponica</i> ;                                                                                                     |          |          |          |          |          |          |          |          |          |          |          |          |
| Ramsar criterion 8<br>The Humber Estuary<br>acts as an important<br>migration route for<br>both river lamprey<br><i>Lampetra fluviatilis</i><br>and sea lamprey<br><i>Petromyzon marinus</i><br>between coastal<br>waters and their<br>spawning areas. | ✓<br>(f) | ✓<br>(b) | ✓<br>(f) | ✗<br>(h) | ✗<br>(h) | ✗<br>(h) | ✗<br>(h) | ✗<br>(g) | ✗<br>(h) | ✗<br>(d) | ✓<br>(e) | ✗<br>(d) |

Evidence supporting conclusions:

- A. The designated feature is outside of the Proposed Scheme footprint with the Ramsar site in excess of 6 km from the Proposed Scheme. At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). The Ramsar site is also sufficiently far downstream such that no perceptible effects on water quality are predicted to arise during any stage of the Proposed Scheme (see paragraph 12.6.82 of Chapter 12 of the ES). There would therefore be no resultant degradation of designated habitats supporting Ramsar site species and no LSE are predicted to arise.
- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Humber Estuary Ramsar site. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.

- C. Monthly wintering bird surveys were carried out between November 2017 and March 2018 (see paragraph 9.4.18 of the ES Biodiversity chapter). Breeding bird surveys are ongoing, with visits completed in March and April 2018. None of the bird species identified on the citation for the Humber Estuary Ramsar site were recorded during these surveys. This suggests that the Proposed Scheme and adjacent habitats does not include areas of important functional habitat, which support Ramsar site birds when they are outside the Ramsar site. Habitats within the study area for the Proposed Scheme do not provide suitable conditions for natterjack toad or grey seal, both of which are associated with coastal habitats. As such, there is considered to be a negligible risk of disturbance or incidental mortality of Ramsar site species during any stage of the Proposed Scheme, and no LSE are predicted to arise.
- D. The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). As such no in-combination LSE would occur during the construction and decommissioning phases of the Proposed Scheme.
- E. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Humber Estuary Ramsar site as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.
- F. The Ramsar Site is located approximately 6km from the Proposed Scheme. The Ramsar Site is downstream of and hydrologically connected to the Proposed Scheme via the River Ouse, which flows into the Humber Estuary. Due to the intervening distance and associated dilution of any pollution or contamination accidentally released, the Proposed Scheme would not cause any perceptible water quality impacts within the Ramsar Site (see paragraph 12.6.82 of Chapter 12 of the ES). No suitable habitat for river or sea lamprey has been recorded within 50 m of the Site. During construction and decommissioning of the Proposed Scheme activities such as vegetation clearance, demolition of structures and earthworks could result in the incidental release of silt, fuels and other chemicals. Any contaminants released could potentially be transported into the River Ouse via surface water connections, with the River Ouse approximately 85 m from the Proposed Scheme at the closest point. The River Ouse is likely to be used by lamprey migrating between the Humber Estuary and upstream breeding sites. River and sea lamprey are also qualifying interests for The River Derwent SAC, upstream of the Proposed Scheme and also hydrologically connected to the River Ouse. As such, changes in water quality within the Ouse could potentially be transported downstream to the River Derwent. River and sea lamprey forming part of the Humber Estuary Ramsar

site populations could therefore be affected if the condition of habitats within the River Ouse or River Derwent was affected. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to water quality and this issue will be taken forwards for Appropriate Assessment.

- G. The existing water cooling system used within the Existing Drax Power Station Complex will continue to be used for the Proposed Scheme, with the same intake and outflow volumes and temperature of water returning to the River Ouse. As there will be no change in the cooling water infrastructure and therefore any associated risk of fish entrainment, no LSE are predicted to arise (see Paragraph 3.2.17 of Chapter 3 of the ES).
- H. No suitable habitat for Ramsar site fish species has been recorded within 50 m of the Proposed Scheme. The closest suitable watercourse for Ramsar fish species is the River Ouse, which is located approximately 85 m north of the Pipeline Area (see paragraph 9.5.56 of the ES Biodiversity Chapter). Given the absence of suitable habitat within or adjacent to the footprint of the Proposed Scheme, no displacement or mortality of Ramsar fish species is predicted to arise as a result of site clearance or construction activities. As such, no LSE are predicted to arise in relation to displacement or mortality of Ramsar fish species.



## HRA Screening Matrix 7 Humber Estuary SAC

|                                                                                                                                                                                                                                                                                       |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|---|---|------------------|---|---|------------------------|----------|----------|
| Name of European site and designation: Humber Estuary SPA                                                                                                                                                                                                                             |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| EU Code: UK9006111                                                                                                                                                                                                                                                                    |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| Distance to NSIP: 6.5 km to the Power Station Site, 6.0 km to the Pipeline Area                                                                                                                                                                                                       |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| European site features                                                                                                                                                                                                                                                                | Likely effects of NSIP |          |          |                      |   |   |                  |   |   |                        |          |          |
| Stage of Development                                                                                                                                                                                                                                                                  | Habitat Degradation    |          |          | Species Displacement |   |   | Direct Mortality |   |   | In Combination Effects |          |          |
|                                                                                                                                                                                                                                                                                       | C                      | O        | D        | C                    | O | D | C                | O | D | C                      | O        | D        |
| 1130 Estuaries                                                                                                                                                                                                                                                                        | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(c)               | ✓<br>(d) | ✗<br>(c) |
| 1330 Atlantic salt meadows and a range of other sand dune types (H1110 Sandbanks which are slightly covered by sea water all the time; H1140 Mudflats and sandflats not covered by seawater at low tide; H1310 Salicornia and other annuals colonising mud and sand; and 1150 coastal | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(c)               | ✓<br>(d) | ✗<br>(c) |

|                                                                                         |          |          |          |  |  |  |  |  |  |          |          |          |
|-----------------------------------------------------------------------------------------|----------|----------|----------|--|--|--|--|--|--|----------|----------|----------|
| lagoons)                                                                                |          |          |          |  |  |  |  |  |  |          |          |          |
| 1140 Mudflats and sandflats not covered by seawater at low tide                         | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1110 Sandbanks which are slightly covered by sea water all the time                     | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1150 Coastal lagoons *<br>Priority feature                                              | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1310 Salicornia and other annuals colonizing mud and sand                               | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1330 Atlantic salt meadows <i>Glauco-Puccinellietalia maritimae</i>                     | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 2110 Embryonic shifting dunes                                                           | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 2120 "Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes") | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |  |  |  |  |  |  | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |

|                                                                                         |          |          |          |          |          |          |          |          |          |          |          |          |
|-----------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2130 "Fixed coastal dunes with herbaceous vegetation ("grey dunes")" * Priority feature | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |          |          |          |          |          |          | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 2160 Dunes with <i>Hippopha rhamnoides</i>                                              | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) |          |          |          |          |          |          | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1095 Sea lamprey <i>Petromyzon marinus</i>                                              | ✓<br>(e) | ✓<br>(b) | ✓<br>(e) | ✗<br>(h) | ✗<br>(h) | ✗<br>(h) | ✗<br>(h) | ✗<br>(f) | ✗<br>(h) | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1099 River lamprey <i>Lampetra fluviatilis</i>                                          | ✓<br>(e) | ✓<br>(b) | ✓<br>(e) | ✗<br>(h) | ✗<br>(h) | ✗<br>(h) | ✗<br>(h) | ✗<br>(f) | ✗<br>(h) | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |
| 1364 Grey seal <i>Halichoerus grypus</i>                                                | ✗<br>(a) | ✓<br>(b) | ✗<br>(a) | ✗<br>(g) | ✗<br>(g) | ✗<br>(g) | ✗<br>(g) | ✗<br>(g) | ✗<br>(g) | ✗<br>(c) | ✓<br>(d) | ✗<br>(c) |

#### Evidence supporting conclusions:

- A. The designated feature is outside of the Proposed Scheme footprint with the SAC site in excess of 6 km from the Proposed Scheme. At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). The SAC is also sufficiently far downstream such that no perceptible effects on water quality are predicted to arise during any stage of the Proposed Scheme (see paragraph 12.6.82 of Chapter 12 of the ES). There would therefore be no resultant degradation of designated habitats supporting SAC species and no LSE are predicted to arise.
- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Humber Estuary SAC. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a

designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.

- C. The potential for the effects of other Plans and Projects to combine with those of the Proposed Scheme has been considered in the Cumulative effects chapter of the ES (Chapter 17). No significant cumulative effects with other Plans and Projects have been identified during the construction and decommissioning phases of the Proposed Scheme (see the Biodiversity sections of Appendix 17.1 and 17.2 of Chapter 17 of the ES). As such no in-combination LSE would occur during the construction and decommissioning phases of the Proposed Scheme.
- D. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on the Humber Estuary SAC as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.
- E. The SAC is located approximately 6km from the Proposed Scheme. The SAC is downstream of and hydrologically connected to the Proposed Scheme via the River Ouse, which flows into the Humber Estuary. Due to the intervening distance and associated dilution of any pollution or contamination accidentally released, the Proposed Scheme would not cause any perceptible water quality impacts within the SAC (see paragraph 12.6.82 of Chapter 12 of the ES). No suitable habitat for river or sea lamprey has been recorded within 50 m of the Site. During construction and decommissioning of the Proposed Scheme activities such as vegetation clearance, demolition of structures and earthworks could result in the incidental release of silt, fuels and other chemicals. Any contaminants released could however be transported into the River Ouse via surface water connections, with the River Ouse approximately 85 m from the Proposed Scheme at the closest point. The River Ouse is likely to be used by lamprey migrating between the Humber Estuary and upstream breeding sites. River and sea lamprey are also qualifying interests for The River Derwent SAC, upstream of the Proposed Scheme and also hydrologically connected to the River Ouse. As such, changes in water quality within the Ouse could potentially be transported upstream to the River Derwent. River and sea lamprey forming part of the Humber Estuary SAC populations could therefore be affected if the condition of habitats within the River Ouse or River Derwent was affected. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to water quality and this issue will be taken forwards for Appropriate Assessment.

- F. The existing water cooling system used within the Existing Drax Power Station Complex will continue to be used for the Proposed Scheme, with the same intake and outflow volumes and temperature of water returning to the River Ouse. As there will be no change in the cooling water infrastructure and therefore any associated risk of fish entrainment, no LSE are predicted to arise (see Paragraph 3.2.17 of Chapter 3 of the ES).
- G. Grey seal is a species associated primarily with coastal and marine habitats. Although subject to tidal influences, the River Ouse adjacent to the Proposed Scheme does not provide suitable habitat conditions for grey seal. The Proposed Scheme is located several kilometres upstream of the mouth of the estuary with the River Ouse in this location also observed to experience high velocity flows that would further discourage grey seals from travelling upstream from the estuary. As grey seals are highly unlikely to use habitats adjacent to the Proposed Scheme, no LSE are predicted to arise.
- H. No suitable habitat for SAC fish species has been recorded within 50 m of the Proposed Scheme. The closest suitable watercourse for SAC fish species is the River Ouse, which is located approximately 85 m north of the Pipeline Area (see paragraph 9.5.56 of the ES Biodiversity Chapter). Given the absence of suitable habitat within or adjacent to the footprint of the Proposed Scheme, no displacement or mortality of SAC fish species is predicted to arise as a result of site clearance or construction activities. As such, no LSE are predicted to arise in relation to displacement or mortality of SAC fish species.

## HRA Screening Matrix 8: Skipwith Common SAC

|                                                                                 |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
|---------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|---|---|------------------|---|---|------------------------|----------|----------|
| Name of European site and designation: Skipwith Common SAC                      |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| EU Code: UK0030276                                                              |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| Distance to NSIP: 8.5 km to the Power Station Site, 8.0 km to the Pipeline Area |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| European site features                                                          | Likely effects of NSIP |          |          |                      |   |   |                  |   |   |                        |          |          |
| Stage of Development                                                            | Habitat Degradation    |          |          | Species Displacement |   |   | Direct Mortality |   |   | In Combination Effects |          |          |
|                                                                                 | C                      | O        | D        | C                    | O | D | C                | O | D | C                      | O        | D        |
| 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>                    | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(c)               | ✓<br>(d) | ✗<br>(c) |
| 4030 European dry heaths                                                        | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(c)               | ✓<br>(d) | ✗<br>(c) |

### Evidence supporting conclusions:

- A. The SAC is located outside of the Proposed Scheme footprint (in excess of 8 km from the Proposed Scheme). At this distance construction phase air quality impacts would have no perceptible effect (see Appendix 6.2 of the ES Air Quality chapter). There are no surface water connections leading to the SAC from the catchment of the Proposed Scheme, or other impact pathways by which any construction and decommissioning phase impacts could affect the SAC. As such, no resultant LSE are predicted to arise.
- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on Skipwith Common SAC. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition

rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forwards for Appropriate Assessment.

- C. The Proposed Scheme is predicted to have no effects whatsoever on the Skipwith Common SAC during the construction and decommissioning phases of the Proposed Scheme. As such, there are no pathways via which the Proposed Scheme could contribute to an in-combination effect with other plans and projects and no LSE are predicted to occur.
- D. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the ES). This has identified the potential for air quality impacts on Skipwith Common SAC as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.



## HRA Screening Matrix 9: Thorne & Hatfield Moors SPA

|                                                                                                                         |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
|-------------------------------------------------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|----------|----------|------------------|----------|----------|------------------------|----------|----------|
| Name of European site and designation: Thorne & Hatfield Moors SPA                                                      |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| EU Code: UK9005171                                                                                                      |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| Distance to NSIP: 9.3 km to the Power Station Site, 7.6 km to the Pipeline Area                                         |                        |          |          |                      |          |          |                  |          |          |                        |          |          |
| European site features                                                                                                  | Likely effects of NSIP |          |          |                      |          |          |                  |          |          |                        |          |          |
| Stage of Development                                                                                                    | Habitat Degradation    |          |          | Species Displacement |          |          | Direct Mortality |          |          | In Combination Effects |          |          |
|                                                                                                                         | C                      | O        | D        | C                    | O        | D        | C                | O        | D        | C                      | O        | D        |
| Supporting populations of the following Annex I species; <u>Breeding Season</u> : Nightjar <i>Caprimulgus europaeus</i> | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) | ✗<br>(a)             | ✗<br>(a) | ✗<br>(a) | ✗<br>(a)         | ✗<br>(a) | ✗<br>(a) | ✗<br>(c)               | ✓<br>(d) | ✗<br>(c) |

### Evidence supporting conclusions:

- A. The Proposed Scheme is located in excess of 7 km from the SPA. No suitable habitat for nightjar has been recorded at or adjacent to the Proposed Scheme, with an absence of the species' preferred heathland or forestry habitats present (see Table 9-5 of the Biodiversity chapter of the ES). A review of Natural England Priority Habitat mapping and publicly available online aerial photography also suggests that such habitats are absent from areas that are hydrologically connected and downstream of the Proposed Scheme. As such, nightjar are highly unlikely to use any areas of habitat that could be affected by construction or decommissioning activities and as such experience any effects during these stages of the Proposed Scheme. No LSE are therefore predicted to occur.
- B. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on Thorne and Hatfield Moors SPA. Air quality

impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law (Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forward for Appropriate Assessment.

- C. The Proposed Scheme alone is predicted to have no effects whatsoever on Thorne and Hatfield Moors SPA during the construction and decommissioning phases. As such, there are no pathways via which the Proposed Scheme could contribute to an in-combination effect with other plans and projects and no LSE are predicted to occur.
- D. Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified that there would be no significant air quality impacts on Thorne and Hatfield Moor SPA as a result of the Proposed Scheme alone. There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

## HRA Screening Matrix 10: Thorne Moor SAC

|                                                                                 |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
|---------------------------------------------------------------------------------|------------------------|----------|----------|----------------------|---|---|------------------|---|---|------------------------|----------|----------|
| Name of European site and designation: Thorne Moor SAC                          |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| EU Code: UK0012915                                                              |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| Distance to NSIP: 9.3 km to the Power Station Site, 7.6 km to the Pipeline Area |                        |          |          |                      |   |   |                  |   |   |                        |          |          |
| European site features                                                          | Likely effects of NSIP |          |          |                      |   |   |                  |   |   |                        |          |          |
| Stage of Development                                                            | Habitat Degradation    |          |          | Species Displacement |   |   | Direct Mortality |   |   | In Combination Effects |          |          |
|                                                                                 | C                      | O        | D        | C                    | O | D | C                | O | D | C                      | O        | D        |
| 7120 Degraded raised bogs still capable of natural regeneration                 | ✗<br>(a)               | ✓<br>(b) | ✗<br>(a) |                      |   |   |                  |   |   | ✗<br>(c)               | ✓<br>(d) | ✗<br>(c) |

### Evidence supporting conclusions:

- (a) The Proposed Scheme is located in excess of 7 km from the SAC. No raised bog or other habitats that could have a supporting role for habitats within the SAC are present on or adjacent to the Site (see Table 9-5 of the Biodiversity chapter of the ES). The SAC is located outside the drainage catchment of the Proposed Scheme, so could not be subject to any hydrological effects arising from the Proposed Scheme. No other impact pathways by which the SAC could be affected by the Proposed Scheme have been identified. No effects on SAC habitats are therefore expected to occur during construction and decommissioning. As such, no LSE predicted to occur.
- (b) Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on Thorne Moor SAC. Air quality impacts on designated sites are usually assessed against 'critical levels' and 'critical loads'. Critical levels and critical loads are concentrations and deposition rates of pollutants, below which there is considered to be no potential for harm to a particular habitat type or qualifying feature of a designated site. In the absence of proposed mitigation measures (which cannot be taken into account at the screening stage on the basis of recent case law

(Ref 9.51)), emissions from the Proposed Scheme could potentially lead to exceedances of critical levels for NO<sub>x</sub> and NH<sub>3</sub> and exceedances of critical loads for nitrogen deposition and acidification. There is therefore considered to be the potential for Likely Significant Effects (LSE) in relation to air quality and this issue will be taken forward for Appropriate Assessment.

- (c) The Proposed Scheme alone is predicted to have no effects whatsoever on Thorne Moor SAC during the construction and decommissioning phases. As such, there are no pathways via which the Proposed Scheme could contribute to an in-combination effect with other plans and projects and no LSE are predicted to occur.
- (d) Potential air quality impacts on designated sites have been assessed through dispersion modelling, including European Sites (see Chapter 6 (Air Quality) of the Environmental Statement (ES)). This has identified the potential for air quality impacts on Thorne Moor SAC as a result of the Proposed Scheme alone (see (b) above). There is the potential for emissions generated by the Proposed Scheme to combine with those from other emitting developments, leading to increased cumulative effects. Other relevant developments are identified in Appendices 17.1 and 17.2 of the Cumulative Effects chapter of the ES. Given that emissions from the Proposed Scheme alone could lead to LSE (and there is also the potential for in-combination air quality effects to lead to LSE), this issue will therefore be taken forwards for Stage 2 Appropriate Assessment.

Planning Inspectorate

Advice Note 10

Habitats Regulations Assessment

Appendix 2: Drax Repower HRA Integrity Matrices (submitted for  
Deadline 2)



## STAGE 2: EFFECTS ON INTEGRITY

Likely significant effects have been identified for the following sites:

- River Derwent SAC
- Lower Derwent Valley Ramsar
- Lower Derwent Valley SAC
- Lower Derwent Valley SPA
- Humber Estuary SAC
- Humber Estuary SPA
- Humber Estuary Ramsar
- Skipwith Common SAC
- Thorne and Hatfield Moors SPA
- Thorne Moors SAC

These sites have been subject to further assessment in order to establish if the NSIP could have an adverse effect on their integrity. Evidence for the conclusions reached on integrity is detailed within the footnotes to the matrices below.

### Matrix Key

✓ = Adverse effect on integrity cannot be excluded

✗ = Adverse effect on integrity can be excluded

C = construction

O = operation

D = decommissioning





## HRA Integrity Matrix 1: River Derwent SAC

|                                                                                                                                  |                             |   |   |                                            |      |      |                                           |      |   |                  |   |   |                        |      |   |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---|---|--------------------------------------------|------|------|-------------------------------------------|------|---|------------------|---|---|------------------------|------|---|
| Name of European site and designation: River Derwent SAC                                                                         |                             |   |   |                                            |      |      |                                           |      |   |                  |   |   |                        |      |   |
| EU Code: UK0030253                                                                                                               |                             |   |   |                                            |      |      |                                           |      |   |                  |   |   |                        |      |   |
| Distance to NSIP 0.8 km to the Power Station Site, 1.1km to the Pipeline Area                                                    |                             |   |   |                                            |      |      |                                           |      |   |                  |   |   |                        |      |   |
| European site features                                                                                                           | Adverse effect on integrity |   |   |                                            |      |      |                                           |      |   |                  |   |   |                        |      |   |
| Effect                                                                                                                           | Species Displacement        |   |   | Habitat Degradation effects (hydrological) |      |      | Habitat degradation Effects (Air Quality) |      |   | Direct mortality |   |   | In combination effects |      |   |
| Stage of Development                                                                                                             | C                           | O | D | C                                          | O    | D    | C                                         | O    | D | C                | O | D | C                      | O    | D |
| 3260 Water courses of plain to montane levels with the <u>Ranunculon fluitantis</u> and <u>Callitricho-Batrachion</u> vegetation |                             |   |   | X(a)                                       | X(a) | X(a) |                                           | X(d) |   |                  |   |   |                        | X(d) |   |
| 1099 River lamprey <u>Lampetra fluviatilis</u>                                                                                   |                             |   |   | X(b)                                       | X(b) | X(b) |                                           | X(d) |   |                  |   |   |                        | X(d) |   |
| 1095 Sea lamprey <u>Petromyzon marinus</u>                                                                                       |                             |   |   | X(b)                                       | X(b) | X(b) |                                           | X(d) |   |                  |   |   |                        | X(d) |   |
| 1163 Bullhead <u>Cottus gobio</u>                                                                                                |                             |   |   | X(b)                                       | X(b) | X(b) |                                           | X(d) |   |                  |   |   |                        | X(d) |   |

|                               |      |  |      |      |      |      |  |      |  |      |  |      |  |      |  |
|-------------------------------|------|--|------|------|------|------|--|------|--|------|--|------|--|------|--|
| 1355 Otter <i>Lutra lutra</i> | X(c) |  | X(c) | X(b) | X(b) | X(b) |  | X(d) |  | X(c) |  | X(c) |  | X(d) |  |
|-------------------------------|------|--|------|------|------|------|--|------|--|------|--|------|--|------|--|

### Evidence supporting conclusions

- a. No adverse effects on the integrity of the River Derwent SAC habitats are predicted as a result of construction or operational phase hydrological impacts. This is because there is limited potential for any upstream transport of silt or other pollutants from the Proposed Scheme reaching the River Derwent (paragraph 12.3.4 of the Water Resources, Quality and Hydrology ES chapter) and due to the presence of the Barmby Tidal barrage at the mouth of the River Derwent, which inhibits upstream flows into the Derwent from the Ouse.
- b. As set out in paragraph (a), above, hydrological impacts would lead to no adverse effects on the integrity of the River Derwent SAC habitats and hence their suitability to support SAC fish species or otter. It is however also necessary to consider the potential implications of water quality changes in the River Ouse (downstream of the River Derwent), in relation to SAC fish species and otter. This is because migratory species (river lamprey and sea lamprey) could use the section of the Ouse between the Humber Estuary (downstream of the Proposed Scheme) and the River Derwent SAC (upstream of the Proposed Scheme). Otter have large home ranges and individuals associated with the River Derwent SAC are also likely to use the River Ouse and potentially parts of the Humber Estuary. The proposed CEMP will control potential hydrological impacts during construction and decommissioning, with no deterioration of the WFD status of the River Ouse (located upstream of the Humber Estuary SAC, SPA and Ramsar Site and downstream of the River Derwent SAC) predicted (paragraphs 12.6.13 of the Water Resources, Quality and Hydrology Chapter). During operation, existing and proposed drainage measures would ensure any impacts on water quality within suitable water features for migratory fish species and otters would be negligible (see paragraphs 12.6.50 – 12.6.53 of the ES Water Resources, Quality and Hydrology Chapter). No perceptible changes in the water quality of the Humber Estuary are predicted (paragraph 12.6.13 of the water quality resources chapter).

Bullhead are not expected to be present within the River Ouse downstream or immediately upstream of the Proposed Scheme. This is because bullhead is a freshwater species that does not inhabit tidal waters. The EA identify saline intrusion as a potential water quality issue for groundwater at the Site (paragraph 12.5.15 of the Water Resources, Quality and Hydrology Chapter). Tidal influences also raise the level of the River Ouse by approximately 4.2 m (paragraph 12.5.12 of

the Water Resources, Quality and Hydrology Chapter), further confirming tidal influences in the stretch of the Ouse adjacent to and downstream of the Site.

- c. Evidence of otter has been recorded along the River Ouse and on some of the smaller watercourses along the route of the Gas Pipeline (paragraphs 9.5.28 – 9.5.32 of the ES Biodiversity Chapter). Installation of the Gas Pipeline will result in temporary disturbance of habitats within the Pipeline Area. No watercourses are expected to be directly physically impacted, where the pipeline is installed under watercourses using trenchless techniques (see paragraph 3.3.19 of the ES Site and Project Description Chapter). However, where open-cut techniques are used, there may be temporary impacts to otter commuting, foraging and resting habitat. Mitigation will be implemented to negate any potential impacts on commuting or foraging otter. Specifically, the maintenance of adequate channel and bankside habitat during the works to ensure commuting can continue unimpeded (with directional fencing used where necessary); the avoidance of night-time working and lighting; and construction best-practice to ensure otters do not come into contact with open trenches and other areas where otters may be trapped and injured or killed. Current survey data demonstrates that no potential resting sites will be impacted upon. Updated survey data prior to construction will determine whether this situation remains. If resting sites are found during updated survey to be impacted, mitigation will be implemented (comprising replacement habitat) to ensure no net loss and maintenance of the species Favourable Conservation Status. This, in turn will ensure no adverse effects on integrity. Construction of the Gas Pipeline would take up to a year including construction of the Gas Receiving Facility and Above Ground Installation. Installation of the Gas Pipeline only is expected to take approximately four months (see Paragraph 3.3.27 of the ES Site and Project Description Chapter). The Project CEMP would also include measures to limit indirect effects on watercourses (see paragraph 12.6.13 of the ES Water Resources, Quality and Hydrology Chapter) and measures to prevent the incidental mortality of otters (see paragraph 9.6.74 of the ES Biodiversity Chapter) during installation of the pipeline. Given the above measures, any displacement of otters that occurs during construction, operation or decommissioning of the Proposed Scheme would be minor and short term, with no perceptible effect on the SAC population. This would not compromise the favourable conservation status of populations associated with the River Derwent SAC and hence there would be no adverse effect on the integrity of the SAC (see Paragraphs 9.6.80, 9.6.87 and 9.6.90 of the ES Biodiversity Chapter).
- d. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Table 6.16, 6.17, 6.21 and 6.23 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a detailed description of the modelling assumptions). This includes the predicted impact of the Proposed

Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 and 6.23. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e operation of both units with Selective Catalytic Reduction (SCR) and the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of Chapter 6 of the ES).

The air quality modelling shows that the Proposed Scheme will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The River Derwent (and the hydrologically connected downstream River Ouse) is not considered to be sensitive to the effects of nitrogen deposition and associated acidification, due to the River's water quality. Environment Agency (EA) monitoring data indicates that the River Derwent is strongly phosphate limited. In phosphate limited systems, additional inputs of nitrogen have limited effects on plant productivity, as phosphate is the primary limiting nutrient. As such, additional inputs from the Proposed Scheme, both alone or in-combination with other Plans or Projects, would be unlikely to lead to any perceptible eutrophication effects on freshwater habitats within the SAC.

It should also be noted that the current condition of the SSSI is favourable, despite the large inputs of nitrogen from existing diffuse agricultural sources. The constituent SSSI Units of the River Derwent SAC (River Derwent SSSI and Newton Mask SSSI) within 15 km of the Project Site, were all assessed as being in 'favourable', 'unfavourable recovering' or 'unfavourable no change' condition when last assessed. A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 5.53% of the River Derwent SSSI was reported as being in 'favourable' condition, 93.69% recorded as being in 'unfavourable – recovering' condition, with the remaining 0.78% classed as 'unfavourable no change'. Unit 21 of this SSSI was classed as 'unfavourable no change' due to ponds having been filled in and scrub management being required. For the Newton Mask SSSI, 100% of the SSSI units are reported to be in 'favourable' condition. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments of the Site.

In light of the information presented above, no adverse effects to the integrity of the SAC are predicted.

## HRA Integrity Matrix 2: Lower Derwent Valley SAC

|                                                                                                                                               |                             |         |      |                      |      |      |                  |      |      |                        |      |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------|------|----------------------|------|------|------------------|------|------|------------------------|------|---|
| Name of European site and designation: Lower Derwent SAC                                                                                      |                             |         |      |                      |      |      |                  |      |      |                        |      |   |
| EU Code: UK0012844                                                                                                                            |                             |         |      |                      |      |      |                  |      |      |                        |      |   |
| Distance to NSIP: 5.1 km to the Power Station Site, 5.7 km to the Pipeline Area                                                               |                             |         |      |                      |      |      |                  |      |      |                        |      |   |
| European site features                                                                                                                        | Adverse effect on integrity |         |      |                      |      |      |                  |      |      |                        |      |   |
| Effect                                                                                                                                        | Habitat degradation         |         |      | Species Displacement |      |      | Direct mortality |      |      | In combination effects |      |   |
| Stage of Development                                                                                                                          | C                           | O       | D    | C                    | O    | D    | C                | O    | D    | C                      | O    | D |
| 6510 Lowland hay meadows<br><i>Alopecurus pratensis</i> ,<br><i>Sanguisorba officinalis</i>                                                   |                             | X(a)    |      |                      |      |      |                  |      |      |                        | X(a) |   |
| 91E0 Alluvial forests with Alder<br><i>Alnus glutinosa</i> and Ash<br><i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae) |                             | X(a)    |      |                      |      |      |                  |      |      |                        | X(a) |   |
| 1355 Otter <i>Lutra lutra</i>                                                                                                                 | X(b)                        | X(a, b) | X(b) | X(c)                 | X(c) | X(c) | X(c)             | X(c) | X(c) |                        | X(a) |   |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.16 to 6.20 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 to 6.25. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme (taking into account embedded mitigation measures to minimise operational emissions of NO<sub>x</sub> and NH<sub>3</sub>) will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto the Lower Derwent Valley SAC. There is a maximum modelled process contribution of 0.8% and 0.2% for nitrogen and acid deposition respectively (see Table 6.19 and 6.20 of the ES Air Quality Chapter, respectively). The process contribution from the Proposed Scheme also reduces with increasing distance from the stacks. For example, the maximum process contribution for nitrogen deposition onto the Brighton Meadows SSSI component of the SAC (the closest part of the site), is predicted to be 0.8%. The maximum process contribution for nitrogen deposition onto the Derwent Ings SSSI component of the SAC (approximately 2 km further north than Brighton Meadows SSSI), is predicted to be 0.5%. As the impacts of the Proposed Scheme alone lead to no exceedances of critical levels or process contributions in excess of 1% of critical loads, no adverse effects on the integrity of the SAC are predicted to arise.

Information on the Air Pollution Information Service (APIS) website (Ref 9.54) identifies that the 91E0 Alluvial forests habitat type is not susceptible to the effects of eutrophication or acidification. As such, nitrogen deposition and acidification from the Proposed Scheme is not predicted to have any perceptible effects on this habitat. The SSSI citations for the underpinning SSSI components of the SAC are also identified as being comprised of lowland meadow habitats, with the 91E0 habitat type associated with sections of the SAC in excess of 15 km from the Proposed Scheme. In light of the above, the Proposed Scheme is predicted to have no perceptible air quality impacts on this habitat type.

The maximum predicted cumulative impact of the Proposed Scheme would be 1.6% for nitrogen deposition and 0.3% for acidification (see Tables 6.25 and 6.26 of the ES Air Quality Chapter). The cumulative acid deposition impact is predicted

to lead to a *de minimus* in-combination effect, which will lead to no perceptible vegetative change of SAC habitats. The cumulative nitrogen deposition impact reduces with increasing distance from site. Whilst a maximum impact of 1.6% of critical load is predicted over the Brighton Meadows SSSI component of the SAC, the maximum impact over the more distant Derwent Ings SSSI component is 1.4%, declining further with increasing distance from the Proposed Scheme. The Brighton Meadows SSSI has an area of 38.79 ha, representing approximately 4.2% by area of the SAC.

The constituent SSSI Units of the Lower Derwent SAC (Brighton Meadows SSSI and Derwent Ings SSSI) within 15 km of the Site, were all assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed despite the large inputs of nitrogen from existing sources (which exceed the lower band of the site relevant critical load). A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 92.86% of the Brighton Meadows SSSI was reported as being in 'favourable' condition, with the remaining 7.14% recorded as being in 'unfavourable – recovering' condition. For the Derwent Ings SSSI, 59.7% of the SSSI units are reported to be in 'favourable' condition, with the remaining 40.3% of the SSSI units in 'unfavourable – recovering' condition. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments of the Site.

The contribution of the Proposed Scheme, whether assessed alone (see below) or in combination with other industrial processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.

- Taking into account the conservatism built into the air quality assessment including:
- Continuous full load operation for the year;
- 70% conversion of NO<sub>x</sub> to NO<sub>2</sub>;
- Assessment of maximum impacts anywhere in a designated site, irrespective of area represented by the maximum and the presence of particular habitats;
- Assessment against the lower threshold of recommended critical loads;



- Assessment of maximum impacts across 5 modelled years; and
- Emissions continually at the limit set in the IED / Bref Conclusions and or recommended emissions ceiling

The impacts of the Proposed Scheme both alone and in combination with other relevant development proposals will be small overall and likely imperceptible.

Given the conservatism of the air quality modelling and the low magnitude of the cumulative air quality impacts, no adverse effects to the integrity of the Lower Derwent Valley SAC are predicted to arise.

- b. As set out in paragraph (a), above, no adverse effects on the integrity of the River Derwent SAC habitats and hence their suitability to support otter are predicted as a result of hydrological impacts. It is also necessary to consider the potential implications of water quality changes in the River Ouse (downstream of the River Derwent), in relation to otter. This is because otter have large home ranges (see paragraph 9.6.77 – 9.6.78 of the Biodiversity Chapter of the ES) and individuals associated with the River Derwent SAC are also likely to use the River Ouse and potentially parts of the Humber Estuary. The proposed CEMP will control potential hydrological impacts during construction and decommissioning, with no deterioration of the WFD status of the River Ouse (located upstream of the Humber Estuary SAC, SPA and Ramsar Site and downstream of the River Derwent SAC) predicted (paragraphs 12.6.13 of the Water Resources, Quality and Hydrology Chapter). During operation, existing and proposed drainage measures would ensure any impacts on water quality within suitable water features for otters would be negligible (see paragraphs 12.6.50 – 12.6.53 of the ES Water Resources, Quality and Hydrology Chapter). As such, no adverse effects on the otter population associated with the Lower Derwent Valley SAC are predicted to arise.
- c. Evidence of otter has been recorded along the River Ouse and on some of the smaller watercourses along the route of the Gas Pipeline (paragraphs 9.5.28 – 9.5.32 of the ES Biodiversity Chapter). Installation of the Gas Pipeline will result in temporary disturbance of habitats within the Pipeline Area. No watercourses are expected to be directly physically impacted, where the pipeline is installed under watercourses using trenchless techniques (see paragraph 3.3.19 of the ES Site and Project Description Chapter). However, where open-cut techniques are used, there may be temporary impacts to otter commuting, foraging and resting habitat. Mitigation will be implemented to negate any potential impacts on commuting or foraging otter. Specifically, the maintenance of adequate channel and bankside habitat during the works to ensure commuting can continue unimpeded (with directional fencing used where necessary); the avoidance of night-time working and lighting; and construction best-practice to ensure otters do not come into contact with open trenches and

other areas where otters may be trapped and injured or killed. Current survey data demonstrates that no potential resting sites will be impacted upon. Updated survey data prior to construction will determine whether this situation remains. If resting sites are found during updated survey to be impacted, mitigation will be implemented (comprising replacement habitat) to ensure no net loss and maintenance of the species Favourable Conservation Status. This, in turn will ensure no adverse effects on integrity. Construction of the Gas Pipeline would take up to a year including construction of the Gas Receiving Facility and Above Ground Installation. Installation of the Gas Pipeline only is expected to take approximately four months (see Paragraph 3.3.27 of the ES Site and Project Description Chapter). The Project CEMP would also include measures to limit indirect effects on watercourses (see paragraph 12.6.13 of the ES Water Resources, Quality and Hydrology Chapter). Measures to prevent the incidental mortality of otters and allow their continued movement along watercourses within the Pipeline Area during construction (see paragraph 9.6.74 of the ES Biodiversity Chapter) would also be included. Given the above, any displacement of otters that occurs during construction, operation or decommissioning of the Proposed Scheme would be minor and short term, with negligible effects on the SAC population. This would not compromise the favourable conservation status of populations associated with the Lower Derwent Valley SAC and hence there would be no adverse effect on the integrity of the SAC (see Paragraphs 9.6.80, 9.6.87 and 9.6.90 of the ES Biodiversity Chapter).

## HRA Integrity Matrix 3: Lower Derwent Valley SPA

|                                                                                                                                                                                                                                                                                                                 |                                   |      |   |                                      |      |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------|---|--------------------------------------|------|---|
| Name of European site and designation: Lower Derwent Valley SPA                                                                                                                                                                                                                                                 |                                   |      |   |                                      |      |   |
| EU Code: UK9006092                                                                                                                                                                                                                                                                                              |                                   |      |   |                                      |      |   |
| Distance to NSIP: 5.1 km to the Power Station Site, 5.7 km to the Pipeline Area                                                                                                                                                                                                                                 |                                   |      |   |                                      |      |   |
| European site features                                                                                                                                                                                                                                                                                          | Adverse effect on integrity       |      |   | Adverse effect on integrity          |      |   |
| Effect                                                                                                                                                                                                                                                                                                          | Habitat Degradation (air quality) |      |   | In combination effects (air quality) |      |   |
| Stage of Development                                                                                                                                                                                                                                                                                            | C                                 | O    | D | C                                    | O    | D |
| Supporting populations of the following Annex I species; <u>Breeding Season</u> : shoveler <i>Anas clypeata</i> ; <u>Over winter</u> : <i>Eurasian wigeon</i> <i>Anas penelope</i> Bewick's Swan <i>Cygnus columbianus bewickii</i> , Golden Plover <i>Pluvialis apricaria</i> , Ruff <i>Philomachus pugnax</i> |                                   | X(a) |   |                                      | X(a) |   |

|                                                                                                           |  |      |  |  |      |  |
|-----------------------------------------------------------------------------------------------------------|--|------|--|--|------|--|
| Supporting populations of following migratory species;<br><u>Over winter</u> : Teal<br><i>Anas crecca</i> |  | X(a) |  |  | X(a) |  |
| Waterbird assemblage                                                                                      |  | X(a) |  |  | X(a) |  |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.16 to 6.20 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 to 6.25. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e. operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme (taking into account embedded mitigation measures to minimise operational emissions of NO<sub>x</sub> and NH<sub>3</sub>) will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto the Lower Derwent Valley SPA. There is a maximum modelled process contribution of 0.8% and 0.2% for nitrogen and acid deposition respectively (see Table 6.19 and 6.20 of the ES Air Quality Chapter, respectively). The process contribution from the Proposed Scheme also reduces with increasing distance from the stacks. For example, the maximum process contribution for nitrogen deposition onto the Brighton Meadows SSSI component of the SPA (the closest part of the site), is predicted to be 0.8%. The maximum process contribution for nitrogen deposition onto the Derwent Ings SSSI component of the SPA (approximately 2 km further north than Brighton Meadows SSSI), is predicted to be 0.5%. As the impacts of the Proposed Scheme alone lead to no exceedances of critical levels or process contributions in excess of 1% of critical loads, no adverse effects on the integrity of the SAC are predicted to arise.

The maximum predicted cumulative impact of the Proposed Scheme would be 1.6% for nitrogen deposition and 0.3% for acidification (see Tables 6.24 and 6.25 of the ES Air Quality Chapter) for the neutral grassland habitats assessed. The cumulative acid deposition impact is predicted to lead to a *de minimus* in-combination effect, which would lead to no perceptible vegetative change of SPA habitats and hence their role supporting SPA bird species. The cumulative nitrogen deposition impact also reduces with increasing distance from site. Whilst a maximum impact of 1.6% of critical load (Process Contribution from the Proposed Scheme up to 0.6%) is predicted over the Brighton Meadows SSSI component of the SPA, the maximum impact over the more distant Derwent Ings SSSI component is 1.4% (Process Contribution from the Proposed Scheme up to 0.4%), with the Process Contribution from the Proposed Scheme declining further with increasing distance from the Proposed Scheme. The Brighton Meadows SSSI has an area of 38.79 ha, representing approximately 4.2% by area of the SPA.

The constituent SSSI Units of the Lower Derwent SPA (Brighton Meadows SSSI and Derwent Ings SSSI) within 15 km of the Project Site, were all assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed despite the large inputs of nitrogen from existing sources (which exceed the upper band of the site relevant critical load). A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 92.86% of the Brighton Meadows SSSI was reported as being in 'favourable' condition, with the remaining 7.14% recorded as being in 'unfavourable – recovering' condition. For the Derwent Ings SSSI, 59.7% of the SSSI units are reported to be in 'favourable' condition, with the remaining 40.3% of the SSSI units in 'unfavourable – recovering' condition. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments.

The Site relevant critical loads page for the Lower Derwent Valley SPA (reference 9.54 of the ES Biodiversity Chapter) includes advice on the application of critical loads and levels to several of the bird species for which the SPA is designated (golden plover, tundra swan, ruff and Eurasian teal). The advice on critical loads identifies that '*no expected negative impact on species due to impacts on the species' broad habitat*' for Eurasian teal and Ruff. For tundra swan a potential negative impact is identified for standing water habitats, dependent on whether waterbodies are nitrogen or phosphate-limited. Environment Agency (EA) monitoring data indicates that the River Derwent is strongly phosphate limited. In phosphate limited systems, additional inputs of nitrogen have limited effects on plant productivity, as phosphate is the primary limiting nutrient. As such, additional inputs would be unlikely to lead to any perceptible eutrophication effects on standing water habitats within the SPA. For golden plover APIS identifies the Critical Load for neutral grassland habitats as being appropriate, due to the species' use of this habitat type.

Given the above no adverse effects to the integrity of the Lower Derwent Valley SPA are predicted to arise.

#### HRA Integrity Matrix 4: Lower Derwent Valley Ramsar

|                                                                                                                                                                                                                                                                  |                                          |          |          |                                             |          |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------|----------|---------------------------------------------|----------|----------|
| Name of European site and designation: Lower Derwent Valley Ramsar                                                                                                                                                                                               |                                          |          |          |                                             |          |          |
| EU Code: N/A                                                                                                                                                                                                                                                     |                                          |          |          |                                             |          |          |
| Distance to NSIP: 5.1 km to the Power Station Site, 5.7 km to the Pipeline Area                                                                                                                                                                                  |                                          |          |          |                                             |          |          |
| European site features                                                                                                                                                                                                                                           | Adverse effect on integrity              |          |          | Adverse effect on integrity                 |          |          |
| <i>Effect</i>                                                                                                                                                                                                                                                    | <i>Habitat Degradation (air quality)</i> |          |          | <i>In combination effects (air quality)</i> |          |          |
| <i>Stage of Development</i>                                                                                                                                                                                                                                      | <i>C</i>                                 | <i>O</i> | <i>D</i> | <i>C</i>                                    | <i>O</i> | <i>D</i> |
| The river and flood meadows play a substantial role in the hydrological and ecological functioning of the Humber Basin                                                                                                                                           |                                          | X(a)     |          |                                             | X(a)     |          |
| Rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates as well as a leafhopper, <i>Cicadula ornate</i> for which Lower Derwent Valley is the only known site in Great Britain. |                                          | X(a)     |          |                                             | X(a)     |          |

|                                                                                                                                                                                             |  |      |  |  |      |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|--|--|------|--|
| Staging post for passage birds in spring. Of particular note are the nationally important numbers of Ruff, <i>Philomachus pugnax</i> and Whimbrel, <i>Numenius phaeopus</i> .               |  | X(a) |  |  | X(a) |  |
| Regularly supports 20,000 or more waterbirds                                                                                                                                                |  | X(a) |  |  | X(a) |  |
| Regularly supports 1% of the individuals in a population of the following species or subspecies of waterbird: Eurasian wigeon , <i>Anas Penelope</i> and Eurasian teal , <i>Anas crecca</i> |  | X(a) |  |  | X(a) |  |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.16 to 6.20 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 to 6.25. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme (taking into account embedded mitigation measures to minimise operational emissions of NO<sub>x</sub> and NH<sub>3</sub>) will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto the Lower Derwent Valley Ramsar Site. There is a maximum modelled process contribution of 0.8% and 0.2% for nitrogen and acid deposition respectively (see Table 6.19 and 6.20 of the ES Air Quality Chapter, respectively). The process contribution from the Proposed Scheme also reduces with increasing distance from the Proposed Scheme stacks. For example, the maximum process contribution for nitrogen deposition onto the Brighton Meadows SSSI component of the Ramsar Site (the closest part of the site), is predicted to be 0.8%. The maximum process contribution for nitrogen



deposition onto the Derwent Ings SSSI component of the Ramsar Site (approximately 2 km further north than Brighton Meadows SSSI), is predicted to be 0.5%. As the impacts of the Proposed Scheme alone lead to no exceedances of critical levels or process contributions in excess of 1% of critical loads, no adverse effects on the integrity of the SAC are predicted to arise.

The maximum predicted cumulative impact of the Proposed Scheme would be 1.6% for nitrogen deposition and 0.3% for acidification (see Tables 6.24 and 6.25 of the ES Air Quality Chapter) for the neutral grassland habitats assessed. The cumulative acid deposition impact is predicted to lead to a *de minimus* in-combination effect, which will lead to no perceptible vegetative change of Ramsar Site habitats. The cumulative nitrogen deposition impact also reduces with increasing distance from the Proposed Scheme. Whilst a maximum impact of 1.6% of critical load (Process Contribution from the Proposed Scheme up to 0.6%) is predicted over the Brighton Meadows SSSI component of the Ramsar Site, the maximum impact over the more distant Derwent Ings SSSI component is 1.4% (Process Contribution from the Proposed Scheme up to 0.4%), with the Process Contribution from the Proposed Scheme declining further with increasing distance from the Proposed Scheme. The Brighton Meadows SSSI has an area of 38.79 ha, representing approximately 4.2% by area of the Ramsar Site.

The constituent SSSI Units of the Lower Derwent SPA (Brighton Meadows SSSI and Derwent Ings SSSI) within 15 km of the Project Site, were all assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed despite current inputs of nitrogen from existing sources (which exceed the site relevant critical load in the equivalent area of SPA). A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 92.86% of the Brighton Meadows SSSI was reported as being in 'favourable' condition, with the remaining 7.14% recorded as being in 'unfavourable – recovering' condition. For the Derwent Ings SSSI, 59.7% of the SSSI units are reported to be in 'favourable' condition, with the remaining 40.3% of the SSSI units in 'unfavourable – recovering' condition. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments of the Site.

The Site relevant critical loads page for the Lower Derwent Valley SPA (reference 9.54 of the ES Biodiversity Chapter) includes advice on the application of critical loads and levels to several of the bird species for which the SPA is designated (golden plover, tundra swan, ruff and Eurasian teal). Ruff and Eurasian teal are also listed in the citation for the Lower Derwent Valley Ramsar Site. The advice on APIS on critical loads identifies that '*no expected negative impact on species due to impacts on the species' broad habitat*' for Ruff. Environment Agency (EA) monitoring data also indicates that the River Derwent is strongly phosphate limited. In phosphate limited systems, additional inputs of nitrogen have limited

effects on plant productivity, as phosphate is the primary limiting nutrient. As such, additional inputs would be unlikely to lead to any perceptible eutrophication effects on standing water habitats within the Ramsar Site.

Given the above and the conservatism of the air quality modelling (see paragraphs 6.5.19 and 6.10.2 of Chapter 6 of the ES), no adverse effects to the integrity of the Lower Derwent Valley SPA are predicted to arise.

## HRA Integrity Matrix 5: Humber Estuary SAC

|                                                                                                                                                                                                                                                                                                |                                        |          |          |                                          |          |          |                                             |          |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------|----------|------------------------------------------|----------|----------|---------------------------------------------|----------|----------|
| Name of European site and designation: Humber Estuary SAC                                                                                                                                                                                                                                      |                                        |          |          |                                          |          |          |                                             |          |          |
| EU Code: UK9006111                                                                                                                                                                                                                                                                             |                                        |          |          |                                          |          |          |                                             |          |          |
| Distance to NSIP: 6.0 km to the Power Station Site, 6.0 km to the Pipeline Area                                                                                                                                                                                                                |                                        |          |          |                                          |          |          |                                             |          |          |
| European site features                                                                                                                                                                                                                                                                         | Adverse effect on integrity            |          |          | Adverse effect on integrity              |          |          | Adverse effect on integrity                 |          |          |
| <i>Effect</i>                                                                                                                                                                                                                                                                                  | <i>Habitat Degradation (hydrology)</i> |          |          | <i>Habitat Degradation (air quality)</i> |          |          | <i>In-combination effects (air quality)</i> |          |          |
| <i>Stage of Development</i>                                                                                                                                                                                                                                                                    | <i>C</i>                               | <i>O</i> | <i>D</i> | <i>C</i>                                 | <i>O</i> | <i>D</i> | <i>C</i>                                    | <i>O</i> | <i>D</i> |
| 1130 Estuaries                                                                                                                                                                                                                                                                                 |                                        |          |          |                                          | X(b)     |          |                                             | X(b)     |          |
| 1330 Atlantic salt meadows and a range of other sand dune types (H1110 Sandbanks which are slightly covered by sea water all the time; H1140 Mudflats and sandflats not covered by seawater at low tide; H1310 Salicornia and other annuals colonising mud and sand; and 1150 coastal lagoons) |                                        |          |          |                                          | X(b)     |          |                                             | X(b)     |          |
| 1140 Mudflats and sandflats not covered by seawater at low tide                                                                                                                                                                                                                                |                                        |          |          |                                          | X(b)     |          |                                             | X(b)     |          |
| 1110 Sandbanks which are slightly covered by sea water all the time                                                                                                                                                                                                                            |                                        |          |          |                                          | X(b)     |          |                                             | X(b)     |          |
| 1150 Coastal lagoons * Priority                                                                                                                                                                                                                                                                |                                        |          |          |                                          | X(b)     |          |                                             | X(b)     |          |

## HRA Integrity Matrices for Drax Repowering

| feature                                                                                  |      |          |      |  |      |  |  |      |  |
|------------------------------------------------------------------------------------------|------|----------|------|--|------|--|--|------|--|
| 1310 Salicornia and other annuals colonizing mud and sand                                |      |          |      |  | X(b) |  |  | X(b) |  |
| 1330 Atlantic salt meadows <i>Glauco-Puccinellietalia maritima</i>                       |      |          |      |  | X(b) |  |  | X(b) |  |
| 2110 Embryonic shifting dunes                                                            |      |          |      |  | X(b) |  |  | X(b) |  |
| 2120 "Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")" |      |          |      |  | X(b) |  |  | X(b) |  |
| 2130 "Fixed coastal dunes with herbaceous vegetation ("grey dunes")" * Priority feature  |      |          |      |  | X(b) |  |  | X(b) |  |
| 2160 Dunes with <i>Hippophia rhamnoides</i>                                              |      |          |      |  | X(b) |  |  | X(b) |  |
| 1095 Sea lamprey <i>Petromyzon marinus</i>                                               | X(a) | X(a / b) | X(a) |  | X(b) |  |  | X(b) |  |
| 1099 River lamprey <i>Lampetra fluviatilis</i>                                           | X(a) | X(a / b) | X(a) |  | X(b) |  |  | X(b) |  |
| 1364 Grey seal <i>Halichoerus grypus</i>                                                 |      |          |      |  | X(b) |  |  | X(b) |  |

- a. No perceptible changes in the water quality of the Humber Estuary are predicted (paragraph 12.6.13 of the water quality resources chapter). It is however necessary to consider the potential implications of water quality changes in the River Ouse upstream of the estuary in relation to SAC fish species. This is because river lamprey and sea lamprey could use the section of the Ouse between the Humber Estuary SAC (downstream of the Proposed Scheme) and the River Derwent SAC (upstream of the Proposed Scheme). There are likely to be population linkages between lamprey using habitats within the Humber Estuary SAC, River Ouse, and upstream River Derwent SAC.

The proposed CEMP will control potential hydrological impacts during construction and decommissioning, with no deterioration of the WFD status of the River Ouse (located upstream of the Humber Estuary SAC, SPA and Ramsar Site

and downstream of the River Derwent SAC) predicted (paragraphs 12.6.13 of the Water Resources, Quality and Hydrology Chapter). During operation, existing and proposed drainage measures would ensure any impacts on water quality within suitable water features for migratory fish species would be negligible (see paragraphs 12.6.50 – 12.6.53 of the ES Water Resources, Quality and Hydrology Chapter).

- b. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.16 to 6.20 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 to 6.25. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e. operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme (taking into account embedded mitigation measures to minimise operational emissions of NO<sub>x</sub> and NH<sub>3</sub>) will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The Proposed Scheme alone will not lead to significant nitrogen deposition onto the Humber Estuary SAC. There is a maximum modelled process contribution of 0.3% for nitrogen deposition (see Table 6.19 and 6.20 of the ES Air Quality Chapter). Humber Estuary habitats occurring within 15 km of the Proposed Scheme are not considered to be sensitive to acidification.

The maximum predicted cumulative deposition impact of the Proposed Scheme would be 0.9% for nitrogen deposition. As stated above, Humber Estuary habitats are not considered to be sensitive to acidification and there would be no exceedances of any critical levels.

Given the conservatism of the air quality modelling (see paragraphs 6.5.19 and 6.10.2 of Chapter 6 of the ES) and the low magnitude of the cumulative air quality impacts, no adverse effects to the integrity of the Humber Estuary SAC are predicted to arise.

## HRA Integrity Matrix 6: Humber Estuary Ramsar Site

|                                                                                                                                                                                                                                                                  |                        |          |   |                        |          |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|---|------------------------|----------|---|
| Name of European site and designation: Humber Estuary Ramsar Site                                                                                                                                                                                                |                        |          |   |                        |          |   |
| EU Code: UK11031                                                                                                                                                                                                                                                 |                        |          |   |                        |          |   |
| Distance to NSIP: 6.5 km to the Power Station Site, 6.0 km to the Pipeline Area                                                                                                                                                                                  |                        |          |   |                        |          |   |
| European site features                                                                                                                                                                                                                                           | Likely effects of NSIP |          |   |                        |          |   |
| Stage of Development                                                                                                                                                                                                                                             | Habitat Degradation    |          |   | In Combination Effects |          |   |
|                                                                                                                                                                                                                                                                  | C                      | O        | D | C                      | O        | D |
| Ramsar Criterion 1: The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. |                        | x<br>(b) |   |                        | x<br>(b) |   |
| Ramsar criterion 3<br>The Humber Estuary Ramsar site supports a                                                                                                                                                                                                  |                        | x<br>(b) |   |                        | x<br>(b) |   |

|                                                                                                                                                                                                                                                                                                                                                                                                      |  |          |  |  |          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|--|--|----------|--|
| breeding colony of grey seals<br><i>Halichoerus grypus</i><br>at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i> . |  |          |  |  |          |  |
| Ramsar criterion 5<br>Assemblages of international importance:<br>153,934 waterfowl, non-breeding season                                                                                                                                                                                                                                                                                             |  | x<br>(b) |  |  | x<br>(b) |  |
| Ramsar criterion 6<br>–<br>species/populations occurring at                                                                                                                                                                                                                                                                                                                                          |  | x<br>(b) |  |  | x<br>(b) |  |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                      |                  |  |                  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|------------------|--|------------------|--|
| <p>levels of international importance:</p> <p>Eurasian golden plover, <i>Pluvialis apricaria</i></p> <p>Altifrons; Red knot, <i>Calidris canutus</i>; Dunlin, <i>Calidris alpina</i></p> <p>Alpine; Black-tailed godwit, <i>Limosa limosa</i></p> <p>Islandica;</p> <p>Common redshank, <i>Tringa totanus</i></p> <p>Brittanica;</p> <p>Common shelduck, <i>Tadorna tadorna</i>;</p> <p>Bar-tailed godwit , <i>Limosa lapponica</i></p> <p><i>Lapponica</i>;</p> |                  |                      |                  |  |                  |  |
| <p>Ramsar criterion 8</p> <p>The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and</p>                                                                                                                                                                                                                                                 | <p>x<br/>(a)</p> | <p>x<br/>(a / b)</p> | <p>x<br/>(a)</p> |  | <p>x<br/>(b)</p> |  |

|                       |  |  |  |  |  |  |
|-----------------------|--|--|--|--|--|--|
| their spawning areas. |  |  |  |  |  |  |
|-----------------------|--|--|--|--|--|--|

- a. No perceptible changes in the water quality of the Humber Estuary are predicted (paragraph 12.6.13 of the water quality resources chapter). It is however necessary to consider the potential implications of water quality changes in the River Ouse upstream of the estuary in relation to SAC fish species. This is because river lamprey and sea lamprey could use the section of the Ouse between the Humber Estuary SAC (downstream of the Proposed Scheme) and the River Derwent SAC (upstream of the Proposed Scheme). There are likely to be population linkages between lamprey using habitats within the Humber Estuary SAC, River Ouse, and upstream River Derwent SAC.

The proposed CEMP will control potential hydrological impacts during construction and decommissioning, with no deterioration of the WFD status of the River Ouse (located upstream of the Humber Estuary SAC, SPA and Ramsar Site and downstream of the River Derwent SAC) predicted (paragraphs 12.6.13 of the Water Resources, Quality and Hydrology Chapter). During operation, existing and proposed drainage measures would ensure any impacts on water quality within suitable water features for migratory fish species would be negligible (see paragraphs 12.6.50 – 12.6.53 of the ES Water Resources, Quality and Hydrology Chapter).

- b. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.16 to 6.20 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 to 6.25. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme (taking into account embedded mitigation measures to minimise operational emissions of NO<sub>x</sub> and NH<sub>3</sub>) will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The Proposed Scheme alone will not lead to significant nitrogen deposition onto the Humber Estuary Ramsar site. There is a maximum modelled process contribution of 0.3% for nitrogen deposition (see Table 6.19

and 6.20 of the ES Air Quality Chapter). Humber Estuary habitats occurring within 15 km of the Proposed Scheme are not considered to be sensitive to acidification.

The maximum predicted cumulative deposition impact of the Proposed Scheme would be 0.9% for nitrogen deposition and as such no significant in-combination effects are predicted. As stated above, Humber Estuary habitats are not considered to be sensitive to acidification and there would be no exceedances of any critical levels.

Given the conservatism of the air quality modelling (see paragraphs 6.5.19 and 6.10.2 of Chapter 6 of the ES) and the low magnitude of the cumulative air quality impacts, no adverse effects to the integrity of the Humber Estuary Ramsar site are predicted to arise.

## HRA Integrity Matrix 7: Humber Estuary SPA

|                                                                                                                                                                                                                                                                                                                                                          |                        |          |   |                        |          |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|---|------------------------|----------|---|
| Name of European site and designation: Humber Estuary SPA                                                                                                                                                                                                                                                                                                |                        |          |   |                        |          |   |
| EU Code: UK9006111                                                                                                                                                                                                                                                                                                                                       |                        |          |   |                        |          |   |
| Distance to NSIP: 6 km to the Power Station Site, 6.0 km to the Pipeline Area                                                                                                                                                                                                                                                                            |                        |          |   |                        |          |   |
| European site features                                                                                                                                                                                                                                                                                                                                   | Likely effects of NSIP |          |   |                        |          |   |
| Stage of Development                                                                                                                                                                                                                                                                                                                                     | Habitat Degradation    |          |   | In Combination Effects |          |   |
|                                                                                                                                                                                                                                                                                                                                                          | C                      | O        | D | C                      | O        | D |
| Used regularly by 1% or more of the Great Britain populations of the following Annex I species: Eurasian teal <i>Anas crecca</i> , Eurasian wigeon <i>Anas Penelope</i> , mallard <i>Anas platyrhynchos</i> , turnstone <i>Arenaria interpres</i> , common pochard <i>Aythya farina</i> , greater scaup <i>Aythya marila</i> , Brent goose <i>Branta</i> |                        | x<br>(a) |   |                        | ✕<br>(a) |   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
| <i>bernicle bernicle</i> ,<br>common<br>goldeneye<br><i>Bucephala</i><br><i>clangula</i> ,<br>sanderling <i>Calidris</i><br><i>alba</i> , avocet<br><i>Recurvirostra</i><br>avosetta Bittern<br><i>Botaurus stellaris</i> ,<br>Hen harrier <i>Circus</i><br><i>cyaneus</i> , Golden<br>plover <i>Pluvialis</i><br><i>apricaria</i> , Bar-<br>tailed godwit<br><i>Limosa lapponica</i> ,<br>Ruff <i>Philomachus</i><br><i>pugnax</i> , Bittern<br><i>Botaurus stellaris</i> ,<br>Marsh harrier<br><i>Circus</i><br><i>aeruginosus</i> , Little<br>tern <i>Sterna</i><br><i>albifrons</i> , common<br>ringed plover<br><i>Charadrius</i><br><i>hiaticula</i> , Eurasian<br>curlew <i>Numenius</i><br><i>arquata</i> , whimbrel<br><i>Numenius</i><br><i>Phaeopus</i> ,<br>greenshank <i>Tringa</i><br><i>nebularia</i> , lapwing<br><i>Vanellus vanellus</i> . |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|

|                                                                                                                                                                                                                                                                                                                                                                                                       |  |          |  |  |          |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|--|--|----------|--|
| Used regularly by 1% or more of the biogeographical populations of the following migratory species: Shelduck <i>Tadorna tadorna</i> , Knot <i>Calidris canutus</i> , Dunlin <i>Calidris alpina</i> (passage and wintering), Redshank <i>Tringa totanus</i> , Black-tailed godwit <i>Limosa limosa</i> , Eurasian oystercatcher <i>Haematopus ostralegus</i> , grey plover <i>Pluvialis squatarola</i> |  | x<br>(a) |  |  | ✕<br>(a) |  |
| Assemblage qualification under article 4.2 or use of over 20,000 waterbirds in any season.                                                                                                                                                                                                                                                                                                            |  | x<br>(a) |  |  | ✕<br>(a) |  |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.16 to 6.20 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality

Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.21 to 6.25. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme (taking into account embedded mitigation measures to minimise operational emissions of NO<sub>x</sub> and NH<sub>3</sub>) will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations, either alone or in-combination with other plans or projects (see tables 6.16 and 6.17 and tables 6.21 and 6.23 in Chapter 6 of the ES). The Proposed Scheme alone will not lead to significant nitrogen deposition onto the Humber Estuary SPA. There is a maximum modelled process contribution of 0.3% for nitrogen deposition (see Table 6.19 and 6.20 of the ES Air Quality Chapter). Humber Estuary habitats (and their supporting role for SPA bird species) occurring within 15 km of the Proposed Scheme are not considered to be sensitive to acidification.

The maximum predicted cumulative deposition impact of the Proposed Scheme would be 0.9% for nitrogen deposition and as such no significant in-combination effects are predicted. As stated above, Humber Estuary habitats are not considered to be sensitive to acidification and there would be no exceedances of any critical levels.

Given the conservatism of the air quality modelling (see paragraphs 6.5.19 and 6.10.2 of Chapter 6 of the ES) and the low magnitude of the cumulative air quality impacts, no adverse effects to the integrity of the Humber Estuary Ramsar site are predicted to arise.



## HRA Integrity Matrix 8: Skipwith Common SAC

|                                                                                 |                                          |          |          |                                             |          |          |
|---------------------------------------------------------------------------------|------------------------------------------|----------|----------|---------------------------------------------|----------|----------|
| Name of European site and designation: Skipwith Common SAC                      |                                          |          |          |                                             |          |          |
| EU Code: UK0030276                                                              |                                          |          |          |                                             |          |          |
| Distance to NSIP: 8.0 km to the Power Station Site, 8.0 km to the Pipeline Area |                                          |          |          |                                             |          |          |
| European site features                                                          | Adverse effect on integrity              |          |          | Adverse effect on integrity                 |          |          |
| <i>Effect</i>                                                                   | <i>Habitat Degradation (air quality)</i> |          |          | <i>In-combination Effects (air quality)</i> |          |          |
| <i>Stage of Development</i>                                                     | <i>C</i>                                 | <i>O</i> | <i>D</i> | <i>C</i>                                    | <i>O</i> | <i>D</i> |
| 4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>                    |                                          | X(a)     |          |                                             | X(a)     |          |
| 4030 European dry heaths                                                        |                                          | X(a)     |          |                                             | X(a)     |          |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.18 to 6.22 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.23 to 6.27. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e. operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme would make a minor contribution to an existing exceedance of the critical level for annual mean  $\text{NH}_3$  concentrations, both alone and in-combination with other plans or projects (see tables 6.18 and 6.23 in Chapter 6 of the ES). The Proposed Scheme would generate a maximum Process Contribution of 0.4% of the critical level for  $\text{NH}_3$ . This is in the context of an existing exceedance of 242% of critical level, with the Proposed Scheme equivalent to up to 0.17% of background levels. There are no exceedances of critical levels for  $\text{NO}_x$ , either alone or in-combination with other plans or projects (see tables 6.19 and 6.20, and 6.24 and 6.25 of the ES Air Quality Chapter). The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto Skipwith Common SAC. There is a maximum modelled process contribution of 0.4% and 0.3% for nitrogen and acid deposition respectively (see Table 6.21 and 6.22 of the ES Air Quality Chapter, respectively). The process contribution also reduces with increasing distance from the Proposed Scheme. As such, air quality impacts of the Proposed Scheme alone are not predicted to lead to adverse effects to the integrity of the European Site.

The maximum predicted cumulative impact of the Proposed Scheme would be 2.7% of the critical level for  $\text{NH}_3$ , with the Proposed Scheme contributing up to 0.4% of this. There would be a cumulative impact of up to 1.9% of critical load for nitrogen deposition and up to 1.6% for acidification, with the Proposed Scheme contributing 0.4% and 0.3% respectively. The cumulative impacts on  $\text{NH}_3$  concentrations and nitrogen and acid deposition therefore exceed 1% of critical load / critical levels (see paragraphs 6.6.35 to 6.6.39 of the ES Air Quality Chapter).

To support this assessment, published research into the effects of nitrogen deposition on heathland habitats was reviewed. This included a review of existing scientific knowledge covering several studies (Caporn *et al.*, 2016 (reference 9.52)) and a study of how ecosystem functions could be used as indicators for heathland response to nitrogen deposition (Bahring *et al.*, 2017 (Ref. 9.55)). These studies suggest that the effects of additional nitrogen where background deposition rates are already high are much reduced relative to where background deposition rates are low. This is because where nitrogen is already in excess the plants present within the habitats have limited capacity to respond. In the Natural England study (Caporn *et al.*, (2016)), with background deposition rates of 20 kg N/ha/yr (comparable to estimated baseline deposition rates at Skipwith common SAC of 19.2 kgN/ha/yr), adding a further 1 kg N/ha/yr was shown to decrease species richness by between 1.4% and 1.9%. Graminoid (grass) cover was found to increase by between 0.8% and 1.1%. The maximum species richness recorded across the studies examined in Caporn *et al.*, (2016) varied between 16 and 32.

Taking a worst-case species richness from the above of 16, an impact equivalent to 3.26 kgN/ha/yr would theoretically be required to reduce species richness across the SAC by an average of one species (per quadrat). The maximum

predicted cumulative impact of the Proposed Scheme with other plans and projects is 0.19 kgN/ha/yr, equivalent to approximately 6% of the amount required to reduce species richness by an average of one species per quadrat. This level of deposition falls well within the bounds of natural between-years variation and is predicted to lead to negligible (and imperceptible) vegetative change across the SAC. The worst-case cumulative impact of acid deposition is marginally above 1% (1.6%), with the contribution from the Proposed Scheme decreasing with increasing distance from stacks. No perceptible vegetative change of SAC habitats is predicted to arise from this level of deposition.

In addition, the constituent SSSI Units of the Skipwith Common SAC within 15 km of the Proposed Scheme were also assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed in 2014 despite current levels of nitrogen input from other sources (which exceed the lower band of the site relevant critical load). A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 47.96% of the constituent SSSI units were reported as being in 'favourable' condition, the remaining value of 52.04% was recorded as being in 'unfavourable – recovering' condition, suggesting the condition of these areas in relation to their target condition is being achieved or improving.

As well as the ecological factors considered above, future national emissions ceilings are likely to reduce emissions of both NO<sub>x</sub> and ammonia levels and subsequently deposition in the medium to long term. For example, The National Emissions Ceilings Regulations (2018) commit the UK to reducing ammonia emissions by 8% between 2020 and 2029 and by 16% from 2018 onwards (see paragraph 6.6.40 of the ES Air Quality Chapter). Government policy and socioeconomic factors are also promoting the uptake of ultra-low and zero emission vehicles. Current government policy is for all new car and van sales from 2040 onwards to be of ultra-low and zero-emission vehicles, with new conventional diesel and petrol-fuelled vehicles banned from sale (see paragraph 9.6.9 of the ES Biodiversity Chapter). Data on APIS (Ref. 9.56) indicates that approximately 8.6% of nitrogen deposition onto Skipwith Common SAC arises from road transport. Future reductions in emissions from the UK vehicle fleet would therefore reduce and likely eventually eliminate these inputs. For comparison, the source attribution data on APIS identifies the Existing Drax Power Station Complex as contributing approximately 1.5% of total nitrogen deposition.

Given the factors set out above, the air quality impacts of the Proposed Scheme are not predicted to lead to adverse effects on the integrity of the Proposed Scheme, either alone or in combination with other Plans and Projects.

## HRA Integrity Matrix 9: Thorne Moor SAC

|                                                                                 |                                          |          |          |                                             |          |          |
|---------------------------------------------------------------------------------|------------------------------------------|----------|----------|---------------------------------------------|----------|----------|
| Name of European site and designation: Thorne Moor SAC                          |                                          |          |          |                                             |          |          |
| EU Code: UK9005171                                                              |                                          |          |          |                                             |          |          |
| Distance to NSIP: 9.3 km to the Power Station Site, 7.6 km to the Pipeline Area |                                          |          |          |                                             |          |          |
| European site features                                                          | Adverse effect on integrity              |          |          | Adverse effect on integrity                 |          |          |
| <i>Effect</i>                                                                   | <i>Habitat degradation (air quality)</i> |          |          | <i>In-combination Effects (air quality)</i> |          |          |
| <i>Stage of Development</i>                                                     | <i>C</i>                                 | <i>O</i> | <i>D</i> | <i>C</i>                                    | <i>O</i> | <i>D</i> |
| 7120 Degraded raised bogs still capable of natural regeneration                 |                                          | X(a)     |          |                                             | X(a)     |          |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.18 to 6.22 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.23 to 6.27. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e. operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme would make a minor contribution to an existing exceedance of the critical level for annual mean NH<sub>3</sub> concentrations, both alone and in-combination with other plans or projects (see tables 6.18 and 6.23 in Chapter 6 of the ES). The Proposed Scheme would generate a maximum Process Contribution of

0.5% of the critical level for NH<sub>3</sub>. This is in the context of an existing exceedance of 239% of critical level, with the process contribution from the Proposed Scheme equivalent to approximately 0.2% of background levels. There are no exceedances of critical levels for NO<sub>x</sub>, either alone or in-combination with other plans or projects (see tables 6.19 and 6.20, and 6.24 and 6.25 of the ES Air Quality Chapter). The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto Thorne Moor SAC. There is a maximum modelled process contribution of 0.8% and 0.6% for nitrogen and acid deposition respectively (see Table 6.21 and 6.22 of the ES Air Quality Chapter, respectively). The process contribution also reduces with increasing distance from the Proposed Scheme. As such, air quality impacts of the Proposed Scheme alone are not predicted to lead to adverse effects to the integrity of the European Site.

The maximum predicted cumulative impact of the Proposed Scheme would be 1.3% of the critical level for NH<sub>3</sub>, with the Proposed Scheme contributing up to 0.5% of this. The contribution from the Proposed Scheme to cumulative NH<sub>3</sub> also decreases with increasing distance from the stacks. Given the cumulative exceedance is only marginally above 1% of critical level at the point of greatest predicted impact, no perceptible effects on SAC vegetation are predicted to arise. There would be a cumulative impact of up to 2.7% of critical load for nitrogen deposition and up to 2.1% for acidification, with the Proposed Scheme contributing 0.8% and 0.6% respectively. The cumulative impacts on nitrogen and acid deposition therefore exceed 1% of critical load (see paragraphs 6.6.35 to 6.6.39 of the ES Air Quality Chapter).

To support this assessment, published research into the effects of nitrogen deposition on bog habitats was reviewed. This included a review of existing scientific knowledge covering several studies (Caporn *et al.*, 2016 (reference 9.52)) and a study of how ecosystem functions could be used as indicators for heathland response to nitrogen deposition (Bahring *et al.*, 2017 (Ref. 9.55)). These studies suggest that the effects of additional nitrogen where background deposition rates are already high are much reduced relative to where background deposition rates are low. This is because nitrogen is already in excess, with the plants present having limited capacity to respond. In the Natural England study (Caporn *et al.*, (2016)), with background deposition rates of 20 kg N/ha/yr (comparable to estimated baseline deposition rates at Thorne Moor SAC of 19.2 kgN/ha/yr), adding a further 1 kg N/ha/yr was shown to decrease species richness by circa 0.7%. Graminoid (grass) cover was found to increase by 1.5%. The maximum species richness recorded across the studies examined in Caporn *et al.*, (2016) was 32.

Taking a species richness from the above of 32, an impact equivalent to 3.3 kgN/ha/yr would theoretically be required to reduce species richness across the SAC by an average of one species (per quadrat). The maximum predicted cumulative impact of the Proposed Scheme with other plans and projects is 0.13 kgN/ha/yr, equivalent to approximately 3.9% of the amount required to reduce species richness by an average of one species per quadrat. This level of deposition falls within

the bounds of natural variation and is predicted to lead to negligible (and imperceptible) vegetative change across the SAC. The worst-case cumulative impact of acid deposition is marginally above 1% (2.1%), with the contribution from the Proposed Scheme decreasing with increasing distance from stacks. Again, no perceptible vegetative change of SAC habitats are predicted to arise from this level of deposition, in the context of the baseline deposition levels. There is also evidence from a study completed by the Centre for Ecology and Hydrology (2015, Ref. 9.57) that suggests levels of acid deposition across Thorne Moor are reducing, with evidence of a downward trend between 2012 and 2014.

The constituent SSSI Units of the Thorne Moor SAC within 15 km of the Project Site, were assessed as being in 'favourable', 'unfavourable recovering', 'unfavourable no change' and 'unfavourable declining' condition when last assessed despite current inputs of nitrogen from other sources (which exceed the upper band of the site relevant critical load). A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 3.85% of the Thorne Crowle and Gool Moors SSSI was reported as being in 'favourable' condition, with 91.97% recorded as being in 'unfavourable – recovering' condition. 2.94% was assessed as 'unfavourable no change' with 1.24% 'unfavourable declining'. The majority of the SAC is considered to be in 'unfavourable – recovering' condition by NE. NE identify initiatives to control scrub and manage water balance as the main factors leading to improvements (see Appendix 3).

As well as the ecological factors considered above, future national emissions ceilings are also likely to reduce emissions of both NO<sub>x</sub> and ammonia levels and subsequently deposition in the medium to long term. For example, The National Emissions Ceilings Regulations (2018), commit the UK to reducing ammonia emissions by 8% between 2020 and 2029 and by 16% from 2018 onwards (see paragraph 6.6.40 of the ES Air Quality Chapter). Government policy and socioeconomic factors are also promoting the uptake of ultra-low and zero emission vehicles. Current government policy is for all new car and van sales from 2040 onwards to be of ultra-low and zero-emission vehicles, with new conventional diesel and petrol-fuelled vehicles banned from sale (see paragraph 9.6.9 of the ES Biodiversity Chapter). Data on APIS (Ref. 9.58) indicates that approximately 10.3% of nitrogen deposition onto Thorne Moor SAC arises from road transport. Future reductions in emissions from the UK vehicle fleet would therefore reduce and eventually eliminate these inputs. For comparison, the source attribution data on APIS identifies the existing Drax Power Station complex as contributing approximately 1.9% of total nitrogen deposition.

Given the factors set out above, the air quality impacts of the Proposed Scheme are not predicted to lead to adverse effects on the integrity of the Proposed Scheme, either alone or in combination with other Plans and Projects.

## HRA Integrity Matrix 10: Thorne and Hatfield Moor SPA

|                                                                                                                               |                                          |          |          |                                             |          |          |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------|----------|---------------------------------------------|----------|----------|
| Name of European site and designation: Thorne and Hatfield Moor SPA                                                           |                                          |          |          |                                             |          |          |
| EU Code: UK0012915                                                                                                            |                                          |          |          |                                             |          |          |
| Distance to NSIP: 9.3 km to the Power Station Site, 7.6 km to the Pipeline Area                                               |                                          |          |          |                                             |          |          |
| European site features                                                                                                        | Adverse effect on integrity              |          |          | Adverse effect on integrity                 |          |          |
| <i>Effect</i>                                                                                                                 | <i>Habitat degradation (air quality)</i> |          |          | <i>In-combination Effects (air quality)</i> |          |          |
| <i>Stage of Development</i>                                                                                                   | <i>C</i>                                 | <i>O</i> | <i>D</i> | <i>C</i>                                    | <i>O</i> | <i>D</i> |
| Supporting populations of the following Annex I species;<br><u>Breeding Season</u> : Nightjar<br><i>Caprimulgus europaeus</i> |                                          | X(a)     |          |                                             | X(a)     |          |

- a. Chapter 6 of the ES (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.18 to 6.22 of the ES Air Quality chapter sets out the predicted numerical air quality impacts of the Proposed Scheme, based on a realistic worst-case scenario for operation (see paragraph 6.4.13 of the ES Air Quality Chapter for a description of the modelling assumptions). This includes the predicted impact of the Proposed Scheme alone on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification. Predicted cumulative impacts with other projects for these gas species are also presented in Tables 6.23 to 6.27. The worst-case scenario assessed in the air quality chapter is considered in this SIAA, i.e. operation of both units with Selective Catalytic Reduction (SCR) with the annualised ammonia budget (see paragraph 6.4.13 to 6.4.15 of the ES Air Quality Chapter).

The air quality modelling shows that the Proposed Scheme would make a minor contribution to an existing exceedance of the critical level for annual mean NH<sub>3</sub> concentrations, both alone and in-combination with other plans or projects (see tables 6.18 and 6.23 in Chapter 6 of the ES). The Proposed Scheme would generate a maximum Process Contribution of

0.5% of the critical level for NH<sub>3</sub>. This is in the context of an existing exceedance of 239% of critical level, with the process contribution from the Proposed Scheme equivalent to approximately 0.2% of background levels. There are no exceedances of critical levels for NO<sub>x</sub>, either alone or in-combination with other plans or projects (see tables 6.19 and 6.20, and 6.24 and 6.25 of the ES Air Quality Chapter). The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto Thorne Moor SPA. There is a maximum modelled process contribution of 0.8% and 0.6% for nitrogen and acid deposition respectively (see Table 6.21 and 6.22 of the ES Air Quality Chapter, respectively). The process contribution also reduces with increasing distance from the Proposed Scheme. As such, air quality impacts of the Proposed Scheme alone are not predicted to lead to adverse effects to the integrity of the European Site.

The maximum predicted cumulative impact of the Proposed Scheme would be 1.3% of the critical level for NH<sub>3</sub>, with the Proposed Scheme contributing up to 0.5% of this. The contribution from the Proposed Scheme to cumulative NH<sub>3</sub> also decreases with increasing distance from the stacks. Given the cumulative exceedance is only marginally above 1% of critical level at the point of greatest predicted impact, no perceptible effects on SAC vegetation are predicted to arise. As such, the suitability of the habitats present to support nightjar is not expected to be subject to perceptible change. There would be a cumulative impact of up to 2.7% of critical load for nitrogen deposition and up to 2.1% for acidification, with the Proposed Scheme contributing 0.8% and 0.6% respectively. The cumulative impacts on nitrogen and acid deposition therefore exceed 1% of critical load (see paragraphs 6.6.35 to 6.6.39 of the ES Air Quality Chapter).

To support this assessment, published research into the effects of nitrogen deposition on bog habitats was reviewed. This included a review of existing scientific knowledge covering several studies (Caporn *et al.*, 2016 (reference 9.52)) and a study of how ecosystem functions could be used as indicators for heathland response to nitrogen deposition (Bahring *et al.*, 2017 (Ref. 9.55)). These studies suggest that the effects of additional nitrogen where background deposition rates are already high are much reduced relative to where background deposition rates are low. This is because nitrogen is already in excess, with the plants present having limited capacity to respond. In the Natural England study (Caporn *et al.*, (2016)), with background deposition rates of 20 kg N/ha/yr (comparable to estimated baseline deposition rates at Thorne Moor SAC of 19.2 kgN/ha/yr), adding a further 1 kg N/ha/yr was shown to decrease species richness by between 0.7%. Graminoid (grass) cover was found to increase by 1.5%. The maximum species richness recorded across the studies examined in Caporn *et al.*, (2016) was 32.

Taking a species richness from the above of 32, an impact equivalent to 3.3 kgN/ha/yr would theoretically be required to reduce species richness across the SAC by an average of one species (per quadrat). The maximum predicted cumulative impact of the Proposed Scheme with other plans and projects is 0.13 kgN/ha/yr, equivalent to approximately 3.9% of the



amount required to reduce species richness by an average of one species per quadrat. This level of deposition falls within the bounds of natural variation and is predicted to lead to negligible (and imperceptible) vegetative change across the SAC. The worst-case cumulative impact of acid deposition is marginally above 1% (2.1%), with the contribution from the Proposed Scheme decreasing with increasing distance from stacks. Again, no perceptible vegetative change of SAC habitats are predicted to arise from this level of deposition. There is also evidence from a study completed by the Centre for Ecology and Hydrology (2015, Ref. 9.57) that suggests levels of acid deposition across Thorne Moor are reducing, with evidence of a downward trend between 2012 and 2014.

The constituent SSSI Units of the Thorne Moor SAC within 15 km of the Project Site, were assessed as being in 'favourable', 'unfavourable recovering', 'unfavourable no change' and 'unfavourable declining' condition when last assessed despite current inputs of nitrogen from other sources (which exceed the upper band of the site relevant critical load). A copy of the last SSSI unit condition assessment is provided in Appendix 3 of this SIAA. 3.85% of the Thorne, Crowle and Gool Moor SSSI was reported as being in 'favourable' condition, with 91.97% recorded as being in 'unfavourable – recovering' condition. 2.94% was assessed as 'unfavourable no change' with 1.24% 'unfavourable declining'. The majority of the SAC is considered to be in 'unfavourable – recovering' condition by NE. NE identify initiatives to control scrub and manage water balance as the main factors leading to improvements in habitat condition (see Appendix 3).

As well as the ecological factors considered above, future national emissions ceilings are also likely to reduce emissions of both NO<sub>x</sub> and ammonia levels and subsequently deposition in the medium to long term. For example, The National Emissions Ceilings Regulations (2018), commit the UK to reducing ammonia emissions by 8% between 2020 and 2029 and by 16% from 2018 onwards (see paragraph 6.6.40 of the ES Air Quality Chapter). Government policy and socioeconomic factors are also promoting the uptake of ultra-low and zero emission vehicles. Current government policy is for all new car and van sales from 2040 onwards to be of ultra-low and zero-emission vehicles, with new conventional diesel and petrol-fuelled vehicles banned from sale (see paragraph 9.6.9 of the ES Biodiversity Chapter). Data on APIS (Ref. 9.58) indicates that approximately 10% of nitrogen deposition onto Thorne Moor SPA arises from road transport. Future reductions in emissions from the UK vehicle fleet would therefore reduce and eventually eliminate these inputs. For comparison, the source attribution data on APIS identifies the existing Drax Power Station complex as contributing approximately 1.7% of total nitrogen deposition.

Given the factors set out above, the air quality impacts of the Proposed Scheme are not predicted to lead to adverse effects on the integrity of the Proposed Scheme, either alone or in combination with other Plans and Projects.



# 1 EXTRACT FROM HRA – TABLES 2-1 TO 2-10

Table 1-1 - Results of HRA Screening for Lower Derwent Valley SAC

|                                                                                                                                |                                                                                                           |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Lower Derwent Valley SAC</b>                                                                                                |                                                                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                                                                 | England                                                                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                                                                       | East Yorkshire and Northern Lincolnshire, North Yorkshire                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Centroid*</b>                                                                                                               | SE703441                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                                                                | 53.88805556                                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                                                               | -0.93055556                                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>SAC EU code</b>                                                                                                             | UK0012844                                                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Status</b>                                                                                                                  | Designated Special Area of Conservation (SAC)                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                                                               | 921.26                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                                                             | <b>Conservation Objectives (to maintain or restore):</b>                                                  | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Annex I Habitat 6510<br><u>Lowland hay meadows</u><br><u>(<i>Alopecurus pratensis</i>,<br/><i>Sanguisorba officinalis</i>)</u> | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                                                | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                                                | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 91E0<br><u>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus</i></u>                                | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                                                | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |

| Lower Derwent Valley SAC                                       |                                                                                                           | <p>Impact with the Potential to Result in LSE</p> <p>O No LSE<br/>X Likely Significant Effects</p> |                                            |                        |                |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Country                                                        | England                                                                                                   |                                                                                                    |                                            |                        |                |
| Unitary Authority                                              | East Yorkshire and Northern Lincolnshire, North Yorkshire                                                 |                                                                                                    |                                            |                        |                |
| Centroid*                                                      | SE703441                                                                                                  |                                                                                                    |                                            |                        |                |
| Latitude                                                       | 53.88805556                                                                                               |                                                                                                    |                                            |                        |                |
| Longitude                                                      | -0.93055556                                                                                               |                                                                                                    |                                            |                        |                |
| SAC EU code                                                    | UK0012844                                                                                                 |                                                                                                    |                                            |                        |                |
| Status                                                         | Designated Special Area of Conservation (SAC)                                                             |                                                                                                    |                                            |                        |                |
| Area (ha)                                                      | 921.26                                                                                                    |                                                                                                    |                                            |                        |                |
| Qualifying Interest Feature                                    | Conservation Objectives (to maintain or restore):                                                         | Disturbance;<br>Noise Vibration<br>and/or Visual                                                   | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| <u>excelsior (Alno-Padion, Alnion incanae, Salicion albae)</u> | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                  | O                                          | X                      | X              |
| Annex II Species 1355<br>Otter ( <i>Lutra lutra</i> )          | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                  | O                                          | O                      | O              |
|                                                                | The structure and function of the habitats of qualifying species                                          | O                                                                                                  | X                                          | X                      | X              |
|                                                                | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                  | X                                          | X                      | X              |
|                                                                | The populations of qualifying species                                                                     | X                                                                                                  | X                                          | O                      | O              |
|                                                                | The distribution of qualifying species within the site                                                    | X                                                                                                  | X                                          | O                      | O              |

Table 1-2 - Results of HRA Screening for Lower Derwent Valley SPA

|                                                                           |                                                                                |                                                                                                                 |                                                     |                                |                       |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Lower Derwent Valley SPA</b>                                           |                                                                                | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                            | <b>England</b>                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                  | <b>East Yorkshire and Northern Lincolnshire, North Yorkshire</b>               |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                         | <b>Classified 08061993</b>                                                     |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                           | <b>53 53 04 N</b>                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                          | <b>00 55 34 W</b>                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                                        | <b>UK9006092</b>                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                          | <b>915.45</b>                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                        | <b>Conservation Objectives (to maintain or restore):</b>                       | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A037 Bewick's Swan ( <i>Cygnus columbianus bewickii</i> ) (non-breeding). | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                           | The structure and function of the habitats of the qualifying features          | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                           | The supporting processes on which the habitats of the qualifying features rely | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                           | The population of each of the qualifying features                              | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                           | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                           | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                                   | O                              | O                     |

| <b>Lower Derwent Valley SPA</b><br><b>Country</b> England<br><b>Unitary Authority</b> East Yorkshire and Northern Lincolnshire, North Yorkshire<br><b>SPA Status</b> Classified 08061993<br><b>Latitude</b> 53 53 04 N<br><b>Longitude</b> 00 55 34 W<br><b>SPA EU code</b> UK9006092<br><b>Area (ha)</b> 915.45 |                                                                                | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                            |                        |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Qualifying Interest Feature                                                                                                                                                                                                                                                                                      | Conservation Objectives (to maintain or restore):                              | Disturbance;<br>Noise Vibration<br>and/or Visual                                                                | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| A050 Eurasian wigeon ( <i>Anas penelope</i> ) (non-breeding).                                                                                                                                                                                                                                                    | The structure and function of the habitats of the qualifying features          | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The supporting processes on which the habitats of the qualifying features rely | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The population of each of the qualifying features                              | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                          | X                      | X              |
| A052 Eurasian teal ( <i>Anas crecca</i> ) (non-breeding).                                                                                                                                                                                                                                                        | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                          | O                      | O              |
|                                                                                                                                                                                                                                                                                                                  | The structure and function of the habitats of the qualifying features          | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The supporting processes on which the habitats of the qualifying features rely | O                                                                                                               | O                                          | X                      | X              |

|                                                             |                                                                                |                                                                                                                 |                                            |                        |                |
|-------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Lower Derwent Valley SPA                                    |                                                                                | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                            |                        |                |
| Country                                                     | England                                                                        |                                                                                                                 |                                            |                        |                |
| Unitary Authority                                           | East Yorkshire and Northern Lincolnshire, North Yorkshire                      |                                                                                                                 |                                            |                        |                |
| SPA Status                                                  | Classified 08061993                                                            |                                                                                                                 |                                            |                        |                |
| Latitude                                                    | 53 53 04 N                                                                     |                                                                                                                 |                                            |                        |                |
| Longitude                                                   | 00 55 34 W                                                                     |                                                                                                                 |                                            |                        |                |
| SPA EU code                                                 | UK9006092                                                                      |                                                                                                                 |                                            |                        |                |
| Area (ha)                                                   | 915.45                                                                         |                                                                                                                 |                                            |                        |                |
| Qualifying Interest Feature                                 | Conservation Objectives (to maintain or restore):                              | Disturbance;<br>Noise Vibration<br>and/or Visual                                                                | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
|                                                             | The population of each of the qualifying features                              | O                                                                                                               | O                                          | X                      | X              |
|                                                             | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                          | X                      | X              |
| A056 Northern shoveler ( <i>Anas clypeata</i> ) (breeding). | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                          | O                      | O              |
|                                                             | The structure and function of the habitats of the qualifying features          | O                                                                                                               | O                                          | X                      | X              |
|                                                             | The supporting processes on which the habitats of the qualifying features rely | O                                                                                                               | O                                          | X                      | X              |
|                                                             | The population of each of the qualifying features                              | O                                                                                                               | O                                          | X                      | X              |
|                                                             | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                          | X                      | X              |
|                                                             | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                          | O                      | O              |



|                                                                            |                                                                                |                                                                                            |                                            |                        |                |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Lower Derwent Valley SPA                                                   |                                                                                | Impact with the Potential to Result in LSE<br><br>O No LSE<br>X Likely Significant Effects |                                            |                        |                |
| Country                                                                    | England                                                                        |                                                                                            |                                            |                        |                |
| Unitary Authority                                                          | East Yorkshire and Northern Lincolnshire, North Yorkshire                      |                                                                                            |                                            |                        |                |
| SPA Status                                                                 | Classified 08061993                                                            |                                                                                            |                                            |                        |                |
| Latitude                                                                   | 53 53 04 N                                                                     |                                                                                            |                                            |                        |                |
| Longitude                                                                  | 00 55 34 W                                                                     |                                                                                            |                                            |                        |                |
| SPA EU code                                                                | UK9006092                                                                      |                                                                                            |                                            |                        |                |
| Area (ha)                                                                  | 915.45                                                                         |                                                                                            |                                            |                        |                |
| Qualifying Interest Feature                                                | Conservation Objectives (to maintain or restore):                              | Disturbance;<br>Noise Vibration<br>and/or Visual                                           | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| A140 European golden plover ( <i>Pluvialis apricaria</i> ) (non-breeding). | The structure and function of the habitats of the qualifying features          | O                                                                                          | O                                          | X                      | X              |
|                                                                            | The supporting processes on which the habitats of the qualifying features rely | O                                                                                          | O                                          | X                      | X              |
|                                                                            | The population of each of the qualifying features                              | O                                                                                          | O                                          | X                      | X              |
|                                                                            | The distribution of the qualifying features within the site                    | O                                                                                          | O                                          | X                      | X              |
| A151 Ruff ( <i>Philomachus pugnax</i> ) (non-breeding).                    | The extent and distribution of the habitats of the qualifying features         | O                                                                                          | O                                          | O                      | O              |
|                                                                            | The structure and function of the habitats of the qualifying features          | O                                                                                          | O                                          | X                      | X              |
|                                                                            | The supporting processes on which the habitats of the qualifying features rely | O                                                                                          | O                                          | X                      | X              |

| <b>Lower Derwent Valley SPA</b><br><b>Country</b> England<br><b>Unitary Authority</b> East Yorkshire and Northern Lincolnshire, North Yorkshire<br><b>SPA Status</b> Classified 08061993<br><b>Latitude</b> 53 53 04 N<br><b>Longitude</b> 00 55 34 W<br><b>SPA EU code</b> UK9006092<br><b>Area (ha)</b> 915.45 |                                                                                | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                            |                        |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Qualifying Interest Feature                                                                                                                                                                                                                                                                                      | Conservation Objectives (to maintain or restore):                              | Disturbance;<br>Noise Vibration<br>and/or Visual                                                                | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
|                                                                                                                                                                                                                                                                                                                  | The population of each of the qualifying features                              | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                          | X                      | X              |
| Waterbird Assemblage                                                                                                                                                                                                                                                                                             | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                          | O                      | O              |
|                                                                                                                                                                                                                                                                                                                  | The structure and function of the habitats of the qualifying features          | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The supporting processes on which the habitats of the qualifying features rely | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The population of each of the qualifying features                              | O                                                                                                               | O                                          | X                      | X              |
|                                                                                                                                                                                                                                                                                                                  | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                          | X                      | X              |

**Table 1-3 - Results of HRA Screening for Lower Derwent Valley Ramsar site**

|                                                                                                                                            |                                                               |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Lower Derwent Valley Ramsar</b>                                                                                                         |                                                               | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                                                                             | England                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                                                                                   | East Yorkshire and Northern Lincolnshire, North Yorkshire     |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                                                                                          | Classified 08061993                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                                                                            | 53 53 04 N                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                                                                           | 00 55 34 W                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>EU code</b>                                                                                                                             | UK11037                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                                                                           | 915.45                                                        |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                                                                         | <b>Conservation Objectives (to maintain or restore):</b>      | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Ramsar Criterion 1: The river and flood meadows play a substantial role in the hydrological and ecological functioning of the Humber Basin | Not Applicable – no Conservation Objectives for Ramsar Sites. | O                                                                                                               | O                                                   | X                              | X                     |

|                                                                                                                                                                                                                                                                                      |                                                               |                                                                                                                 |                                            |                        |                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Lower Derwent Valley Ramsar                                                                                                                                                                                                                                                          |                                                               | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                            |                        |                |
| Country                                                                                                                                                                                                                                                                              | England                                                       |                                                                                                                 |                                            |                        |                |
| Unitary Authority                                                                                                                                                                                                                                                                    | East Yorkshire and Northern Lincolnshire, North Yorkshire     |                                                                                                                 |                                            |                        |                |
| SPA Status                                                                                                                                                                                                                                                                           | Classified 08061993                                           |                                                                                                                 |                                            |                        |                |
| Latitude                                                                                                                                                                                                                                                                             | 53 53 04 N                                                    |                                                                                                                 |                                            |                        |                |
| Longitude                                                                                                                                                                                                                                                                            | 00 55 34 W                                                    |                                                                                                                 |                                            |                        |                |
| EU code                                                                                                                                                                                                                                                                              | UK11037                                                       |                                                                                                                 |                                            |                        |                |
| Area (ha)                                                                                                                                                                                                                                                                            | 915.45                                                        |                                                                                                                 |                                            |                        |                |
| Qualifying Interest Feature                                                                                                                                                                                                                                                          | Conservation Objectives (to maintain or restore):             | Disturbance;<br>Noise Vibration<br>and/or Visual                                                                | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| Ramsar Criterion 2: Rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates as well as a leafhopper, <i>Cicadula ornate</i> for which Lower Derwent Valley is the only known site in Great Britain. | Not Applicable – no Conservation Objectives for Ramsar Sites. | O                                                                                                               | O                                          | X                      | X              |
| Ramsar Criterion 3: Staging post for passage birds in spring. Of particular note are                                                                                                                                                                                                 | Not Applicable – no Conservation Objectives for Ramsar Sites. | O                                                                                                               | O                                          | X                      | X              |

|                                                                                                              |                                                                  |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Lower Derwent Valley Ramsar</b>                                                                           |                                                                  | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                                               | <b>England</b>                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                                                     | <b>East Yorkshire and Northern Lincolnshire, North Yorkshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                                                            | <b>Classified 08061993</b>                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                                              | <b>53 53 04 N</b>                                                |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                                             | <b>00 55 34 W</b>                                                |                                                                                                                 |                                                     |                                |                       |
| <b>EU code</b>                                                                                               | <b>UK11037</b>                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                                             | <b>915.45</b>                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                                           | <b>Conservation Objectives (to maintain or restore):</b>         | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| the nationally important numbers of Ruff, <i>Philomachus pugnax</i> and Whimbrel, <i>Numenius phaeopus</i> . |                                                                  |                                                                                                                 |                                                     |                                |                       |
| Ramsar Criterion 4: Regularly supports 20,000 or more waterbirds                                             | Not Applicable – no Conservation Objectives for Ramsar Sites.    | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
| Ramsar criterion 5: Regularly supports 1% of the individuals                                                 | Not Applicable – no Conservation Objectives for Ramsar Sites.    |                                                                                                                 |                                                     |                                |                       |

|                                                                                                                                                    |                                                           |                                                                                                                 |                                            |                        |                |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Lower Derwent Valley Ramsar                                                                                                                        |                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                            |                        |                |
| Country                                                                                                                                            | England                                                   |                                                                                                                 |                                            |                        |                |
| Unitary Authority                                                                                                                                  | East Yorkshire and Northern Lincolnshire, North Yorkshire |                                                                                                                 |                                            |                        |                |
| SPA Status                                                                                                                                         | Classified 08061993                                       |                                                                                                                 |                                            |                        |                |
| Latitude                                                                                                                                           | 53 53 04 N                                                |                                                                                                                 |                                            |                        |                |
| Longitude                                                                                                                                          | 00 55 34 W                                                |                                                                                                                 |                                            |                        |                |
| EU code                                                                                                                                            | UK11037                                                   |                                                                                                                 |                                            |                        |                |
| Area (ha)                                                                                                                                          | 915.45                                                    |                                                                                                                 |                                            |                        |                |
| Qualifying Interest Feature                                                                                                                        | Conservation Objectives (to maintain or restore):         | Disturbance;<br>Noise Vibration<br>and/or Visual                                                                | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| in a population of the following species or subspecies of waterbird: Eurasian wigeon , <i>Anas Penelope</i> and Eurasian teal , <i>Anas crecca</i> |                                                           | O                                                                                                               | O                                          | X                      | X              |

Table 1-4 - Results of HRA Screening for River Derwent SAC

| River Derwent SAC                                                                                                                                   |                                                                                                           | Impact with the Potential to Result in LSE       |                                            |                        |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Country                                                                                                                                             | England                                                                                                   |                                                  |                                            |                        |                |
| Unitary Authority                                                                                                                                   | North Yorkshire                                                                                           |                                                  |                                            |                        |                |
| Centroid*                                                                                                                                           | SE704474                                                                                                  |                                                  |                                            |                        |                |
| Latitude                                                                                                                                            | 53.9175                                                                                                   |                                                  |                                            |                        |                |
| Longitude                                                                                                                                           | -0.927777778                                                                                              |                                                  |                                            |                        |                |
| SAC EU code                                                                                                                                         | UK0030253                                                                                                 |                                                  |                                            |                        |                |
| Status                                                                                                                                              | Designated Special Area of Conservation (SAC)                                                             |                                                  |                                            |                        |                |
| Area (ha)                                                                                                                                           | 397.87                                                                                                    |                                                  |                                            |                        |                |
| Qualifying Interest Feature                                                                                                                         | Conservation Objectives (to maintain or restore):                                                         | Disturbance;<br>Noise Vibration<br>and/or Visual | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| Annex I Habitat 3260<br>Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                | O                                          | X                      | X              |
|                                                                                                                                                     | The structure and function (including typical species) of qualifying natural habitats                     | O                                                | X                                          | X                      | X              |
|                                                                                                                                                     | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                | X                                          | X                      | X              |
| Annex II Species 1355<br>Otter ( <i>Lutra lutra</i> )                                                                                               | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                | O                                          | O                      | O              |
|                                                                                                                                                     | The structure and function of the habitats of qualifying species                                          | O                                                | X                                          | X                      | X              |
|                                                                                                                                                     | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                | X                                          | X                      | X              |

|                                                                     |                                                                                                           |   |   |   |   |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---|---|---|---|
|                                                                     | The populations of qualifying species                                                                     | X | X | O | O |
|                                                                     | The distribution of qualifying species within the site                                                    | X | X | O | O |
| Annex II Species 1099 River lamprey ( <i>Lampetra fluviatilis</i> ) | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O | O | O | O |
|                                                                     | The structure and function of the habitats of qualifying species                                          | O | X | X | X |
|                                                                     | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O | X | X | X |
|                                                                     | The populations of qualifying species                                                                     | O | X | O | O |
|                                                                     | The distribution of qualifying species within the site                                                    | O | X | O | O |
|                                                                     |                                                                                                           |   |   |   |   |
| Annex II Species 1095 Sea Lamprey ( <i>Petromyzon marinus</i> )     | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O | O | O | O |
|                                                                     | The structure and function of the habitats of qualifying species                                          | O | X | X | X |
|                                                                     | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O | X | X | X |
|                                                                     | The populations of qualifying species                                                                     | O | X | O | O |
|                                                                     | The distribution of qualifying species within the site                                                    | O | X | O | O |
|                                                                     |                                                                                                           |   |   |   |   |
| Annex II Species 1163 Bullhead ( <i>Cottus gobio</i> )              | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O | O | O | O |
|                                                                     | The structure and function of the habitats of qualifying species                                          | O | X | X | X |
|                                                                     | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O | X | X | X |
|                                                                     | The populations of qualifying species                                                                     | O | X | O | O |
|                                                                     | The distribution of qualifying species within the site                                                    | O | X | O | O |
|                                                                     |                                                                                                           |   |   |   |   |



Table 1-5 - Results of HRA Screening for Humber Estuary SAC

| Humber Estuary SAC                                                                 |                                                                                                           | Impact with the Potential to Result in LSE<br><br>O No LSE<br>X Likely Significant Effects |                                            |                        |                |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Country                                                                            | England                                                                                                   |                                                                                            |                                            |                        |                |
| Unitary Authority                                                                  | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire                                      |                                                                                            |                                            |                        |                |
| Centroid*                                                                          | SE838110                                                                                                  |                                                                                            |                                            |                        |                |
| Latitude                                                                           | 53.58916667                                                                                               |                                                                                            |                                            |                        |                |
| Longitude                                                                          | -0.734722222                                                                                              |                                                                                            |                                            |                        |                |
| SAC EU code                                                                        | UK0030170                                                                                                 |                                                                                            |                                            |                        |                |
| Status                                                                             | Designated Special Area of Conservation (SAC)                                                             |                                                                                            |                                            |                        |                |
| Area (ha)                                                                          | 36657.15                                                                                                  |                                                                                            |                                            |                        |                |
| Qualifying Interest Feature                                                        | Conservation Objectives (to maintain or restore):                                                         | Disturbance;<br>Noise Vibration<br>and/or Visual                                           | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| Annex I Habitat 1130<br>Estuaries                                                  | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                          | O                                          | X                      | X              |
|                                                                                    | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                          | O                                          | X                      | X              |
|                                                                                    | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                          | O                                          | X                      | X              |
| Annex I Habitat 1140<br>Mudflats and sandflats not covered by seawater at low tide | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                          | O                                          | X                      | X              |
|                                                                                    | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                          | O                                          | X                      | X              |
|                                                                                    | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                          | O                                          | X                      | X              |

|                                                                                        |                                                                                                           |                                                                                                                 |                                                     |                                |                       |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SAC</b>                                                              |                                                                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                         | England                                                                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                               | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire                                      |                                                                                                                 |                                                     |                                |                       |
| <b>Centroid*</b>                                                                       | SE838110                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                        | 53.58916667                                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                       | -0.734722222                                                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>SAC EU code</b>                                                                     | UK0030170                                                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Status</b>                                                                          | Designated Special Area of Conservation (SAC)                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                       | 36657.15                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                     | <b>Conservation Objectives (to maintain or restore):</b>                                                  | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Annex I Habitat 1110<br>Sandbanks which are slightly covered by sea water all the time | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                        | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                        | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 1150<br>Coastal lagoons * Priority feature                             | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                        | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                        | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 1310                                                                   | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |

|                                                                                      |                                                                                                           |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SAC</b>                                                            |                                                                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                       | England                                                                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                             | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire                                      |                                                                                                                 |                                                     |                                |                       |
| <b>Centroid*</b>                                                                     | SE838110                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                      | 53.58916667                                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                     | -0.734722222                                                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>SAC EU code</b>                                                                   | UK0030170                                                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Status</b>                                                                        | Designated Special Area of Conservation (SAC)                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                     | 36657.15                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                   | <b>Conservation Objectives (to maintain or restore):</b>                                                  | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Salicornia and other annuals colonizing mud and sand                                 | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                      | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 1330<br>Atlantic salt meadows<br>(Glauco-Puccinellietalia maritimae) | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                      | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                      | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 2110<br>Embryonic shifting dunes                                     | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                      | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |

|                                                                                                             |                                                                                                           |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SAC</b>                                                                                   |                                                                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                                              | England                                                                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                                                    | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire                                      |                                                                                                                 |                                                     |                                |                       |
| <b>Centroid*</b>                                                                                            | SE838110                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                                             | 53.58916667                                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                                            | -0.734722222                                                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>SAC EU code</b>                                                                                          | UK0030170                                                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Status</b>                                                                                               | Designated Special Area of Conservation (SAC)                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                                            | 36657.15                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                                          | <b>Conservation Objectives (to maintain or restore):</b>                                                  | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                                                                             | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 2120<br>"Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")" | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                             | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                             | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex I Habitat 2130<br>"Fixed coastal dunes with herbaceous vegetation ("grey dunes")" * Priority feature  | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                             | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                                             | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |

|                                                                  |                                                                                                           |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SAC</b>                                        |                                                                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| Country                                                          | England                                                                                                   |                                                                                                                 |                                                     |                                |                       |
| Unitary Authority                                                | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire                                      |                                                                                                                 |                                                     |                                |                       |
| Centroid*                                                        | SE838110                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| Latitude                                                         | 53.58916667                                                                                               |                                                                                                                 |                                                     |                                |                       |
| Longitude                                                        | -0.734722222                                                                                              |                                                                                                                 |                                                     |                                |                       |
| SAC EU code                                                      | UK0030170                                                                                                 |                                                                                                                 |                                                     |                                |                       |
| Status                                                           | Designated Special Area of Conservation (SAC)                                                             |                                                                                                                 |                                                     |                                |                       |
| Area (ha)                                                        | 36657.15                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                               | <b>Conservation Objectives (to maintain or restore):</b>                                                  | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Annex I Habitat 2160<br>Dunes with <i>Hippopha rhamnoides</i>    | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The structure and function (including typical species) of qualifying natural habitats                     | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
| Annex II Species 1364<br>Grey Seal ( <i>Halichoerus grypus</i> ) | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The structure and function of the habitats of qualifying species                                          | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The populations of qualifying species                                                                     | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                  | The distribution of qualifying species within the site                                                    | O                                                                                                               | O                                                   | O                              | O                     |

|                                                                        |                                                                                                           |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SAC</b>                                              |                                                                                                           | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                         | England                                                                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                               | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire                                      |                                                                                                                 |                                                     |                                |                       |
| <b>Centroid*</b>                                                       | SE838110                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                        | 53.58916667                                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                       | -0.734722222                                                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>SAC EU code</b>                                                     | UK0030170                                                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Status</b>                                                          | Designated Special Area of Conservation (SAC)                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                       | 36657.15                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                     | <b>Conservation Objectives (to maintain or restore):</b>                                                  | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Annex II Species 1095<br>Sea Lamprey ( <i>Petromyzon marinus</i> )     | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                        | The structure and function of the habitats of qualifying species                                          | O                                                                                                               | X                                                   | X                              | X                     |
|                                                                        | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | X                                                   | X                              | X                     |
|                                                                        | The populations of qualifying species                                                                     | O                                                                                                               | X                                                   | O                              | O                     |
|                                                                        | The distribution of qualifying species within the site                                                    | O                                                                                                               | X                                                   | O                              | O                     |
| Annex II Species 1099<br>River Lamprey ( <i>Lampetra fluviatilis</i> ) | The extent and distribution of qualifying natural habitats and habitats of qualifying species             | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                        | The structure and function of the habitats of qualifying species                                          | O                                                                                                               | X                                                   | X                              | X                     |
|                                                                        | The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely | O                                                                                                               | X                                                   | X                              | X                     |

|                                    |                                                                      |                                                                                                                 |                                                     |                                |                       |
|------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SAC</b>          |                                                                      | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| Country                            | England                                                              |                                                                                                                 |                                                     |                                |                       |
| Unitary Authority                  | East Yorkshire and Northern Lincolnshire, Extra-Region, Lincolnshire |                                                                                                                 |                                                     |                                |                       |
| Centroid*                          | SE838110                                                             |                                                                                                                 |                                                     |                                |                       |
| Latitude                           | 53.58916667                                                          |                                                                                                                 |                                                     |                                |                       |
| Longitude                          | -0.734722222                                                         |                                                                                                                 |                                                     |                                |                       |
| SAC EU code                        | UK0030170                                                            |                                                                                                                 |                                                     |                                |                       |
| Status                             | Designated Special Area of Conservation (SAC)                        |                                                                                                                 |                                                     |                                |                       |
| Area (ha)                          | 36657.15                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b> | <b>Conservation Objectives (to maintain or restore):</b>             | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                    | The populations of qualifying species                                | O                                                                                                               | X                                                   | O                              | O                     |
|                                    | The distribution of qualifying species within the site               | O                                                                                                               | X                                                   | O                              | O                     |

Table 1-6 - Results of HRA Screening for Humber Estuary SPA

|                                                               |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                     |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                      | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                             | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                               | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                              | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                            | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                              | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                            | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A021 <i>Botaurus stellaris</i> ; Great bittern (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                               | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                               | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                               | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                               | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |



|                                                           |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                 |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                            | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                  | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                         | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                           | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                          | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                        | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                          | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                        | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A021 <i>Botaurus stellaris</i> ; Great bittern (Breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                           | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                           | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                           | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                           | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
|                                                           | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |

|                                                                          |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                                |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                           | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                 | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                        | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                          | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                         | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                                       | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                         | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                       | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A048 <i>Tadorna tadorna</i> ;<br>Common shelduck (Non-breeding)          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A081 <i>Circus aeruginosus</i> ;<br>Eurasian marsh harrier<br>(Breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                                         |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                               |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                          | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                       | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                         | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                        | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                      | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                        | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                      | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                         | The supporting processes on which the habitats of the qualifying features rely                                         | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
|                                                         | The population of each of the qualifying features                                                                      | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
|                                                         | The distribution of the qualifying features within the site                                                            | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
| A082 <i>Circus cyaneus</i> ; Hen harrier (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>O</b>                       | <b>O</b>              |
|                                                         | The structure and function of the habitats of the qualifying features                                                  | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
|                                                         | The supporting processes on which the habitats of the qualifying features rely                                         | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |

|                                                                  |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                        |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                   | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                         | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                  | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                 | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                               | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                 | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                               | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                                  | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A132 <i>Recurvirostra avosetta</i> ; Pied avocet (Non-breeding); | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                  | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

|                                                             |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                   |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                              | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                    | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                           | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                             | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                            | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                          | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                            | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                          | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A132 <i>Recurvirostra avosetta</i> ; Pied avocet (Breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                             | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |

|                                                                         |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                               |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                          | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                       | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                         | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                        | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                                      | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                        | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                      | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A140 <i>Pluvialis apricaria</i> ; European golden plover (Non-breeding) | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                         | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                         | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                         | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A143 <i>Calidris canutus</i> ; Red knot (Non-breeding)                  | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                         | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                                            |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                  |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                             | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                   | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                          | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                            | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                           | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                         | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                           | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                         | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                            | The supporting processes on which the habitats of the qualifying features rely                                         | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
|                                                            | The population of each of the qualifying features                                                                      | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
|                                                            | The distribution of the qualifying features within the site                                                            | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
| A149 <i>Calidris alpina alpina</i> ; Dunlin (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>O</b>                       | <b>O</b>              |
|                                                            | The structure and function of the habitats of the qualifying features                                                  | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
|                                                            | The supporting processes on which the habitats of the qualifying features rely                                         | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |

|                                                      |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                            |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                       | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                             | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                    | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                      | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                     | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                   | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                     | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                   | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                      | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                      | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A151 <i>Philomachus pugnax</i> ; Ruff (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                      | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                      | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                      | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                      | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |



|                                           |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                 |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                            | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                  | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                         | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                           | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                          | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                        | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                          | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>        | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Eurasian teal <i>Anas crecca</i><br>A052  | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                           | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| Eurasian wigeon <i>Anas Penelope</i> A050 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                           | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                           |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                 |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                            | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                  | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                         | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                           | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                          | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                        | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                          | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>        | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                           | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| mallard <i>Anas platyrhynchos</i><br>A053 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                           | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

|                                          |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                           | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                 | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                        | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                          | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                         | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                       | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                         | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>       | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| turnstone <i>Arenaria interpres</i> A169 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                          | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                          | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                          | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| common pochard <i>Aythya farina</i> A059 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                            |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                  |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                             | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                   | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                          | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                            | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                           | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                         | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                           | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>         | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                            | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                            | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                            | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| greater scaup <i>Aythya marila</i><br>A062 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                            | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                            | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                            | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                            | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

|                                                  |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                        |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                   | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                         | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                  | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                 | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                               | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                 | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>               | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Brent goose <i>Branta bernicla bernicla</i> A675 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                  | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| common goldeneye <i>Bucephala clangula</i> A067  | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                  | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                      |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>            |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                       | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>             | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                    | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                      | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                     | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                   | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                     | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>   | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                      | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                      | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                      | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| sanderling <i>Calidris alba</i> A144 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                      | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                      | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                      | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                      | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

|                                                          |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                           | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                 | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                        | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                          | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                         | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                       | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                         | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                       | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| common ringed plover<br><i>Charadrius hiaticula</i> A137 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                          | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                          | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                          | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| Eurasian curlew <i>Numenius arquata</i> A160             | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                                  |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                        |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                   | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                         | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                  | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                 | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                               | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                 | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>               | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                  | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| whimbrel <i>Numenius</i><br><i>Phaeopus</i> A158 | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                  | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                  | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |



|                                           |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                 |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                            | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                  | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                         | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                           | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                          | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                        | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                          | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>        | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| greenshank <i>Tringa nebularia</i> (A164) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                           | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                           | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| lapwing <i>Vanellus vanellus</i> (A142)   | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                           | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                                                          |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                                |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                           | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                 | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                        | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                          | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                         | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                                       | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                         | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                       | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                                          | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A156 <i>Limosa limosa islandica</i> ; Black-tailed godwit (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                          | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                          | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |

|                                                                 |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                       |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                  | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                        | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                               | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                 | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                              | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                              | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                                 | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A157 <i>Limosa lapponica</i> ; Bar-tailed godwit (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                 | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                 | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                 | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                 | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

|                                                             |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                   |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                              | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                    | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                           | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                             | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                            | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                          | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                            | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                          | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A162 <i>Tringa totanus</i> ; Common redshank (Non-breeding) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                             | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                             | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A195 <i>Sterna albifrons</i> ; Little tern (Breeding)       | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |

|                                                                            |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                                                  |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                             | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                   | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                          | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                            | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                           | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                                         | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                           | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                         | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                                                            | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                            | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                            | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                            | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A130 Eurasian oystercatcher<br><i>Haematopus ostralegus</i><br>(wintering) | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                            | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |

|                                              |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>                    |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                               | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                     | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                            | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                              | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                             | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                           | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                             | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>           | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
|                                              | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                              | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                              | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |
| A141 Grey plover <i>Pluvialis squatarola</i> | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                              | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                              | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                              | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                              | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

|                                    |                                                                                                                        |                                                                                                                 |                                                     |                                |                       |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary SPA</b>          |                                                                                                                        | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                     | <b>England</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>           | <b>City of Kingston-upon-Hull, East Riding of Yorkshire, Lincolnshire, North East Lincolnshire, North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                  | <b>Classified 31/08/2007</b>                                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                    | <b>53.5497</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                   | <b>0.0569</b>                                                                                                          |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                 | <b>UK9006111</b>                                                                                                       |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                   | <b>37,630.24 ha</b>                                                                                                    |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b> | <b>Conservation Objectives (to maintain or restore):</b>                                                               | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Waterbird assemblage               | The extent and distribution of the habitats of the qualifying features                                                 | O                                                                                                               | O                                                   | O                              | O                     |
|                                    | The structure and function of the habitats of the qualifying features                                                  | O                                                                                                               | O                                                   | X                              | X                     |
|                                    | The supporting processes on which the habitats of the qualifying features rely                                         | O                                                                                                               | O                                                   | X                              | X                     |
|                                    | The population of each of the qualifying features                                                                      | O                                                                                                               | O                                                   | X                              | X                     |
|                                    | The distribution of the qualifying features within the site                                                            | O                                                                                                               | O                                                   | X                              | X                     |

**Table 1-7 Results of HRA Screening for Humber Estuary Ramsar site**

|                                                                                                                                                                                                                                                                     |                                                                                                                                    |                                                                                                                 |                                             |                            |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-----------------------|
| <b>Humber Estuary Ramsar Site</b>                                                                                                                                                                                                                                   |                                                                                                                                    | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                             |                            |                       |
| <b>Country</b>                                                                                                                                                                                                                                                      | <b>England</b>                                                                                                                     |                                                                                                                 |                                             |                            |                       |
| <b>Unitary Authority</b>                                                                                                                                                                                                                                            | <b>City of Kingston upon Hull; East Riding of Yorkshire; Humberside; Lincolnshire; North East Lincolnshire; North Lincolnshire</b> |                                                                                                                 |                                             |                            |                       |
| <b>Site Status</b>                                                                                                                                                                                                                                                  | <b>Classified 31072007</b>                                                                                                         |                                                                                                                 |                                             |                            |                       |
| <b>Latitude</b>                                                                                                                                                                                                                                                     | <b>53 53 04 N</b>                                                                                                                  |                                                                                                                 |                                             |                            |                       |
| <b>Longitude</b>                                                                                                                                                                                                                                                    | <b>00 55 34 W</b>                                                                                                                  |                                                                                                                 |                                             |                            |                       |
| <b>EU code</b>                                                                                                                                                                                                                                                      | <b>UK11037</b>                                                                                                                     |                                                                                                                 |                                             |                            |                       |
| <b>Area (ha)</b>                                                                                                                                                                                                                                                    | <b>915.45</b>                                                                                                                      |                                                                                                                 |                                             |                            |                       |
| <b>Qualifying Interest Feature</b>                                                                                                                                                                                                                                  | <b>Conservation Objectives (to maintain or restore):</b>                                                                           | <b>Disturbance; Noise Vibration and/or Visual</b>                                                               | <b>Hydrological Changes (Quality/ Flow)</b> | <b>Air Quality Changes</b> | <b>In-Combination</b> |
| Ramsar Criterion 1: The site is a representative example of a near-natural estuary with the following component habitats:<br>dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. | Not Applicable – no Conservation Objectives for Ramsar Sites.                                                                      | <b>O</b>                                                                                                        | <b>O</b>                                    | <b>X</b>                   | <b>X</b>              |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                    |                                                                                                                 |                                             |                            |                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-----------------------|
| <b>Humber Estuary Ramsar Site</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                    | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                             |                            |                       |
| <b>Country</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>England</b>                                                                                                                     |                                                                                                                 |                                             |                            |                       |
| <b>Unitary Authority</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>City of Kingston upon Hull; East Riding of Yorkshire; Humberside; Lincolnshire; North East Lincolnshire; North Lincolnshire</b> |                                                                                                                 |                                             |                            |                       |
| <b>Site Status</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Classified 31072007</b>                                                                                                         |                                                                                                                 |                                             |                            |                       |
| <b>Latitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>53 53 04 N</b>                                                                                                                  |                                                                                                                 |                                             |                            |                       |
| <b>Longitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>00 55 34 W</b>                                                                                                                  |                                                                                                                 |                                             |                            |                       |
| <b>EU code</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>UK11037</b>                                                                                                                     |                                                                                                                 |                                             |                            |                       |
| <b>Area (ha)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>915.45</b>                                                                                                                      |                                                                                                                 |                                             |                            |                       |
| <b>Qualifying Interest Feature</b>                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Conservation Objectives (to maintain or restore):</b>                                                                           | <b>Disturbance; Noise Vibration and/or Visual</b>                                                               | <b>Hydrological Changes (Quality/ Flow)</b> | <b>Air Quality Changes</b> | <b>In-Combination</b> |
| Ramsar criterion 3<br>The Humber Estuary Ramsar site supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i> . | Not Applicable – no Conservation Objectives for Ramsar Sites.                                                                      | <b>O</b>                                                                                                        | <b>O</b>                                    | <b>X</b>                   | <b>X</b>              |

|                                                                                                       |                                                                                                                                    |                                                                                                                 |                                             |                            |                       |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|-----------------------|
| <b>Humber Estuary Ramsar Site</b>                                                                     |                                                                                                                                    | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                             |                            |                       |
| <b>Country</b>                                                                                        | <b>England</b>                                                                                                                     |                                                                                                                 |                                             |                            |                       |
| <b>Unitary Authority</b>                                                                              | <b>City of Kingston upon Hull; East Riding of Yorkshire; Humberside; Lincolnshire; North East Lincolnshire; North Lincolnshire</b> |                                                                                                                 |                                             |                            |                       |
| <b>Site Status</b>                                                                                    | <b>Classified 31072007</b>                                                                                                         |                                                                                                                 |                                             |                            |                       |
| <b>Latitude</b>                                                                                       | <b>53 53 04 N</b>                                                                                                                  |                                                                                                                 |                                             |                            |                       |
| <b>Longitude</b>                                                                                      | <b>00 55 34 W</b>                                                                                                                  |                                                                                                                 |                                             |                            |                       |
| <b>EU code</b>                                                                                        | <b>UK11037</b>                                                                                                                     |                                                                                                                 |                                             |                            |                       |
| <b>Area (ha)</b>                                                                                      | <b>915.45</b>                                                                                                                      |                                                                                                                 |                                             |                            |                       |
| <b>Qualifying Interest Feature</b>                                                                    | <b>Conservation Objectives (to maintain or restore):</b>                                                                           | <b>Disturbance; Noise Vibration and/or Visual</b>                                                               | <b>Hydrological Changes (Quality/ Flow)</b> | <b>Air Quality Changes</b> | <b>In-Combination</b> |
| Ramsar criterion 5<br>Assemblages of international importance: 153,934 waterfowl, non-breeding season | Not Applicable – no Conservation Objectives for Ramsar Sites.                                                                      | <b>O</b>                                                                                                        | <b>O</b>                                    | <b>X</b>                   | <b>X</b>              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                    |                                                                                                                 |                                                     |                                |                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary Ramsar Site</b>                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                    | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>England</b>                                                                                                                     |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                                                                                                                                                                                                                                                                                                                                                                        | <b>City of Kingston upon Hull; East Riding of Yorkshire; Humberside; Lincolnshire; North East Lincolnshire; North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>Site Status</b>                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Classified 31072007</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>53 53 04 N</b>                                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                                                                                                                                                                                                                                                                                                                                                                | <b>00 55 34 W</b>                                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>EU code</b>                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>UK11037</b>                                                                                                                     |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                                                                                                                                                                                                                                                                                                                                                                | <b>915.45</b>                                                                                                                      |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                                                                                                                                                                                                                                                                                                                                                              | <b>Conservation Objectives (to maintain or restore):</b>                                                                           | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Ramsar criterion 6 – species/populations occurring at levels of international importance: Eurasian golden plover, <i>Pluvialis apricaria</i> ; <i>Altitrons</i> ; Red knot, <i>Calidris canutus</i> ; Dunlin, <i>Calidris alpina</i> ; Alpine; Black-tailed godwit, <i>Limosa Islandica</i> ; Common redshank, <i>Tringa tetanus</i> ; Common shelduck, <i>Tadorna</i> ; Bar-tailed godwit, <i>Limosa lapponica Lapponica</i> ; | Not Applicable – no Conservation Objectives for Ramsar Sites.                                                                      | <b>O</b>                                                                                                        | <b>O</b>                                            | <b>X</b>                       | <b>X</b>              |
| Ramsar criterion 8                                                                                                                                                                                                                                                                                                                                                                                                              | Not Applicable – no Conservation Objectives for Ramsar Sites.                                                                      |                                                                                                                 |                                                     |                                |                       |

|                                                                                                                                                                                                       |                                                                                                                                    |                                                                                                                 |                                                     |                                |                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Humber Estuary Ramsar Site</b>                                                                                                                                                                     |                                                                                                                                    | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                                                                                                                                        | <b>England</b>                                                                                                                     |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                                                                                                                                              | <b>City of Kingston upon Hull; East Riding of Yorkshire; Humberside; Lincolnshire; North East Lincolnshire; North Lincolnshire</b> |                                                                                                                 |                                                     |                                |                       |
| <b>Site Status</b>                                                                                                                                                                                    | <b>Classified 31072007</b>                                                                                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                                                                                                                                       | <b>53 53 04 N</b>                                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                                                                                                                                      | <b>00 55 34 W</b>                                                                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>EU code</b>                                                                                                                                                                                        | <b>UK11037</b>                                                                                                                     |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                                                                                                                                      | <b>915.45</b>                                                                                                                      |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                                                                                                                                    | <b>Conservation Objectives (to maintain or restore):</b>                                                                           | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal waters and their spawning areas. |                                                                                                                                    | <b>X</b>                                                                                                        | <b>X</b>                                            | <b>X</b>                       | <b>X</b>              |

Table 1-8 - Results of HRA Screening for Skipwith Common SAC

| Skipworth Common SAC                                                                                            |                                                                                       | Impact with the Potential to Result in LSE       |                                            |                        |                |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|------------------------|----------------|
| Country                                                                                                         | England                                                                               |                                                  |                                            |                        |                |
| Unitary Authority                                                                                               | North Yorkshire                                                                       |                                                  |                                            |                        |                |
| Centroid*                                                                                                       | SE668362                                                                              |                                                  |                                            |                        |                |
| Latitude                                                                                                        | 53.82777778                                                                           |                                                  |                                            |                        |                |
| Longitude                                                                                                       | -0.9975                                                                               |                                                  |                                            |                        |                |
| SAC EU code                                                                                                     | UK0030276                                                                             |                                                  |                                            |                        |                |
| Status                                                                                                          | Designated Special Area of Conservation (SAC)                                         |                                                  |                                            |                        |                |
| 294.6                                                                                                           | 36657.15                                                                              |                                                  |                                            |                        |                |
| Qualifying Interest Feature                                                                                     | Conservation Objectives (to maintain or restore):                                     | Disturbance;<br>Noise Vibration<br>and/or Visual | Hydrological<br>Changes<br>(Quality/ Flow) | Air Quality<br>Changes | In-Combination |
| Annex I Habitat 4010<br>Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath | The extent and distribution of qualifying natural habitats                            | O                                                | O                                          | O                      | O              |
|                                                                                                                 | The structure and function (including typical species) of qualifying natural habitats | O                                                | O                                          | X                      | X              |
|                                                                                                                 | The supporting processes on which qualifying natural habitats rely                    | O                                                | O                                          | X                      | X              |
| Annex I Habitat 4030<br>European dry heaths                                                                     | The extent and distribution of qualifying natural habitats                            | O                                                | O                                          | O                      | O              |
|                                                                                                                 | The structure and function (including typical species) of qualifying natural habitats | O                                                | O                                          | X                      | X              |
|                                                                                                                 | The supporting processes on which qualifying natural habitats rely                    | O                                                | O                                          | X                      | X              |

Table 1-9 - Results of HRA Screening for Thorne and Hatfield Moor SPA

|                                                                  |                                                                                |                                                                                                                 |                                                     |                                |                       |
|------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Thorne and Hatfield Moor SPA</b>                              |                                                                                | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                   | <b>England</b>                                                                 |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                         | <b>East Riding of Yorkshire, North Lincolnshire, Doncaster</b>                 |                                                                                                                 |                                                     |                                |                       |
| <b>SPA Status</b>                                                | <b>Classified 16/08/2000</b>                                                   |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                  | <b>53 38 16 N</b>                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                 | <b>00 53 53 W</b>                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>SPA EU code</b>                                               | <b>UK9005171</b>                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                 | <b>2449.2</b>                                                                  |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                               | <b>Conservation Objectives (to maintain or restore):</b>                       | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| A224 <i>Caprimulgus europaeus</i> ; European nightjar (Breeding) | The extent and distribution of the habitats of the qualifying features         | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                  | The structure and function of the habitats of the qualifying features          | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The supporting processes on which the habitats of the qualifying features rely | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                  | The population of each of the qualifying features                              | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                  | The distribution of the qualifying features within the site                    | O                                                                                                               | O                                                   | O                              | O                     |

Table 1-10 - Results of HRA Screening for Thorne Moor SAC

|                                                                                        |                                                                                       |                                                                                                                 |                                                     |                                |                       |
|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------|-----------------------|
| <b>Thorne Moor SAC</b>                                                                 |                                                                                       | <b>Impact with the Potential to Result in LSE</b><br><br><b>O No LSE</b><br><b>X Likely Significant Effects</b> |                                                     |                                |                       |
| <b>Country</b>                                                                         | England                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Unitary Authority</b>                                                               | East Yorkshire and Northern Lincolnshire, South Yorkshire                             |                                                                                                                 |                                                     |                                |                       |
| <b>Centroid*</b>                                                                       | SE728163                                                                              |                                                                                                                 |                                                     |                                |                       |
| <b>Latitude</b>                                                                        | 53.63833333                                                                           |                                                                                                                 |                                                     |                                |                       |
| <b>Longitude</b>                                                                       | -0.8975                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>SAC EU code</b>                                                                     | UK0012915                                                                             |                                                                                                                 |                                                     |                                |                       |
| <b>Status</b>                                                                          | Designated Special Area of Conservation (SAC)                                         |                                                                                                                 |                                                     |                                |                       |
| <b>Area (ha)</b>                                                                       | 1911.02                                                                               |                                                                                                                 |                                                     |                                |                       |
| <b>Qualifying Interest Feature</b>                                                     | <b>Conservation Objectives (to maintain or restore):</b>                              | <b>Disturbance;<br/>Noise Vibration<br/>and/or Visual</b>                                                       | <b>Hydrological<br/>Changes<br/>(Quality/ Flow)</b> | <b>Air Quality<br/>Changes</b> | <b>In-Combination</b> |
| Annex I Habitat 7120<br><br>Degraded raised bogs still capable of natural regeneration | The extent and distribution of qualifying natural habitats                            | O                                                                                                               | O                                                   | O                              | O                     |
|                                                                                        | The structure and function (including typical species) of qualifying natural habitats | O                                                                                                               | O                                                   | X                              | X                     |
|                                                                                        | The supporting processes on which qualifying natural habitats rely                    | O                                                                                                               | O                                                   | X                              | X                     |

## 2 APPROPRIATE ASSESSMENT

### 2.1 Structure of Assessment

- 2.1.1. This HRA considers the potential effects identified during HRA screening in more detail in terms of their nature and extent. The objective of the HRA is to establish whether the Proposed Scheme will adversely affect the integrity of European sites, taking into account mitigation measures and the potential for further in-combination effects that may arise from other plans or projects.
- 2.1.2. The following steps have been incorporated into the HRA:
- Gathering information on, and exploring the reasons for, the relevant European site designations;
  - Determining the nature of the environmental conditions required to maintain the integrity of the European sites and the trends in associated environmental processes;
  - Identifying whether the Proposed Scheme could lead to an impact on any identified processes that support the European sites;
  - Determining whether the identified impact could result in an adverse effect on the integrity of European sites;
  - Identifying other plans and projects that might affect these European sites in-combination with the Proposed Scheme and establishing whether there are any adverse in-combination effects; and
  - Developing mechanisms to enable delivery of measures to avoid or mitigate any identified potential effects.
- 2.1.3. Section 4 of this report provides information on each of the European Sites. This includes:
- Information on the qualifying interests (i.e. the reasons for designation) of each European site;
  - The Conservation Objectives of each European Site (i.e. the target condition for each of the qualifying features, whereby the European Site will be considered to be in favourable condition and contributing to the overall objectives of the Natura 2000 network;
  - A general description of each of the European Sites and their biophysical characteristics;
  - A description of the current / recent condition of each of the European Sites (where condition assessment information was available); and
  - Key Issues and Threats to each European Site, as identified through NE Site Improvement Plans (SIP), condition assessment reports, and European Commission data sheets (again, where available).
- 2.1.4. Section five of this report provides an assessment of the impacts of the Proposed Scheme on functionally-linked habitat. This includes consideration of impacts such as noise, lighting, hydrological (water quality and quantity) and visual disturbance of European Site qualifying features, where these occur outside the boundaries of the European Sites. For example, this section includes an assessment of the potential for otters forming part of the River Derwent and Lower Derwent Valley SAC populations to be disturbed by construction activities associated with the Proposed Scheme.
- 2.1.5. Section 6 of this report assesses the potential for operation of the Proposed Scheme to lead to adverse effects on the integrity of European Sites as a result of air quality impacts. This



includes consideration of changes in ambient levels of nitrous oxides (NO<sub>x</sub>) and ammonia (NH<sub>3</sub>). It also includes consideration of changes in nitrogen deposition rates and associated potential acidification of European Site habitats. The assessment uses a range of information presented in Chapter 6 (Air Quality) of the ES. Relevant information from the Air Quality chapter has been extracted and is presented in section 6 of this report. The reader is nevertheless advised to refer to the Air Quality chapter for full details of the Air Quality impact assessment process.

## 2.2 Assumptions for Appropriate Assessment

2.2.1. In accordance with recent case law (Ref 4), avoidance and mitigation measures designed to reduce harm to European Sites were not considered during the screening for LSE. At this stage in the HRA process (Stage 2: Appropriate Assessment) it is appropriate to consider mitigation measures during the assessment. This assessment has therefore been carried out assuming the implementation of mitigation measures embedded in the Proposed Scheme design and targeted measures identified to address potential effects on European Sites.

2.2.2. The following assumptions are therefore relevant:

- A Construction Environmental Management Plan (CEMP) will be implemented during construction, in accordance with a proposed requirement in the draft DCO (Doc Ref 3.1);
- Implementation of a Decommissioning Environmental Management Plan (DEMP) during decommissioning, in accordance with a proposed requirement in the draft DCO (Doc Ref 3.1);
- The use, where practicable, of trenchless construction techniques for installation of the Gas Pipeline between the GRF and the AGI when crossing watercourses, , with measures to address the use of trenched construction techniques if required;
- Targeted mitigation measures to avoid or minimise disturbance of otters that may form part of the River Derwent SAC or Lower Derwent Valley SAC populations;
- Pollution control measures that would be incorporated into the Surface Water Drainage Strategy for the operational Proposed Scheme, secured by a requirement to the draft DCO (Doc Ref 3.1);
- An ecologically sensitive lighting design for the Proposed Scheme, secured by a requirement to the draft DCO (Doc Ref 3.1);
- Combustion control processes during operation of the Gas Generating Stations, in order to achieve low NO<sub>x</sub> emissions equivalent to 50 mg/Nm<sup>3</sup>; and
- The setting of an annualised ammonia (NH<sub>3</sub>) budget to limit emissions of this pollutant to an annualised budget equivalent to 120 tonnes, should the Proposed Scheme operate with Selective Catalytic Reduction (SCR).

2.2.3. Consideration has also been given in this HRA Report to how baseline air quality is likely to change in the future. Future national emissions ceilings are also likely to reduce emissions of both NO<sub>x</sub> and ammonia levels and subsequently deposition in the medium to long term. For example, The National Emissions Ceilings Regulations (2018; Ref 16) commit the UK to reducing ammonia emissions by 8% between 2020 and 2029 and by 16% from 2030 onwards (see paragraph 6.5.47 of the ES Air Quality Chapter (Examination Library Reference APP-074)). Government policy and socioeconomic factors are also promoting the uptake of ultra-low and zero emission vehicles. Current government policy is for all new car and van sales from 2040 onwards to be of ultra-low and zero-emission vehicles, with new conventional

diesel and petrol-fuelled vehicles banned from sale. It is therefore reasonable to assume that there will be a reduction in emissions from the UK vehicle fleet going forward.

## **2.3 In-Combination Effects on Natura 2000 and Ramsar Sites**

- 2.3.1. It is a requirement of the Habitats Regulations that the impacts and effects of a plan or project are not considered in isolation. Where potential effects could become significant in-combination with other plans and projects, these potential effects are also considered within the HRA.
- 2.3.2. ES Chapter 17 identifies a number of development proposals to be considered for in-combination assessment. These were subject to an initial screening to assess whether, given the nature, location and scale of each proposal, there was an objective possibility that they could combine with the effects of the Proposed Scheme to lead to LSE and / or an adverse effect on the integrity of the European Sites considered. Those of relevance are listed in Table 3-1 below and will be considered in this HRA where the potential for adverse effects has been identified.

Table 2-1 - Screening of Other Projects and Plans for Potential In-Combination Effects

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                                                                    | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2016/0401/REM      | 554m E                        | Reserved matters approval is sought for the scale, layout, external appearance and landscaping of 14 dwellings, means of access was approved at outline stage                                                                                                          | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                 |
| 2016/1124/COU      | 4413m SW                      | Change of Use of land to 20 pitch caravan park and camping area with conversion of existing outbuildings into shower and toilet facilities                                                                                                                             | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                 |
| 2017/1018/FULM     | 0m -                          | Construction of 40 MW battery energy storage barn to provide back-up electricity services to the National Grid for a period of 25 years from the date of commissioning and retention of building thereafter, infrastructure, bund and landscaping on paddock and field | N                                      | Within Proposed Scheme boundary, with potential for construction activities to overlap with those associated with Proposed Scheme, with the AGI and gas pipeline being the closest parts of the Proposed Scheme to this project. The Preliminary Ecological Appraisal prepared for the development predicts no significant effects on ecological resources and that the development will be located within an area of limited ecological interest. |
| 2015/1405/OUT      | 1443m SW                      | Outline application including access for the erection of up to 45 dwellings                                                                                                                                                                                            | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and                                                                                                                                                                                                                                                                    |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                                                                                                                 | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                              |
|--------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                               |                                                                                                                                                                                                                                                                                                                     |                                        | zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                                 |
| 2017/0261/FULM     | 6531m W                       | Proposed engineering operation comprising the construction of flood alleviation embankment, land engineering works, alteration and partial removal of existing flood embankment and creation of temporary construction access at land north of Temple Hirst flood defences at Street Record Main Road, Temple Hirst | N                                      | Project comprises flood defence embankment and associated infrastructure. Located in excess of 6 km from Site; nature and distance of this development from the Project means significant cumulative effects are unlikely to arise.                                                |
| 2017/0822/FULM     | 465m SW                       | Proposed construction of new energy centre comprising of new main energy centre building and ancillary tanks, containers and services buildings                                                                                                                                                                     | N                                      | Minor development, which will not result in any point source emissions to air; hence negligible potential for significant cumulative air quality impacts on designated sites.                                                                                                      |
| 2017/0272/FUL      | 2615m SW                      | Proposed erection of apartments on brownfield site                                                                                                                                                                                                                                                                  | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2016/0875/FUL      | 9939m W                       | Proposed Erection of 54 units                                                                                                                                                                                                                                                                                       | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and                                                                                                    |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                                                                                     | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                                                  |
|--------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                               |                                                                                                                                                                                                                                                                                         |                                        | zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                                                     |
| 2017/0542/OUTM     | 10619m W                      | Outline to include access (all other matters reserved) for erection of up to 120 dwellings and associated car parking, garages, landscaping, open space and details of including demolition and removal of all structures, buildings and hard standing to facilitate future development | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                     |
| 2015/1392/EIA      | 9273m W                       | Erection of a new single storey production facility for the manufacture of insulation boarding together with associated vehicle movement and parking areas.                                                                                                                             | N                                      | Project comprises erection of a new single-storey production facility for the manufacture of insulation boarding together with associated vehicle movement and parking areas. Small scale and nature of development and distance from Site means significant cumulative effects are unlikely to arise. |
| 2015/0367/FUL      | 7330m W                       | Proposed development of 125 no. dwellings with associated access from Barff Lane, landscaping, new footpath and drainage pond                                                                                                                                                           | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                     |
| 2016/0978/FULM     | 7325m W                       | Proposed residential development of 53 dwellings including access and associated infrastructure                                                                                                                                                                                         | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and                                                                                                                        |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                             | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                              |
|--------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                               |                                                                                                                                                 |                                        | zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                                 |
| 2015/0389/FUL      | 7379m W                       | Proposed erection of 52 residential dwellings including site access                                                                             | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2017/0577/OUTM     | 9647m W                       | Outline application for residential development for up to 68 No. dwellings with all matters reserved                                            | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2015/0105/OUT      | 11176m W                      | Outline application with all matters reserved for the erection of residential development 119 dwellings                                         | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2014/1028/OUT      | 8773m W                       | Outline planning permission for residential development including access. All other matters are reserved for future consideration 276 dwellings | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2015/0676/FUL      | 11421m W                      | Proposed installation of 960 ground mounted PV panels                                                                                           | N                                      | Small scale and nature of development and distance from Site means significant cumulative effects are unlikely to arise.                                                                                                                                                           |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                         | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                                                     |
|--------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2015/0007/FUL      | 6872m NW                      | Erection of a two storey building to accommodate new social and leisure facilities                                                                                                                                          | N                                      | Small scale and nature of development and distance from Site means significant cumulative effects are unlikely to arise.                                                                                                                                                                                  |
| 2016/0140/REM      | 9643m NW                      | Reserved matters application relating to appearance, landscaping and scale for buildings C,D,E,F and farmhouse of approval 2012/0485/OUT                                                                                    | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                        |
| 2014/0202/OUT      | 6950m NW                      | Outline application including access for the erection of 13 No. Dwellings                                                                                                                                                   | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                        |
| 2015/0517/OUT      | 9146m N                       | Outline application to include access and layout for residential and associated development (35 dwellings) on land to the west of York Road (The Paddocks)                                                                  | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                        |
| 2017/1055/COD      | 5264m NW                      | Request for written confirmation of compliance of conditions of planning approval CO/2012/1185 (8/19/1011C/PA) for outline application for the erection of 1200 dwellings (4 existing to be demolished), employment, public | N                                      | Located in excess of 5 km from Proposed Scheme. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                                                                                                                                                                                                                                                 | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                              |
|--------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                               | open space, shopping and community facilities (including up to 2,000 sq.m. of shops), together with associated footpaths, cycleways, roads, engineering                                                                                                                                                                                                                                                                                             |                                        |                                                                                                                                                                                                                                                                                    |
| 2016/1408/FULM     | 6493m NW                      | Conversion of former courthouse building to form 16No. flats with associated management suite/office, external works including works to windows and doors including new openings with associated vehicular and cycle parking                                                                                                                                                                                                                        | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2015/0341/OUT      | 7898m NW                      | Hybrid application comprising outline proposals for the erection of circa 200 new dwellings including the construction of a new junction onto Flaxley Road, the laying out of open space and children's play area, pumping station, siting of electricity substation, landscaping and creation of areas for sustainable drainage including connection to water course and detailed proposals for the conversion of agricultural buildings to form 2 | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |



| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                        | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                              |
|--------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                               | dwelling together with associated works including the creation of curtilages and areas of driveways/hardstanding (including external areas relating to the existing farm house) and demolition at Hempbridge Farm and land |                                        |                                                                                                                                                                                                                                                                                    |
| 2016/0178/FUL      | 5190m NW                      | Construction of a new glucose syrup plant and associated storage tanks, pipebridges, roads and hardstandings within an existing industrial site                                                                            | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 2016/0528/FUL      | 7689m NW                      | Section 73 application to vary condition 05 (plans) of planning permission 2014/0685/FUL<br>Proposed installation of 4 x 18 m high floodlights onto existing rugby pitch and training area                                 | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 17/01720/STPLF     | 5004m NE                      | Erection of 300 dwellings with associated access, open space, landscaping and infrastructure                                                                                                                               | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                                         | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17/02265/STOUT     | 4625m NE                      | OUTLINE - Erection of Residential Development (up to 175 dwellings) (Access to be considered)                                                                                                                                               | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                                                        |
| 17/03450/CM        | 7804m NE                      | Installation of an Anaerobic Digestion (AD) Plant including; AD Digester tanks; a biomethane gas to grid plant; CHP (Combined Heat and Power) unit; flare; buffer and treatment tanks; and a digestate storage lagoon with associated works | N                                      | Development would give rise to operational emissions, which could potentially combine with those from the Propose Scheme leading to cumulative effects. The development is located in excess of 2 km from any Natura 2000 Sites and in excess of 7.5 km from the Site. It is therefore considered unlikely to contribute significantly to air quality impacts on Natura 2000 Sites (the only effect which is considered potentially significant in-combination with The Proposed Scheme). |
| 16/01584/STPLF     | 7089m N                       | Erection of a building consisting of 6 aircraft hangers and storage following demolition of existing buildings and creation of a new vehicular access road                                                                                  | N                                      | Small scale and nature of development and distance from Site means significant cumulative effects are unlikely to arise. Emissions to air from operational airfield unlikely to contribute significantly to air quality impacts on European Sites                                                                                                                                                                                                                                         |
| 16/00528/PLF       | 10473m E                      | Erection of 17 dwellings and associated surface water drainage                                                                                                                                                                              | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                                                        |

| Planning reference | Distance from Proposed Scheme | Summary Description                                                                                                                | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                              |
|--------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16/02460/OUT       | 2411m S                       | Outline - Erection of 10 dwellings with associated access and parking (access and layout to be considered)                         | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 15/03487/STPLF     | 4810m S                       | Erection of 94 dwellings with associated open space, drainage infrastructure and landscaping                                       | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 17/03359/STPLF     | 5437m E                       | Erection of 92 dwellings with associated parking (with access from adopted road for Phase 1)                                       | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 17/00144/STREM     | 5580m E                       | Erection of 138 dwellings following outline permission 13/00931/STOUT (All matters to be considered)                               | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |
| 16/04220/STREM     | 6239m E                       | Erection of 30 dwellings following Outline planning permission 12/04725/STOUT (Appearance, Landscaping and Scale to be considered) | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |

| Planning reference         | Distance from Proposed Scheme | Summary Description                                                                                                                                                                                                         | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17/00508/STPLF             | 6116m SE                      | Erection of 77 dwellings with associated garages, infrastructure and access                                                                                                                                                 | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years.                                                                                                                                                                                          |
| Eggborough CCGT            | 8500m W                       | Eggborough CCGT - The construction and operation of a new CCGT generating station with a capacity of up to 2,500 megawatts, new gas pipeline to the NTS and other associated development                                    | Y                                      | Development would give rise to operational emissions, which could potentially combine with those from the Propose Scheme leading to cumulative effects. During operation, this project would generate a sufficient level of emissions such that cumulative effects with the Proposed Scheme could be significant. This project has therefore been included within the cumulative assessment for air quality, which also informs the cumulative assessment for Biodiversity. |
| Thorpe Marsh Gas Pipeline  | 8838m SW                      | Thorpe Marsh Gas Pipeline - The Proposed Gas Pipeline will be a continuously welded buried steel pipeline of approximately 18 km in length                                                                                  | N                                      | Distance of development from the Proposed Scheme. SoS Decision letter identifies that no likely significant effects to European Sites are expected and that this concurs with advice from NE. The decision letter also identifies that positive biodiversity enhancements are predicted.                                                                                                                                                                                    |
| Thorpe Marsh Power Station |                               | Thorpe Marsh Power Ltd received a Section 36 Consent from the DECC to construct a 1,500MW, with a tolerance of up to 5 per cent, gas-fired power station to be known as Thorpe Marsh Power Station on the former coal-fired | Y                                      | Development would give rise to operational emissions, which could potentially combine with those from the Propose Scheme leading to cumulative effects. During operation, this project would generate a sufficient level of emissions such that cumulative effects with the Proposed Scheme could be significant. This project has therefore been included within the cumulative assessment for air quality, which also informs the cumulative assessment for Biodiversity. |

| Planning reference                                                    | Distance from Proposed Scheme | Summary Description                                                                                                                                                    | Potential in-combination effects (Y/N) | Notes                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       |                               | Thorpe Marsh Power Station site in October 2011.                                                                                                                       |                                        |                                                                                                                                                                                                                                                                                    |
| Knottingley Power Project                                             | 15344m W                      | Knottingley Power Project - A 1500 MW Combined Cycle Gas Turbine (CCGT) power station and associated infrastructure.                                                   | N                                      | Potential for operational emissions to combine with those from the Proposed Scheme. AQ Assessment has confirmed that Project is located so far from the designated sites considered, that any in-combination effects would be imperceptible.                                       |
| Ferrybridge D Combined Cycle Gas Turbine (CCGT) Power Station Project | 19,000m W                     | A new CCGT generating station of circa 2000 megawatts output capacity and associated development including a gas supply pipeline to the National Transmission Network. | N                                      | Considered due to potential for overlapping effects onto designated sites. AQ Assessment has confirmed that Project is located so far from the designated sites considered, that any cumulative effects would be imperceptible.                                                    |
| 2016/0401/REM                                                         | 10220 m N                     | Reserved matters approval is sought for the scale, layout, external appearance and landscaping of 14 dwellings, means of access was approved at outline stage          | N                                      | Small-scale development. Vehicle emissions arising from operational use of development likely to be negligible and long term air quality strategy for UK will see ultra-low and zero emissions vehicles making up an increasing proportion of the vehicle fleet over coming years. |

## 3 RELEVANT EUROPEAN SITES

### 3.1 European Site Description

- 3.1.1. Site data for the European sites considered in this report are summarised in Table 4-1 below. Data were collated using information contained within Natura 2000 and Ramsar data forms held by the Joint Nature Conservation Council (JNCC). Site conditions, issues and threats were determined through Natural England's Site of Special Scientific Interest (SSSI) condition reviews and the 2014/15 Site Improvement Plans.

Table 3-1 – Relevant European Sites

| Site                            | Qualifying Feature                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                      | Conservation Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                         | Key Issues and Threats                                                                                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Habitats                                                                                                                                                                                                                                      | Species                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                              |
| <b>Lower Derwent Valley SAC</b> | <p>Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>)</p> <p>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)</p> | <p>Otter <i>Lutra lutra</i></p>                                                                                                                                                                                                                                                                                                                      | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining and restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of qualifying natural habitats and habitats of qualifying species</li> <li>- The structure and function (including typical species) of qualifying natural habitats</li> <li>- The structure and function of the habitats of qualifying species</li> <li>- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely on</li> <li>- The populations of qualifying species, and</li> <li>- The distribution of qualifying species within the site</li> </ul> | <p>The Lower Derwent Valley contains a greater area of high-quality examples of lowland hay meadows than any other site in the UK. The abundance of the rare narrow-leaved water-dropwort <i>Oenanthe silaifolia</i> is a notable feature. Traditional management has ensured that ecological variation is well-developed and in the transition between habitat types including wet and dry grassland, swamp, fen, and damp alder woodland.</p> | <p>H04 (H) air pollution, air-borne pollutants</p> <p>G01 (H) outdoor sports and leisure activities, recreational activities</p> <p>I01 (H) Invasive non-native species</p> <p>K02 (H) Biocenotic evolution, succession</p> <p>A04 (H) grazing</p>           |
| <b>Lower Derwent Valley SPA</b> | N/A                                                                                                                                                                                                                                           | <p>Qualifying species under article 4.1 (regular use by 1% or more of the GB population):</p> <p>Breeding:<br/>Northern shoveler</p> <p>Over winter:<br/>Eurasian wigeon<br/><i>Anas clypeata</i></p> <p>Bewick's swan<br/><i>Cyngus columbianus bewickii</i></p> <p>Golden plover<br/><i>Pluvialis apricaria</i></p> <p>Ruff <i>Philomachus</i></p> | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of the habitats and qualifying features</li> <li>- The structure and function of the habitats of the qualifying features</li> <li>- The supporting processes on which the habitats of the qualifying features rely</li> <li>- The population of each of the qualifying features, and</li> </ul>                                                                                                                                                                                                                                     | <p>The Lower Derwent Valley is a major flood plain system in east and north Yorkshire. The valley holds a series of neutral alluvial flood meadows, fens, swamps, valley mires, alder woodlands and other fresh water habitats. It is one of the largest and most important examples of traditionally managed flood meadow habitat in the UK. The site is of outstanding importance for a diverse range of waterbirds throughout the year.</p>  | <p>K02 (H) Biocenotic evolution, succession</p> <p>G01 (H) outdoor sports and leisure activities, recreational activities</p> <p>J02 (H) human induced changes in hydraulic conditions</p> <p>I01 (H) Invasive non-native species</p> <p>A04 (H) grazing</p> |



| Site                               | Qualifying Feature                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Conservation Objectives                                                                                          | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                                | Key Issues and Threats                                                                                   |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                    | Habitats                                                                                                                                                                                                                                                                                       | Species                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                          |
|                                    |                                                                                                                                                                                                                                                                                                | <p><i>pugnax</i></p> <p>Qualifying species under article 4.2 (regular use by 1% or more of the biogeographical populations):<br/> Wintering -Teal <i>Anas crecca</i><br/> Wintering bird assemblage of international importance including those listed above and Lapwing <i>Vanellus vanellus</i>, Pochard <i>Aythya ferina</i>, Shoveler <i>Anas clypeata</i>, Mallard <i>Anas platyrhynchos</i>, and Wigeon <i>Anas penelope</i></p>                     | <ul style="list-style-type: none"> <li>- The distribution of the qualifying features within the site.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                          |
| <b>Lower Derwent Valley Ramsar</b> | <p>Criterion 1<br/>The site represents one of the most important examples of traditionally managed species-rich alluvial flood meadow habitat remaining in the UK. The river and flood meadows play a substantial role in the hydrological and ecological functioning of the Humber Basin.</p> | <p>Criterion 2<br/>The site has a rich assemblage of wetland invertebrates including 16 species of dragonfly and damselfly, 15 British Red Data Book wetland invertebrates as well as a leafhopper, <i>Cicadula ornate</i> for which Lower Derwent Valley is the only known site in Great Britain.</p> <p>Criterion 4<br/>The site qualifies as a staging post for passage birds in spring. Of particular note are the nationally important numbers of</p> | N/A                                                                                                              | <p>The Lower Derwent Valley represents one of the most important examples of traditionally managed species-rich alluvial flood meadow habitat remaining in the UK. These grasslands, which were formerly widespread, are now very restricted in distribution due to agricultural improvement. The river and these floodlands play a substantial role in the hydrological and ecological functioning of the internationally important Humber basin.</p> | <p>Water diversion for irrigation/domestic/industrial use<br/>Reservoir/barrage/dam impact: flooding</p> |



| Site                     | Qualifying Feature                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                  | Conservation Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Key Issues and Threats                                                                                                                                                                                                                   |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | Habitats                                                                                                                                                                                         | Species                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                          |
|                          |                                                                                                                                                                                                  | <p>Ruff, <i>Philomachus pugnax</i> and Whimbrel, <i>Numenius phaeopus</i>.</p> <p>Criterion 5<br/>Assemblage of international importance – peak counts in winter: 31,942 waterfowl</p> <p>Criterion 6<br/>Species/populations occurring at levels of international importance – peak counts in winter: Eurasian wigeon <i>Anas Penelope</i> 8,350 (2% GB population), Eurasian teal <i>Anas crecca</i> 4,200 (1% population)</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                          |
| <b>River Derwent SAC</b> | Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation. Rivers with floating vegetation often dominated by water-crowfoot. | <p>River Lamprey <i>Lampetra fluviatilis</i></p> <p>Sea lamprey <i>Petromyzon marinus</i></p> <p>Bullhead <i>Cottus gobio</i></p> <p>Otter <i>Lutra lutra</i></p>                                                                                                                                                                                                                                                                | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining and restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of qualifying natural habitats and habitats of qualifying species</li> <li>- The structure and function (including typical species) of qualifying natural habitats</li> <li>- The structure and function of the habitats of qualifying species</li> <li>- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely on</li> <li>- The populations of qualifying species, and</li> </ul> | <p>The Yorkshire Derwent is considered to represent one of the best British examples of the classic river profile. This lowland section, stretching from Ryemouth to the confluence with the Ouse, supports diverse communities of aquatic flora and fauna. Fed from an extensive upland catchment, the lowland course of the Derwent has been considerably diverted and extended as a result of glacial action in the Vale of Pickering.</p> <p>The river supports an aquatic flora uncommon in Northern Britain. Several species, including river water-dropwort <i>Oenanthe fluviatilis</i>, flowering rush <i>Butomus umbellatus</i>, shining pondweed <i>Potamogeton lucens</i>, arrowhead <i>Sagittaria sagittifolia</i>, opposite-leaved pondweed <i>Groenlandia densa</i> and narrow-leaved water-parsnip <i>Berula erecta</i> are more typically found in lowland rivers in southern England</p> | <p>J02 (H) human induced changes in hydraulic conditions</p> <p>I01 (H) Invasive non-native species</p> <p>A02 (H) Modification of cultivation practices</p> <p>H02 (H) Pollution to groundwater (point sources and diffuse sources)</p> |

| Site                      | Qualifying Feature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                   | Conservation Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Key Issues and Threats                                                                                                                                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | Habitats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Species                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>- The distribution of qualifying species within the site</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                   |
| <b>Humber Estuary SAC</b> | <p>Estuaries</p> <p>Mudflats and sandflats not covered by seawater at low tide</p> <p>Sandbanks which are slightly covered by sea water all the time</p> <p>Coastal lagoons</p> <p><i>Salicornia</i> and other annuals colonising mud and sand</p> <p>Atlantic salt meadows</p> <p>Embryonic shifting dunes</p> <p>Shifting dunes along the shoreline with <i>Ammophila arenaria</i> “white dunes”</p> <p>Fixed coastal dunes with herbaceous vegetation “grey dunes”</p> <p>Dunes with <i>Hippopha rhamnoides</i></p> | <p>Sea lamprey <i>Petromyzon marinus</i></p> <p>River lamprey <i>Lampetra fluviatilis</i></p> <p>Grey seal <i>Halichoerus grypus</i></p>                                                                                                                                                                                                                                          | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining and restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of qualifying natural habitats and habitats of qualifying species</li> <li>- The structure and function (including typical species) of qualifying natural habitats</li> <li>- The structure and function of the habitats of qualifying species</li> <li>- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely on</li> <li>- The populations of qualifying species, and</li> <li>- The distribution of qualifying species within the site</li> </ul> | <p>The Humber is the second largest coastal plain Estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. The range of salinity, substrate and exposure to wave action influences the estuarine habitats and the range of species that utilise them; these include a breeding bird assemblage, winter and passage waterfowl, river and sea lamprey, grey seals, vascular plants and invertebrates.</p> | <p>J02 (H) human induced changes in hydraulic conditions</p> <p>M01 (H) changes in abiotic conditions</p> <p>M02 (H) changes in biotic conditions</p> <p>E02 (H) Industrial or commercial areas</p> <p>K01 (H) Abiotic (slow) natural processes</p>               |
| <b>Humber Estuary SPA</b> | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Qualifying species under article 4.1 (regular use by 1% or more of the GB population):</p> <p>Eurasian teal <i>Anas crecca</i>, Eurasian wigeon <i>Anas Penelope</i>, mallard <i>Anas platyrhynchos</i>, turnstone <i>Arenaria interpres</i>, common pochard <i>Aythya farina</i>, greater scaup <i>Aythya marila</i>, Brent goose <i>Branta bernicla bernicla</i>, common</p> | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of the habitats and qualifying features</li> <li>- The structure and function of the habitats of the qualifying features</li> <li>- The supporting processes on which the habitats of the qualifying features rely</li> <li>- The population of each of the qualifying features, and</li> </ul>                                                                                                                                                                                                                                     | <p>The Humber Estuary is located on the east coast of England and comprises extensive wetland and coastal habitats covering 37,630.24 ha. The inner estuary supports extensive areas of reedbed, with areas of saltmarsh, grazing marsh, sand dunes, marshy slacks and brackish pools. The estuary supports important numbers of waterbirds throughout the year.</p>                                                                                                                                                                                                                         | <p>I01 (H) Invasive non-native species</p> <p>M02 (H) changes in biotic conditions</p> <p>M01 (H) changes in abiotic conditions</p> <p>K01 (H) Abiotic (slow) natural processes</p> <p>G01 (H) outdoor sports and leisure activities, recreational activities</p> |

| Site | Qualifying Feature |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Conservation Objectives                                               | Site Description and Current Conditions | Key Issues and Threats |
|------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------|------------------------|
|      | Habitats           | Species                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                       |                                         |                        |
|      |                    | <p>goldeneye <i>Bucephala clangula</i>, sanderling <i>Calidris alba</i>, avocet <i>Recurvirostra avosetta</i><br/>           Bittern <i>Botaurus stellaris</i>, Hen harrier <i>Circus cyaneus</i>,<br/>           Golden plover <i>Pluvialis apricaria</i>,<br/>           Bar-tailed godwit <i>Limosa lapponica</i>,<br/>           Ruff <i>Philomachus pugnax</i>, Bittern <i>Botaurus stellaris</i>,<br/>           Marsh harrier <i>Circus aeruginosus</i>, Little tern <i>Sterna albifrons</i>,<br/>           common ringed plover <i>Charadrius hiaticula</i>,<br/>           Eurasian curlew <i>Numenius arquata</i>,<br/>           whimbrel <i>Numenius Phaeopus</i>,<br/>           greenshank <i>Tringa nebularia</i>, lapwing <i>Vanellus vanellus</i>.</p> <p>Qualifying species under article 4.2 (regular use by 1% or more of the biogeographical populations):</p> <p>Shelduck <i>Tadorna tadorna</i>, Knot <i>Calidris canutus</i>, Dunlin <i>Calidris alpina</i> (passage and wintering), Redshank <i>Tringa totanus</i>, Black-tailed godwit <i>Limosa limosa</i>, Eurasian oystercatcher <i>Haematopus ostralegus</i>, grey plover <i>Pluvialis squatarola</i></p> | <p>- The distribution of the qualifying features within the site.</p> |                                         |                        |

| Site                         | Qualifying Feature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Conservation Objectives | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Key Issues and Threats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                              | Habitats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Species                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Assemblage qualification under article 4.2 or use of over 20,000 waterbirds in any season.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Humber Estuary Ramsar</b> | <p>Criterion 1<br/>The site is a representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. It is a large macro-tidal coastal plain estuary with high suspended sediment loads, which feed a dynamic and rapidly changing system of accreting and eroding intertidal and subtidal mudflats, sandflats, saltmarsh and reedbeds. Examples of both strandline, foredune, mobile, semi-fixed dunes, fixed dunes and dune grassland occur on both banks of the estuary and along the coast. The estuary supports a full range of saline conditions from the open coast to the limit of saline intrusion on the tidal rivers of the Ouse and Trent. Wave exposed sandy shores are found in the outer/open coast areas of the estuary. These change to the more moderately exposed sandy shores and then to sheltered muddy shores within the main body of the estuary and up into</p> | <p>Criterion 3<br/>The Humber Estuary Ramsar site supports a breeding colony of grey seals <i>Halichoerus grypus</i> at Donna Nook. It is the second largest grey seal colony in England and the furthest south regular breeding site on the east coast. The dune slacks at Saltfleetby-Theddlethorpe on the southern extremity of the Ramsar site are the most north-easterly breeding site in Great Britain of the natterjack toad <i>Bufo calamita</i>.</p> <p>Criterion 5<br/>Assemblages of international importance – 153,934 waterfowl (non-breeding season)</p> <p>Criterion 6<br/>Species/populations occurring at levels of international importance<br/>Migratory:<br/>Eurasian golden plover <i>Pluvialis apricaria altifrons</i> 17,996 (2.2% population)</p> | N/A                     | <p>The Humber Estuary is the largest macro-tidal estuary on the British North Sea coast. It drains a catchment of some 24,240 square kilometres and is the site of the largest single input of freshwater from Britain into the North Sea. It has the second-highest tidal range in Britain (max 7.4 m) and approximately one-third of the estuary is exposed as mud or sand flats at low tide. The inner estuary supports extensive areas of reedbed with areas of mature and developing saltmarsh backed in places by limited areas of grazing marsh in the middle and outer estuary. On the north Lincolnshire coast the saltmarsh is backed by low sand dunes with marshy slacks and brackish pools. The Estuary regularly supports internationally important numbers of waterfowl in winter and nationally important breeding populations in summer.</p> | <p>Disturbance to vegetation through cutting/clearing – reedbeds cleared for angling</p> <p>Vegetation succession – reed bed loss to scrub encroachment</p> <p>Water diversion for irrigations/domestic/industrial use</p> <p>Overfishing – substantial lamprey by-catch in eel nets in River Ouse</p> <p>Pollution – domestic sewage</p> <p>Pollution – agricultural fertilisers</p> <p>Recreational/tourism disturbance (unspecified) – due to illegal access with motorised vehicles and craft</p> <p>Other factor – coastal squeeze causing loss of intertidal habitats and saltmarsh due to sea level rise and fixed defences.</p> |

| Site | Qualifying Feature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Conservation Objectives | Site Description and Current Conditions | Key Issues and Threats |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------|------------------------|
|      | Habitats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Species                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                                         |                        |
|      | <p>the tidal rivers. The lower saltmarsh of the Humber is dominated by common cordgrass <i>Spartina anglica</i> and annual glasswort <i>Salicornia</i> communities. Low to mid marsh communities are mostly represented by sea aster <i>Aster tripolium</i>, common saltmarsh grass <i>Puccinellia maritima</i> and sea purslane <i>Atriplex portulacoides</i> communities. The upper portion of the saltmarsh community is atypical, dominated by sea couch <i>Elytrigia atherica</i> (<i>Elymus pycnanthus</i>) saltmarsh community. In the upper reaches of the estuary, the tidal marsh community is dominated by the common reed <i>Phragmites australis</i> fen and sea club rush <i>Bolboschoenus maritimus</i> swamp with the couch grass <i>Elytrigia repens</i> (<i>Elymus repens</i>) saltmarsh community. Within the Humber Estuary Ramsar site there are good examples of four of the five physiographic types of saline lagoon.</p> | <p>Red knot <i>Calidris canutus islandica</i> 18,500 (4.1% population)<br/>Dunlin <i>Caldris alpina alpina</i> 20,269 (1.5% population)<br/>Black-tailed godwit <i>Limosa limosa islandica</i> 915 (2.6% population)<br/>Redshank <i>Tringa totanus brittanica</i> 7,462 (5.7% population)<br/><br/>Wintering:<br/>Common shelduck <i>Tadorna tadorna</i> 4,464 (1.5% population)<br/>Eurasian golden plover 30,709 (3.8% population)<br/>Red knot 28,165 (6.3% population)<br/>Dunlin 22,222 (1.7% population)<br/>Black-tailed godwit 1,113 (3.2% population)<br/>Bar-tailed godwit <i>Limosa lapponica lapponica</i> 2,752 (2.3% population)<br/>Redshank 4,632 (3.6% population)<br/><br/>Criterion 8<br/>The Humber Estuary acts as an important migration route for both river lamprey <i>Lampetra fluviatilis</i> and sea lamprey <i>Petromyzon marinus</i> between coastal</p> |                         |                                         |                        |



| Site                                 | Qualifying Feature                                                             |                                                                                                                                                                        | Conservation Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Key Issues and Threats                                                                                                                                                                                                                        |
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|                                      | Habitats                                                                       | Species                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                               |
|                                      |                                                                                | waters and their spawning areas.                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                               |
| <b>Skipwith Common SAC</b>           | Northern Atlantic wet heaths with <i>Erica tetralix</i><br>European dry heaths | N/A                                                                                                                                                                    | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining and restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of qualifying natural habitats</li> <li>- The structure and function (including typical species) of qualifying natural habitats, and</li> <li>- The supporting processes on which qualifying natural habitats rely</li> </ul>                                                                                                                 | <p>The wet heath at Skipwith Common is the most extensive of its type in the north of England. The <i>Erica tetralix</i> – <i>Sphagnum compactum</i> community is dominated by cross-leaved heath <i>Erica tetralix</i> and purple moor-grass <i>Molinia caerulea</i>. There is a small population of marsh gentian <i>Gentiana pneumonanthe</i>. The wet heath is part of transitions from open water, fen, reed and swamp to dry heaths and other habitats. The dry heath element is a representative of <i>Calluna vulgaris</i> – <i>Deschampsia flexuosa</i> heath dominated by heather <i>Calluna vulgaris</i>.</p>                                                                                                                                                                                                                                                                                                                                                             | <p>K02 (H) Biocenotic evolution, succession</p> <p>J02 (H) human induced changes in hydraulic conditions</p> <p>H04 (H) Air pollution, air-borne pollutants</p> <p>G01 (H) Outdoor sports and leisure activities, recreational activities</p> |
| <b>Thorne and Hatfield Moors SPA</b> | N/A                                                                            | <p>Qualifying species under Article 4.1 for regular use of at least 1% of the GB population:</p> <p>Nightjar <i>Caprimulgus europaeus</i> 66 breeding pairs (1.9%)</p> | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of the habitats and qualifying features</li> <li>- The structure and function of the habitats of the qualifying features</li> <li>- The supporting processes on which the habitats of the qualifying features rely</li> <li>- The population of each of the qualifying features, and</li> <li>- The distribution of the qualifying features within the site.</li> </ul> | <p>Thorne and Hatfield Moors SPA is an extensive lowland raised mire system adjacent to the Humber estuary on the north-east coast of England and is the largest remaining lowland peatland in England. Despite a long history of extensive peat extraction since the late nineteenth century, the site retains substantial areas of <i>Sphagnum</i> bog, which has been changed by succession to wet scrub woodland dominated by Birch <i>Betula</i> sp., sallows and Alder <i>Alnus glutinosa</i>. Where the peat surface has been removed, subsequent restoration of active bog has depended upon shallow flooding to allow <i>Sphagnum</i> and other bog plants to re-colonise. The mire communities are dominated by Hare's-tail <i>Eriophorum vaginatum</i> and Common Cottongrass <i>E. angustifolium</i>, Cross-leaved Heath <i>Erica tetralix</i>, Soft-rush <i>Juncus effusus</i> and <i>Sphagnum</i> mosses, and include a variety of scarcer bog plants such as Bog-</p> | <p>E06 (H) Other urbanization, industrial and similar activities</p> <p>G01 (H) Outdoor sports and leisure activities, recreational activities</p>                                                                                            |

| Site                   | Qualifying Feature                                         |         | Conservation Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Site Description and Current Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Key Issues and Threats                                                                                                                                                                                                                                            |
|------------------------|------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        | Habitats                                                   | Species |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                   |
|                        |                                                            |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>rosemary <i>Andromeda polifolia</i> and Cranberry <i>Vaccinium oxycoccos</i>. Drier heath is dominated by Heather <i>Calluna vulgaris</i>, Bracken <i>Pteridium aquilinum</i> and Purple Moor-grass <i>Molinia caerulea</i>. Birch <i>Betula</i> sp. scrub, some of it dense, occurs throughout both moors. The diverse mosaic of habitats contribute greatly to the ornithological interest, which comprises breeding species, notably Nightjar <i>Caprimulgus europaeus</i>, hen harrier <i>Circus cyaneus</i>, merlin <i>Falco columbarius</i> and short-eared owl <i>Asio flammeus</i>, and hobby <i>Falco subbuteo</i>. Also notable are breeding nightingales <i>Luscinia megarhynchos</i>.</p>                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                   |
| <b>Thorne Moor SAC</b> | Degraded raised bogs still capable of natural regeneration | N/A     | <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining and restoring:</p> <ul style="list-style-type: none"> <li>- The extent and distribution of qualifying natural habitats</li> <li>- The structure and function (including typical species) of qualifying natural habitats, and</li> <li>- The supporting processes on which qualifying natural habitats rely</li> </ul> | <p>Thorne Moor is England's largest area of raised bog, lying a few kilometres from the smaller Hatfield Moors, both within the former floodplain of the rivers feeding the Humber estuary (Humberhead Levels), and includes the sub-components Goole Moors and Crowle Moors. Although management has increased the proportion of active raised bog at Thorne Moors, the inclusion of Goole Moors, where peat-extraction has now ceased, means that the site is still predominantly degraded raised bog. The restored secondary surface is rich in species of bog-mosses <i>Sphagnum</i> spp., common and hare's-tail cotton grasses <i>Eriophorum angustifolium</i> and <i>E. vaginatum</i>, heather <i>Calluna vulgaris</i>, cross-leaved heath <i>Erica tetralix</i>, round-leaved sundew <i>Drosera rotundifolia</i>, cranberry <i>Vaccinium oxycoccos</i> and bog-rosemary <i>Andromeda polifolia</i>.</p> | <p>K02 (H) Biocenotic evolution, succession</p> <p>I01 (H) Invasive non-native species</p> <p>G05 (H) Other human intrusions and disturbances</p> <p>H04 (H) Air pollution, air-borne pollutants</p> <p>J02 (H) Human induced changes in hydraulic conditions</p> |

## 4 EFFECTS OF IMPACTS TO FUNCTIONALLY LINKED HABITAT

### 4.1 Introduction

- 4.1.1. Qualifying features originating from European sites may occupy functionally linked habitat within and adjacent to the Proposed Scheme. These may therefore be impacted as a result of visual, light, noise and vibration disturbance, habitat loss, habitat modification and habitat degradation.

### 4.2 Relevant European Sites

- 4.2.1. The qualifying features of the European sites identified in the screening assessment as sensitive to Proposed Scheme impacts within functionally linked habitat are described in Table 5-1 below.

Table 4-1 - Relevant European Sites and Disturbance Pathway

| European Site            | European Site Vulnerability / Impact Pathway Identified in HRA Screening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Lower Derwent Valley SAC | <p>Otters are a qualifying feature of the SAC.</p> <p>Otters originating from the SAC may utilise the habitats within and adjacent to the Proposed Scheme (both aquatic and associated riparian and bankside areas and terrestrial habitat providing connectivity to such features). Otters may therefore be indirectly impacted as a result of disturbance (light, noise, vibration and visual) where the Proposed Scheme is located in proximity (disturbance may be prevalent up to 30 m from a holt and up to 200 m from a natal den (Ref 17)). Otters utilising such habitats may also be impacted upon by habitat loss and/or habitat modification. However, this is only potentially likely to materialise within riparian/bankside or terrestrial areas, as the Proposed Scheme is expected to employ trenchless techniques to cross all waterbodies and current survey data excludes the presence of potential holts within the ditch network crossed by the Proposed Scheme and within approximately 100 m from it). Pollution arising from the construction of the Proposed Scheme, and drainage from the operation of the Proposed Scheme, may also result in habitat degradation and impact upon the availability of otter food sources.</p> <p>It was determined through HRA screening that LSE may arise at functionally linked habitat as a result of:</p> <ul style="list-style-type: none"> <li>• habitat loss or degradation in or near water bodies;</li> <li>• holts and resting places being disturbed;</li> <li>• light, noise, vibration, visual disturbance to resting and feeding places; and</li> </ul> <p>changes to water quality which could also affect food sources (Natural England, 2014; Ref 18).</p> |



| European Site                  | European Site Vulnerability / Impact Pathway Identified in HRA Screening                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| River Derwent SAC              | <p>Otters are a qualifying feature of the SAC. It was determined through HRA screening that LSE may arise (as described above for the Derwent Valley SAC).</p> <p>Sea lamprey, river lamprey and bullhead fish are qualifying features of the SAC and are sensitive to water quality changes and may also be impacted by disturbance (in particular noise and vibration during spawning).</p> <p>It was determined through screening that (due to their migratory nature) sea and river lamprey may use the River Ouse (c. 85 m to the closest area of construction) and potentially may also be present within connecting watercourses and ditches in closer proximity to the Proposed Scheme footprint.</p> <p>These species may therefore be significantly impacted by changes to water quality / flow potentially arising from the construction and operation of the Proposed Scheme.</p> <p>As a result of the expected use of trenchless techniques across all waterbodies and the c. 85 m distance from the closest area of construction to the River Ouse, it was not considered likely that there would be any impact as a result of disturbance to fish. Even in the event that trenchless techniques are not used for installation of the Gas Pipeline, the distance from the River Ouse means that noise and vibration impacts on the watercourse would be negligible. Furthermore, spawning (the life stage most sensitive to disturbance) in proximity to the Proposed Scheme is unlikely due to the lack of suitable habitat and saline influences of the River Ouse in the area<sup>1</sup>.</p> <p>LSE were considered unlikely for bullhead, as this species inhabits freshwater habitats and therefore is unlikely to be found in the zone of influence (for water quality or disturbance impacts) of the Proposed Scheme.</p> |
| Humber Estuary SAC/Ramsar Site | <p>Sea Lamprey and River Lamprey are qualifying features of the SAC and Ramsar site. It was determined through HRA screening that LSE may arise (as described above for the River Derwent SAC).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

<sup>1</sup> The EA identify saline intrusion as a potential water quality issue for groundwater at the Site (paragraph 12.5.15 of the Water Resources, Quality and Hydrology Chapter). Tidal influences also raise the level of the River Ouse by approximately 4.2 m (paragraph 12.5.12 of the Water Resources, Quality and Hydrology Chapter), further confirming tidal influences in the stretch of the Ouse adjacent to and downstream of the Site.

## 4.3 Information to inform appropriate assessment

### Current Baseline – Annex II species (Otter)

- 4.3.1. Otters are listed as an interest feature of both the River Derwent SAC and Lower Derwent Valley SAC. Within the Lower Derwent Valley SAC, otters utilise the systems of dykes and ditches linking the Ings (areas of wetland) to the River Derwent. These, combined with the abundance of flood plain habitat which include wet woodland, fen, wet grassland, and ponds, provide excellent supporting habitat for the otters. There are many suitable undisturbed areas for shelter and holts and a good fish population available in the River Derwent and its tributaries provide a food source (Natural England, 2016; Ref 18).
- 4.3.2. The River Derwent SAC is located > 600 m from the closest point of the Proposed Scheme and the Lower Derwent Valley is located > 4,500 m distant; however, due to habitat connectivity, it is considered likely that otters originating from the SAC will utilise suitable habitats within and adjacent to the Proposed Scheme site.
- 4.3.3. Surveys undertaken to inform the Proposed Scheme's Environmental Impact Assessment<sup>2</sup> identified that within the Site Boundary and surrounding 250 m area, the River Ouse and numerous small ditches and watercourses and riparian areas provided suitable commuting, foraging and lying up /resting habitat for otter. No confirmed lying up / resting sites were identified within the boundary of the Proposed Scheme or within 50 m of it during the surveys.
- 4.3.4. Figure 9.5 of the ES Biodiversity Chapter provides a summary of the results of the otter surveys. It is considered likely that this species is at least intermittently present within and in proximity to the Proposed Scheme, associated with the River Ouse and connecting watercourses and ditches.
- 4.3.5. As a result of existing levels of disturbance, in accordance with current understanding (Natural England 2007; Ref 20), it is considered very unlikely that any maternal holt sites (i.e. holts used by female otters to bring up their young) are present within 250 m of the Power Station Site. It is, however, possible (although still relatively unlikely due to the presence of the recreational Trans Pennine Trail along the northern bank of the Ouse) that a maternal holt could be present along the River Ouse within 250 m of the Pipeline Area.
- 4.3.6. On the basis that these habitats within the Site Boundary and surrounding area may provide a role in maintaining or restoring the SAC's otter and fish populations at a favourable conservation status, they are considered to potentially comprise functionally linked habitat.

### Current Baseline – Annex II Species (Fish)

- 4.3.7. The sea lamprey and river lamprey are listed as qualifying features of the River Derwent SAC and Humber Estuary SAC. In addition, bullhead is listed as a qualifying feature of the River Derwent SAC.
- 4.3.8. The sea lamprey occurs in estuaries and easily accessible rivers, and is an anadromous species (i.e. spawning in freshwater but completing its life cycle in the sea). Like the other

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<sup>2</sup> Refer to EIA Chapter 9, Biodiversity.

species of lamprey, sea lampreys need clean gravel for spawning, and marginal silt or sand for the burrowing juvenile ammocoetes. Sea lampreys have a preference for warm waters in which to spawn. Features such as weirs and dams, as well as polluted sections of river, may impede migration to spawning grounds. In comparison to the river lamprey, sea lampreys seem to be relatively poor at ascending obstacles to migration, and are frequently restricted to the lower reaches of rivers. The river lamprey is also found in coastal waters, estuaries and accessible rivers. The species is normally anadromous (i.e. spawning in freshwater but completing part of its life cycle in the sea), and pollution or artificial obstacles such as weirs or dams impede migration (JNCC undated; Ref 21).

- 4.3.9. The bullhead is a small bottom-living fish that inhabits a variety of rivers, streams and stony lakes. It appears to favour fast-flowing, clear shallow water with a hard substrate (gravel/cobble/pebble) and is frequently found in the headwaters of upland streams. However, it also occurs in lowland situations on softer substrates so long as the water is well-oxygenated and there is sufficient cover. It is not found in badly polluted rivers or saltwater (JNCC undated; Ref 22).
- 4.3.10. It is considered likely that river and sea lamprey are at least intermittently present within the River Ouse and/or connecting watercourses and ditches (although spawning is not considered likely on the basis of current survey information and likely saline habitat conditions). It is unlikely that any of the SAC species regularly utilise the minor watercourses and ditches crossed by the Proposed Scheme (the Pipeline Area), due to the low water volume and small sizes of these watercourses.

#### Potential Effects on Integrity due to Changes to Baseline resulting from the Proposed Scheme

- 4.3.11. As a result of the minimum 600 m distance between the Proposed Scheme and the closest of the three SACs, there will be no direct impacts on the Annex II species otters or qualifying fish located within the River Derwent SAC, Lower Derwent Valley SAC or Humber Estuary SAC.
- 4.3.12. In addition, on the basis of current survey information, there will be no direct impacts on potential otter holts or potential fish spawning habitat located within the Site Boundary due to the lack of positive survey results relating to potential otter resting sites and fish spawning habitat.
- 4.3.13. However, during construction and operation there is potential for indirect impacts to otters, sea lamprey and river lamprey occupying functionally-linked habitat located adjacent to the Proposed Scheme as a result of pollution to watercourses. In addition, there is potential for disturbance impacts to otters as a result of light, visual, noise and vibration disturbance.
- 4.3.14. During construction, there is also risk of mortality to otters moving through terrestrial habitat through collision with moving construction vehicles or interaction with construction materials and compounds and excavations.
- 4.3.15. Such impacts may result in the killing or injury of otters, the reduction and degradation of available otter and fish habitat and food sources and/or displacement of otters from areas used for commuting, foraging, resting and breeding. This may impact upon the FCS of otters, sea lamprey and river lamprey and ultimately compromise the ability to achieve the

conservation objectives underpinning the integrity of the River Derwent SAC, Derwent Valley SAC and Humber Estuary SAC.

#### Avoidance and Mitigation Measures

4.3.16. Measures will be implemented through the Landscape and Biodiversity Strategy (to be prepared substantially in accordance with the Outline Landscaping and Biodiversity Strategy (Examination Library Reference APP-135) and approved and implemented as required by a requirement to Schedule 2 of the draft DCO (Examination Library Reference APP-020)) to avoid/minimise the above described impacts:

- Pre-construction surveys to reconfirm the status of otter habitat usage of the Site and surrounding watercourses up to 250 m from the Proposed Scheme.
- Avoidance of any obstructions to established otter paths and access to open water.
- Avoidance of work in the vicinity of otter habitat during the hours of darkness and within the period two hours after sunrise and two hours before sunset March to October (inclusive) and due to the more limited daylight between one hour after sunrise and one hour before sunset November to February (inclusive).
- The marking of, and adherence to, 30 m exclusion zones around any holts and shelters identified as a result of updated survey prior to site clearance and construction activities occurring. If otters are known or suspected to be breeding, the exclusion zone could be extended to at least a 200 m radius. However, it could be reduced to 100 m depending on the nature of the works, topography and natural screening. This will require judgement from an experienced ecologist.
- If breeding was confirmed and exclusion zones of the size set out above were not possible, works would be undertaken in accordance with a European Protected Species (EPS) Mitigation licence to derogate the legislation protecting otter (except during periods of active breeding). As part of the licence, appropriate compensation would be provided to ensure that alternative habitat is provided in advance of the impact occurring. This would ensure no net loss in available habitat that may be considered to provide functional linkage for the SAC.
- As a minimum, light spill will be minimised and dark corridors will be maintained to ensure that otters can continue to commute and forage without undue disturbance during construction. In addition, defined site compounds and access roads with slow speed limits, will limit the risk of otter collisions during construction.
- Screening with fencing or planting of thicket-type vegetation to reduce noise and visual disturbance to otter commuting routes during operation, as per the outline Landscape and Biodiversity Strategy;
- The use of trenchless techniques where practicable when cutting through watercourses for the Pipeline Area. Update surveys will be completed prior to any open-cut techniques being employed. These surveys will determine the need for further mitigation to be implemented for otters (see paragraph 5.3.20 of this report).
- The capping of any exposed pipe systems when contractors are off site, and providing exit ramps from any exposed trenches or holes (to prevent otters entering and becoming trapped);
- Screening with fencing or planting of thicket-type vegetation to reduce noise, lighting and visual disturbance to otter commuting routes;
- Existing drainage measures during operation have been proposed in ES Chapter 12 as appropriate for the Power Station Site. The Above Ground Installation area and associated access road will be routed through an appropriate oil separator prior to

discharge. Such measures have been assessed as appropriate to negate potential drainage-related water quality impacts (ES Chapter 12, Sections 12.6.51 – 12.6.53).

- The use of construction best practice measures to avoid pollution including pollution prevention guidance (DEFRA 2016; Ref 23,) would be followed to prevent pollution of water courses by silt or chemicals.

- 4.3.17. The Construction Environmental Management Plan (CEMP) (to be prepared substantially in accordance with the Outline CEMP (Examination Library Reference APP-133), and which will be approved and implemented as required by a requirement in Schedule 2 to the draft DCO (Examination Library Reference APP-020)) will identify the construction site management which will be implemented to avoid/minimise generation of excessive litter, dust noise and vibration, pollution control and avoidance of hydrological impacts.
- 4.3.18. The CEMP will also provide detailed method statements as necessary to ensure the protection of otters and fish detailed above. Monitoring and management of the ecologically-related CEMP measures to ensure efficacy will be undertaken by an experienced Environmental Manager and Ecological Clerk of Works (ECoW).
- 4.3.19. The CEMP will identify measures that will be implemented to avoid/minimise the potential for pollution, for example, fuel and chemical spills and spill kits will be ready to hand in the unlikely event of a fluid spill. There will be no storage of potentially contaminating materials in areas of ecological / hydrological sensitivity. A Pollution Incident Response Plan will be included as part of the CEMP to ensure that impacts from any potential accidental spills can be reduced to a minimum.
- 4.3.20. Updated pre-construction and during-construction survey information will inform the need to provide compensation for the destruction of any newly created resting sites within the Proposed Scheme footprint. The destruction of an otter resting site would need to be undertaken under an EPS mitigation licence and likely require the construction of an artificial holt. Such measures would ensure no net loss in available habitat that may be considered to provide functional linkage for the SAC.

#### Efficacy of Mitigation Measures and Residual Effects

- 4.3.21. The above described mitigation-measures are appropriate, proven avoidance and mitigation measures and no residual, significant effects are envisaged. There may be some minor residual effects on otters' use of habitats within and adjacent to the Proposed Scheme during construction and decommissioning within the Pipeline Area, with reduced use of the minor watercourses / ditches across this location. Given the condition of these watercourses and their lack of connection to major waterbodies other than The Ouse, no perceptible effects on otters are expected to arise. During the operational phase residual effects are expected to be neutral.

#### Effects in Combination with Other Plans and Projects

- 4.3.22. As a result of a negative assessment, it is not considered that the Proposed Scheme will act in-combination with those development proposals listed in Table 3.1 above.

#### Conclusion

- 4.3.23. In the context of the known qualifying features vulnerabilities and autecology, it is possible to conclude that there will be no adverse effects on the integrity of the Humber Estuary SAC,

the River Derwent SAC and the Lower Derwent Valley SAC as a result of impacts upon functionally-linked habitat



## 5 EFFECTS OF CHANGES TO AIR QUALITY

### 5.1 Introduction

- 5.1.1. The numerical threshold for discounting the potentially harmful effects of atmospheric nitrogen ('Critical Loads' and 'Critical Levels') have already been exceeded for many European sites in the UK, particularly in terms of critical loads for nitrogen deposition. This is reflected for the European Sites within 15km of the Proposed Scheme, which all experience baseline nitrogen deposition rates that are within or exceed the site-specific critical load range. Potential outcomes of exceedance include changes in species composition, especially in typically nutrient-poor ecosystems with a shift towards species associated with higher nitrogen availability and a reduction in species richness.

### 5.2 Relevant European Sites

- 5.2.1. The European sites identified in the screening assessment as sensitive to air quality impacts and the potential impact pathways resulting from the Proposed Scheme are provided in Table 6.1 below. Critical levels for NO<sub>x</sub> and NH<sub>3</sub> are presented as concentrations of the pollutant per cubic metre of air. For NO<sub>x</sub>, the critical levels are independent of the habitat type at 30 µg/m<sup>3</sup>; for NH<sub>3</sub>, the critical level is 3µg/m<sup>3</sup> for higher plants, but this decreases to 1µg/m<sup>3</sup> if lower plants (such as bryophytes) are present as a critical part of the ecosystem. Critical levels are set at the concentrations above which significant effects on habitats and associated plant species may occur, according to present knowledge.
- 5.2.2. Critical loads for nitrogen deposition are presented as the deposition rates in kilogrammes of nitrogen per hectare per year. Critical loads are assigned to habitat classes of the European Nature Information System (EUNIS) to enable consistency of habitat terminology and understanding across Europe. They are given as ranges (e.g. 10-20 kgN/ha/yr) which reflect variations in ecosystem response and soil types across Europe. In the assessment, a conservative approach is adopted and impacts are compared to the lower limit of the specified range, unless site-specific assessment determines a different critical load is appropriate.
- 5.2.3. Acidification critical loads are specified through the definition of a critical load function (CLF) which identifies the combinations of sulphur and nitrogen deposition that will not cause harmful effects. These are also presented in kilogrammes per hectare per year, but it is the combination of the sulphur and nitrogen deposition rates which determine whether the critical load for acidification has been exceeded. This is explained in further detail in paragraphs 6.3.30 – 6.3.32 of the ES Air Quality chapter.
- 5.2.4. Diagram 6-1, below, shows how the CLF for acidification is applied.

Diagram 6-1 - Information provided in the ES

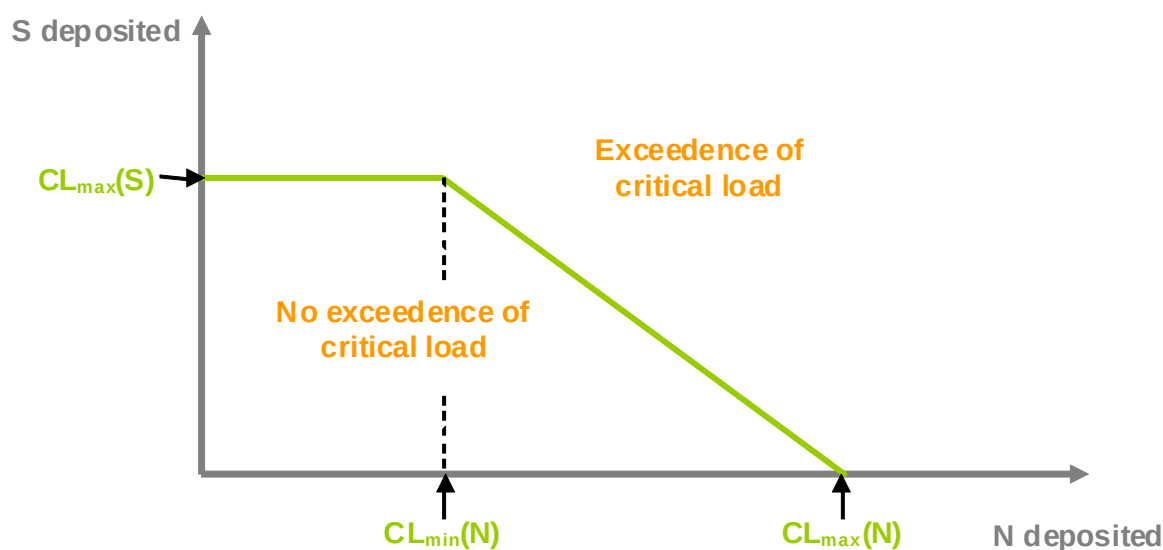


Table 5-1 - Relevant European Sites and Impact Pathways

| European Site                       | European Site Vulnerability / Impact Pathway                                                                                                                                                                                                                                                                                                                                                                                                                                             | Baseline Air Quality Conditions**                                                                                                                                                                                                     | Site-specific Critical Loads and Levels*                                                                                |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| River Derwent SAC                   | LSE could not be discounted in the screening assessment as a result of the Proposed Scheme's air emissions during operation. Sections of the SAC are located within 15 km of the Proposed Scheme, and may experience increased air quality emissions as a result of the Proposed Scheme. The SAC is not currently identified as vulnerable to nitrogen deposition in the SIP (Natural England, 2014b; Ref 24) and there is no relevant critical load provided for this riverine habitat. | $NO_x = 13.1 - 16.3$ ( $\mu g/m^3$ )<br>$NH_3$ ( $\mu g/m^3$ ) = 2.23 – 2.76<br>Nitrogen deposition ( $kgN/ha/yr$ = 14.7 – 19.18)<br>Acid deposition (N $Keq/ha/yr$ ) = 1.05 – 1.37<br>Acid deposition (S $Keq/ha/yr$ ) = 0.25 – 0.29 | $NO_x = 30 \mu g/m^3$<br>$NH_3 = 3 \mu g/m^3$<br>Nitrogen deposition = none assigned<br>Acid deposition = none assigned |
| Lower Derwent Valley SAC            | LSE could not be discounted in the screening assessment as a result of the Proposed Scheme's air emissions during operation. Sections of the SAC/SPA are located within 15 km of the Proposed Scheme, and may                                                                                                                                                                                                                                                                            | $NO_x$ ( $\mu g/m^3$ ) = 13.1 – 15.3<br>$NH_3$ ( $\mu g/m^3$ ) = 2.42 – 2.81<br>Nitrogen deposition                                                                                                                                   | $NO_x = 30 \mu g/m^3$<br>$NH_3 = NH_3 = 3 \mu g/m^3$<br>Nitrogen deposition = 20 (min) 30 (max)                         |
| Lower Derwent Valley SPA and Ramsar |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                       |                                                                                                                         |



| European Site                                       | European Site Vulnerability / Impact Pathway                                                                                                                                                                                                                                                                                                                                                                                                                                          | Baseline Air Quality Conditions**                                                                                                                                                                                                           | Site-specific Critical Loads and Levels*                                                                                                                                             |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                     | experience increased air quality emissions as a result of the Proposed Scheme. The SAC/SPA is identified as vulnerable to nitrogen deposition in the SIP (Natural England, 2014c; Ref 25) and is currently in exceedance of the site-relevant critical load.                                                                                                                                                                                                                          | (kgN/ha/yr = 17.9 – 21.0)<br>Acid deposition (N Keq/ha/yr) = 1.37 – 1.50<br>Acid deposition (S Keq/ha/yr) = 0.28 – 0.30                                                                                                                     | Acid deposition = 0.856 (CLminN); 4.856 (CLmaxN); and 4.0 (CLmaxS)                                                                                                                   |
| Skipwith Common SAC                                 | LSE could not be discounted in the screening assessment as a result of the Proposed Scheme's air emissions during operation. Sections of the SAC are located within 15 km of the Proposed Scheme, and may experience increased air quality emissions as a result of the Proposed Scheme. The SAC is identified as vulnerable to nitrogen deposition in the SIP (Natural England 2014d; Ref 26) and is currently in exceedance of the site-relevant critical load.                     | NOx (µg/m <sup>3</sup> ) = 13.8 – 14.8<br>NH <sub>3</sub> (µg/m <sup>3</sup> ) = 2.34 – 2.42<br>Nitrogen deposition (kgN/ha/yr) = 19.2<br>Acid deposition (N Keq/ha/yr) = 1.37<br>Acid deposition (S Keq/ha/yr) = 0.28 – 0.29               | NOx = 30µg/m <sup>3</sup><br>NH <sub>3</sub> = 1µg/m <sup>3</sup><br>Nitrogen deposition = 10 (min) 10 (max)<br>Acid deposition = 0.642 (CLminN); 1.524 (CLmaxN); and 0.810 (CLmaxS) |
| Humber Estuary SAC<br>Humber Estuary SPA and Ramsar | LSE could not be discounted in the screening assessment as a result of the Proposed Scheme's air emissions during operation. Sections of the SAC/SPA/Ramsar site are located within 15 km of the Proposed Scheme, and may experience increased air quality emissions as a result of the Proposed Scheme. The SAC/SPA is identified as vulnerable to nitrogen deposition in the SIP (Natural England 2014f; Ref 28) and is currently in exceedance of the site-relevant critical load. | NOx (µg/m <sup>3</sup> ) = 15.0 – 23.2<br>NH <sub>3</sub> (µg/m <sup>3</sup> ) = 2.09 – 2.92<br>Nitrogen deposition (kgN/ha/yr) = 17.9 – 20.7<br>Acid deposition (N Keq/ha/yr) = 1.27 – 1.48<br>Acid deposition (S Keq/ha/yr) = 0.28 – 0.29 | NOx = 30µg/m <sup>3</sup><br>NH <sub>3</sub> = 3µg/m <sup>3</sup><br>Nitrogen deposition = 20 - 30<br>Acid deposition = not sensitive                                                |

| European Site                | European Site Vulnerability / Impact Pathway                                                                                                                                                                                                                                                                                                                                                                                                                               | Baseline Air Quality Conditions**                                                                                                                                                                 | Site-specific Critical Loads and Levels*                                                                                                     |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Thorne Moor SAC              | LSE could not be discounted in the screening assessment as a result of the Proposed Scheme's air emissions during operation. Sections of the SAC/SPA are located within 15 km of the Proposed Scheme, and may experience increased air quality emissions as a result of the Proposed Scheme. The SAC/SPA is identified as vulnerable to nitrogen deposition in the SIP (Natural England, 2014e; Ref 27) and is currently in exceedance of the site-relevant critical load. | NO <sub>x</sub> (µg/m <sup>3</sup> ) = 15.1 – 18.6                                                                                                                                                | NO <sub>x</sub> = 30µg/m <sup>3</sup>                                                                                                        |
| Thorne and Hatfield Moor SPA |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NH <sub>3</sub> (µg/m <sup>3</sup> ) = 1.43 – 2.39<br>Nitrogen deposition (kgN/ha/yr) = 14.7 – 18.9<br>Acid deposition (N Keq/ha/yr) = 1.05 – 1.35<br>Acid deposition (S Keq/ha/yr) = 0.25 – 0.26 | NH <sub>3</sub> = 1µg/m <sup>3</sup><br>Nitrogen deposition = 5 - 10<br>Acid deposition = 0.321 (CLminN); 0.462 (CLmaxN); and 0.141 (CLmaxS) |

\* As taken from Tables 6-8 and 6-9 in the ES Air Quality chapter. In most instances, the air quality assessment has used the critical load or level with the lowest (i.e. most stringent) value, in line with the precautionary principle. Less stringent critical loads or levels have only been used where evidence suggests this is appropriate – for example where citation information reports that the most sensitive feature only occurs in parts of the European Site in excess of 15km from the Proposed Scheme.

\*\* As taken from Table 6-12 in the ES Air Quality Chapter.

### 5.3 Information to Inform Appropriate Assessment

- 5.3.1. Table 6-1 and the accompanying text above and Chapter 6 of the ES, Air Quality describe the current baseline for the European sites assessed in this report for air quality impacts.

#### Potential Effects of Changes to Baseline Resulting from the Construction and Operation of the Proposed Scheme

- 5.3.2. A qualitative assessment of construction dust during the construction of the Proposed Scheme was undertaken as part of the air quality assessment, reported in the ES Chapter 6 (Air Quality). This was informed by a specific Construction Dust Assessment, which forms Appendix 6.2 of the ES Air Quality chapter. The assessment concluded that there were no European Sites sufficiently close to the Proposed Scheme, that they could experience significant construction dust impacts. As such, construction phase dust impacts would not lead to any LSE or adverse effects on the integrity of any European Site.
- 5.3.3. A quantitative assessment of emissions of NO<sub>x</sub>, NO<sub>2</sub>, ammonia (NH<sub>3</sub>), CO, SO<sub>2</sub>, PM<sub>10</sub> and HCl from the operation of the Power Station Site was also undertaken to inform the Proposed Scheme's ES (Chapter 6 (Air Quality)). The assessment considered both OCGT and CCGT

operation of the proposed Gas Generating Stations. Furthermore, with CCGT operation, operation without and with the use of exhaust gas treatment to reduce NO<sub>x</sub> emissions (Selective Catalytic Reduction, SCR) was modelled.

- 5.3.4. It should be noted that under those scenarios where SCR is not used, no NH<sub>3</sub> would be emitted by the Proposed Scheme during operation.
- 5.3.5. To ensure a realistic worst-case scenario, the generating units were assumed to run at full load continuously. Combined cycle is the more likely operating scenario and the results presented in the ES Air Quality chapter for operation without exhaust gas treatment assume operation at all times in this mode. This is the worst-case scenario for emissions-related impacts on designated sites without exhaust gas treatment. For operation with exhaust gas treatment, to meet the ammonia emissions budget cap (of 120 tonnes NH<sub>3</sub> per year), the plant is assumed to operate in open cycle for 1,500 hours and the remainder in combined cycle. This is the worst-case scenario for emissions-related impacts on designated sites with exhaust gas treatment. The atmospheric emissions from the operation of the Proposed Scheme were quantified by obtaining information from relevant plant suppliers.

The air quality modelling methodology and the results for each of the different modelled scenarios are presented in Sections 6.3 and 6.5 of the ES Air Quality chapter respectively. Tables 6-18 to 6-23 of the ES Air Quality chapter set out the realistic worst case impacts from the Proposed Scheme alone on designated sites, including European Sites. Tables 6-24 to 6-28 of the ES set out the realistic worst case cumulative air quality impacts of the Proposed Scheme, which has been used to inform the assessment of in-combination air quality effects on European Sites. The findings of the air quality modelling for each scenario are presented and referred to in the following sections of this report, where appropriate.

- 5.3.6. The ES Air Quality chapter includes a quantitative assessment of potential cumulative effects from emissions of NO<sub>x</sub> and ammonia from the Eggborough Power Station and Thorpe Marsh Power Station. These developments were included in the quantitative air quality modelling as it was concluded that Eggborough and Thorpe Marsh Power Stations were the only processes with significant potential for in-combination air quality impacts with the Proposed Scheme on ecological receptors from those detailed in Table 3.1. In Addition to those short-listed developments within 15 km, due to their scale and nature, Knottingley Power Project and Ferrybridge D CCGT (located beyond 15 km from the Proposed Scheme but located within 15 km of European Sites located within 15 km of the Proposed Scheme) have been considered qualitatively within the air quality assessment.
- 5.3.7. For the purpose of this HRA, the realistic worst-case outcomes from the air quality assessment are presented only (rather than detailed analysis of all potential scenarios) and these have been taken forward for the conclusions made with regard to adverse effects below. It follows that where it can be concluded that there would be no adverse effect for the worst-case scenario assessed, any scenario generating reduced levels of emissions, would also not lead to adverse effects. Full analysis of each scenario is presented in the ES Chapter 6 (Air Quality), Section 6.5.
- 5.3.8. The results of the air quality modelling for European Sites are presented in Tables 6-2 to 6-11, below.

Table 5-2 - Maximum Operational Impact at Ecological Receptors – Annual Mean NH<sub>3</sub>

| Receptor                                                                                | Critical Level | Back-ground (µg/m <sup>3</sup> ) | PC (µg/m <sup>3</sup> ) | PC as % of Obj. | PEC (µg/m <sup>3</sup> ) | PEC as % of Obj. |
|-----------------------------------------------------------------------------------------|----------------|----------------------------------|-------------------------|-----------------|--------------------------|------------------|
| Scenario A1 – Combined cycle operation with low NOx emissions (50mg/m <sup>3</sup> )    |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                       | 3              | 2.76                             | 0.00                    | 0.0%            | 2.76                     | 92%              |
| Lower Derwent SAC/SPA/Ramsar site                                                       | 3              | 2.81                             | 0.00                    | 0.0%            | 2.81                     | 94%              |
| Thorne Moor SAC & Thorne and Hatfield Moor SPA                                          | 1              | 2.39                             | 0.00                    | 0.0%            | 2.39                     | 239%             |
| Skipwith Common SAC                                                                     | 1              | 2.42                             | 0.00                    | 0.0%            | 2.42                     | 242%             |
| Humber Est. SAC/SPA/Ramsar site                                                         | 3              | 2.92                             | 0.00                    | 0.0%            | 2.92                     | 97%              |
| Scenario B – Combined cycle operation with SCR (NOx emissions at 30mg/Nm <sup>3</sup> ) |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                       | 3              | 2.76                             | 0.03                    | 1.1%            | 2.79                     | 93%              |
| Lower Derwent SAC/SPA/Ramsar site                                                       | 3              | 2.81                             | 0.02                    | 0.6%            | 2.83                     | 94%              |
| Thorne Moor SAC & Thorne and Hatfield Moor SPA                                          | 1              | 2.39                             | 0.00                    | 0.5%            | 2.39                     | 239%             |
| Skipwith Common SAC                                                                     | 1              | 2.42                             | 0.00                    | 0.4%            | 2.42                     | 242%             |
| Humber Est. SAC/SPA/Ramsar site                                                         | 3              | 2.92                             | 0.01                    | 0.3%            | 2.93                     | 98%              |

Table 5-3 - Maximum Operational Impact at Ecological Receptors – Annual Mean NO<sub>x</sub>

| Receptor                                                                                            | Critical Level | Back-ground (µg/m <sup>3</sup> ) | PC (µg/m <sup>3</sup> ) | PC as % of Obj. | PEC (µg/m <sup>3</sup> ) | PEC as % of Obj. |
|-----------------------------------------------------------------------------------------------------|----------------|----------------------------------|-------------------------|-----------------|--------------------------|------------------|
| Scenario A1 – Combined cycle operation with low NO <sub>x</sub> emissions (50mg/m <sup>3</sup> )    |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 30             | 16.26                            | 2.15                    | 7.18%           | 18.41                    | 61%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 30             | 15.32                            | 1.25                    | 4.15%           | 16.57                    | 55%              |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                                   | 30             | 18.56                            | 0.32                    | 1.06%           | 18.88                    | 63%              |
| Skipwith Common SAC                                                                                 | 30             | 14.75                            | 0.30                    | 1.00%           | 15.05                    | 50%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 30             | 23.19                            | 0.54                    | 1.81%           | 23.73                    | 79%              |
| Scenario B – Combined cycle operation with SCR (NO <sub>x</sub> emissions at 30mg/Nm <sup>3</sup> ) |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 30             | 16.26                            | 1.11                    | 3.7%            | 17.37                    | 58%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 30             | 15.32                            | 0.65                    | 2.2%            | 15.97                    | 53%              |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                                   | 30             | 18.56                            | 0.17                    | 0.6%            | 18.73                    | 62%              |
| Skipwith Common SAC                                                                                 | 30             | 14.75                            | 0.16                    | 0.5%            | 14.91                    | 50%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 30             | 23.19                            | 0.28                    | 0.9%            | 23.47                    | 78%              |

Table 5-4 - Maximum Operational Impact at Ecological Receptors – Daily Mean NO<sub>x</sub>

| Receptor                                                                                            | Critical Level | Back-ground (µg/m <sup>3</sup> ) | PC (µg/m <sup>3</sup> ) | PC as % of Obj. | PEC (µg/m <sup>3</sup> ) | PEC as % of Obj. |
|-----------------------------------------------------------------------------------------------------|----------------|----------------------------------|-------------------------|-----------------|--------------------------|------------------|
| Scenario A1 – Combined cycle operation with low NO <sub>x</sub> emissions (50mg/m <sup>3</sup> )    |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 75             | 32.52                            | 36.8                    | 49.1%           | 69.3                     | 92%              |
| Lower Derwent SAC                                                                                   | 75             | 30.64                            | 16.7                    | 22.2%           | 47.3                     | 63%              |
| Thorne Moor SAC & Thorne and Hatfield Moors SPA                                                     | 75             | 37.12                            | 8.0                     | 10.7%           | 45.1                     | 60%              |
| Skipwith Common SAC                                                                                 | 75             | 29.5                             | 6.9                     | 9.2%            | 36.4                     | 48%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 75             | 46.38                            | 9.1                     | 12.2%           | 55.5                     | 74%              |
| Scenario B – Combined cycle operation with SCR (NO <sub>x</sub> emissions at 30mg/Nm <sup>3</sup> ) |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 75             | 32.5                             | 22.4                    | 29.9%           | 54.9                     | 73%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 75             | 30.6                             | 12.6                    | 16.8%           | 43.3                     | 58%              |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                                   | 75             | 37.1                             | 5.7                     | 7.6%            | 42.8                     | 57%              |
| Skipwith Common SAC                                                                                 | 75             | 29.5                             | 4.8                     | 6.4%            | 34.3                     | 46%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 75             | 46.4                             | 6.3                     | 8.4%            | 52.7                     | 70%              |

Table 5-5 - Maximum Operational Impact at Ecological Receptors – Nitrogen Deposition

| Receptor                                                                                | Critical Load        | Back-ground (kgN/ha/yr) | PC (kgN/ha/yr) | PC as % of CL | PEC (kgN/ha/yr) | PEC as % of CL |
|-----------------------------------------------------------------------------------------|----------------------|-------------------------|----------------|---------------|-----------------|----------------|
| Scenario A1 – Combined cycle operation with low NOx emissions (50mg/m <sup>3</sup> )    |                      |                         |                |               |                 |                |
| River Derwent SAC                                                                       | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                                       | 20                   | 21.0                    | 0.12           | 0.6%          | 21.1            | 106%           |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                       | 5                    | 19.2                    | 0.03           | 0.6%          | 19.2            | 384%           |
| Skipwith Common SAC                                                                     | 10                   | 19.2                    | 0.03           | 0.3%          | 19.2            | 192%           |
| Humber Est. SAC/SPA/Ramsar site                                                         | 20                   | 20.7                    | 0.05           | 0.3%          | 20.8            | 104%           |
| Scenario B – Combined cycle operation with SCR (NOx emissions at 30mg/Nm <sup>3</sup> ) |                      |                         |                |               |                 |                |
| River Derwent SAC                                                                       | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC                                                                       | 20                   | 21.0                    | 0.16           | 0.8%          | 21.2            | 106%           |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                       | 5                    | 19.2                    | 0.04           | 0.8%          | 19.2            | 384%           |
| Skipwith Common SAC                                                                     | 10                   | 19.2                    | 0.04           | 0.4%          | 19.2            | 192%           |
| Humber Est. SAC/SPA/Ramsar site                                                         | 20                   | 20.7                    | 0.07           | 0.3%          | 20.8            | 104%           |

Table 5-6 - Maximum Operational Impact at Ecological Receptors – Acid Deposition

| Receptor                                                                   | Critical Load        | Back-ground (kgN/ha/yr) | PC (kgN/ha/yr) | PC as % of CL | PEC (kgN/ha/yr) | PEC as % of CL |
|----------------------------------------------------------------------------|----------------------|-------------------------|----------------|---------------|-----------------|----------------|
| Scenario A1 – Combined cycle operation with low NOx emissions (50mg/m³)    |                      |                         |                |               |                 |                |
| River Derwent SAC                                                          | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                          | 4.856                | 1.5                     | 0.008          | 0.2%          | 1.51            | 31%            |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                          | 0.462                | 1.37                    | 0.002          | 0.5%          | 1.37            | 297%           |
| Skipwith Common SAC                                                        | 0.820                | 1.37                    | 0.002          | 0.3%          | 1.37            | 167%           |
| Humber Est. SAC/SPA/Ramsar site                                            | Not sensitive        |                         |                |               |                 |                |
| Scenario B – Combined cycle operation with SCR (NOx emissions at 30mg/Nm³) |                      |                         |                |               |                 |                |
| River Derwent SAC                                                          | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                          | 0.453                | 1.50                    | 0.011          | 0.2%          | 1.51            | 31%            |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                           | 0.462                | 1.37                    | 0.003          | 0.6%          | 1.37            | 297%           |
| Skipwith Common SAC                                                        | 0.820                | 1.37                    | 0.003          | 0.3%          | 1.37            | 167%           |
| Humber Est. SAC/SPA/Ramsar site                                            | Not sensitive        |                         |                |               |                 |                |



Table 5-7 - Maximum Cumulative Operational Impact at Ecological Receptors – Annual Mean NH<sub>3</sub>

| Receptor                                                                                | Critical Level | Back-ground (µg/m <sup>3</sup> ) | PC (µg/m <sup>3</sup> ) | PC as % of Obj. | PEC (µg/m <sup>3</sup> ) | PEC as % of Obj. |
|-----------------------------------------------------------------------------------------|----------------|----------------------------------|-------------------------|-----------------|--------------------------|------------------|
| Scenario C – Combined cycle operation with low NOx emissions (50mg/m <sup>3</sup> )     |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                       | 3              | 2.76                             | 0.00                    | 0.0%            | 2.76                     | 92%              |
| Lower Derwent SAC/SPA/Ramsar site                                                       | 3              | 2.81                             | 0.00                    | 0.0%            | 2.81                     | 94%              |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                                        | 1              | 2.39                             | 0.00                    | 0.0%            | 2.39                     | 239%             |
| Skipwith Common SAC                                                                     | 1              | 2.42                             | 0.00                    | 0.0%            | 2.42                     | 242%             |
| Humber Est. SAC/SPA/Ramsar site                                                         | 3              | 2.92                             | 0.00                    | 0.0%            | 2.92                     | 97%              |
| Scenario D – Combined cycle operation with SCR (NOx emissions at 30mg/Nm <sup>3</sup> ) |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                       | 3              | 2.76                             | 0.06                    | 2.1%            | 2.82                     | 94%              |
| Lower Derwent SAC                                                                       | 3              | 2.81                             | 0.04                    | 1.4%            | 2.85                     | 95%              |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                       | 1              | 2.39                             | 0.01                    | 1.3%            | 2.40                     | 240%             |
| Skipwith Common SAC                                                                     | 1              | 2.42                             | 0.03                    | 2.7%            | 2.45                     | 245%             |
| Humber Est. SAC/SPA/Ramsar site                                                         | 3              | 2.92                             | 0.02                    | 0.7%            | 2.94                     | 98%              |

Table 5-8 - Maximum Cumulative Operational Impact at Ecological Receptors – Annual Mean NO<sub>x</sub>

| Receptor                                                                                            | Critical Level | Back-ground (µg/m <sup>3</sup> ) | PC (µg/m <sup>3</sup> ) | PC as % of Obj. | PEC (µg/m <sup>3</sup> ) | PEC as % of Obj. |
|-----------------------------------------------------------------------------------------------------|----------------|----------------------------------|-------------------------|-----------------|--------------------------|------------------|
| Scenario C – Combined cycle operation with low NO <sub>x</sub> emissions (50mg/m <sup>3</sup> )     |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 30             | 16.26                            | 2.79                    | 9.3%            | 19.05                    | 64%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 30             | 15.32                            | 1.82                    | 6.1%            | 17.14                    | 57%              |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                                                   | 30             | 18.56                            | 0.87                    | 2.9%            | 19.43                    | 65%              |
| Skipwith Common SAC                                                                                 | 30             | 14.75                            | 0.79                    | 2.6%            | 15.54                    | 52%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 30             | 23.19                            | 1.02                    | 3.4%            | 24.21                    | 81%              |
| Scenario D – Combined cycle operation with SCR (NO <sub>x</sub> emissions at 30mg/Nm <sup>3</sup> ) |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 30             | 16.26                            | 1.57                    | 5.2%            | 17.83                    | 59%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 30             | 15.32                            | 1.06                    | 3.5%            | 16.38                    | 55%              |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                                                    | 30             | 18.56                            | 0.66                    | 2.2%            | 19.22                    | 64%              |
| Skipwith Common SAC                                                                                 | 30             | 14.75                            | 0.50                    | 1.7%            | 15.25                    | 51%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 30             | 23.19                            | 0.68                    | 2.3%            | 23.87                    | 80%              |

Table 5-9 - Maximum Cumulative Operational Impact at Ecological Receptors – Daily Mean NO<sub>x</sub>

| Receptor                                                                                            | Critical Level | Back-ground (µg/m <sup>3</sup> ) | PC (µg/m <sup>3</sup> ) | PC as % of Obj. | PEC (µg/m <sup>3</sup> ) | PEC as % of Obj. |
|-----------------------------------------------------------------------------------------------------|----------------|----------------------------------|-------------------------|-----------------|--------------------------|------------------|
| Scenario C – Combined cycle operation with low NO <sub>x</sub> emissions (50mg/m <sup>3</sup> )     |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 75             | 32.5                             | 36.8                    | 49.1%           | 69.3                     | 92%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 75             | 30.6                             | 16.7                    | 22.3%           | 47.4                     | 63%              |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                                                    | 75             | 37.1                             | 8.6                     | 11.5%           | 45.7                     | 61%              |
| Skipwith Common SAC                                                                                 | 75             | 29.5                             | 7.2                     | 9.6%            | 36.7                     | 49%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 75             | 46.4                             | 10.1                    | 13.4%           | 56.4                     | 75%              |
| Scenario D – Combined cycle operation with SCR (NO <sub>x</sub> emissions at 30mg/Nm <sup>3</sup> ) |                |                                  |                         |                 |                          |                  |
| River Derwent SAC                                                                                   | 75             | 32.5                             | 22.4                    | 29.9%           | 54.9                     | 73%              |
| Lower Derwent SAC/SPA/Ramsar site                                                                   | 75             | 30.6                             | 12.6                    | 16.9%           | 43.3                     | 58%              |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                                                    | 75             | 37.1                             | 6.1                     | 8.1%            | 43.2                     | 58%              |
| Skipwith Common SAC                                                                                 | 75             | 29.5                             | 5.1                     | 6.8%            | 34.6                     | 46%              |
| Humber Est. SAC/SPA/Ramsar site                                                                     | 75             | 46.4                             | 6.9                     | 9.3%            | 53.3                     | 71%              |

Table 5-10 - Maximum Cumulative Operational Impact at Ecological Receptors – Nitrogen Deposition

| Receptor                                                                                | Critical Load        | Back-ground (kgN/ha/yr) | PC (kgN/ha/yr) | PC as % of CL | PEC (kgN/ha/yr) | PEC as % of CL |
|-----------------------------------------------------------------------------------------|----------------------|-------------------------|----------------|---------------|-----------------|----------------|
| Scenario C – Combined cycle operation with low NOx emissions (50mg/m <sup>3</sup> )     |                      |                         |                |               |                 |                |
| River Derwent SAC                                                                       | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                                       | 20                   | 21.0                    | 0.17           | 0.9%          | 21.2            | 106%           |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                                        | 5                    | 19.2                    | 0.09           | 1.7%          | 19.3            | 385%           |
| Skipwith Common SAC                                                                     | 10                   | 19.2                    | 0.08           | 0.8%          | 19.3            | 193%           |
| Humber Est. SAC/SPA/Ramsar site                                                         | 20                   | 20.7                    | 0.10           | 0.5%          | 20.8            | 104%           |
| Scenario D – Combined cycle operation with SCR (NOx emissions at 30mg/Nm <sup>3</sup> ) |                      |                         |                |               |                 |                |
| River Derwent SAC                                                                       | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                                       | 20                   | 21.0                    | 0.32           | 1.6%          | 21.3            | 107%           |
| Thorne Moor SAC and Thorne and Hatfield Moor SPA                                        | 5                    | 19.2                    | 0.13           | 2.7%          | 19.3            | 386%           |
| Skipwith Common SAC                                                                     | 10                   | 19.2                    | 0.19           | 1.9%          | 19.4            | 194%           |
| Humber Est. SAC/SPA/Ramsar site                                                         | 20                   | 20.7                    | 0.17           | 0.9%          | 20.9            | 104%           |

Table 5-11 - Maximum Cumulative Operational Impact at Ecological Receptors – Acid Deposition

| Receptor                                                                   | Critical Load        | Back-ground (kgN/ha/yr) | PC (kgN/ha/yr) | PC as % of CL | PEC (kgN/ha/yr) | PEC as % of CL |
|----------------------------------------------------------------------------|----------------------|-------------------------|----------------|---------------|-----------------|----------------|
| Scenario C – Combined cycle operation with low NOx emissions (50mg/m³)     |                      |                         |                |               |                 |                |
| River Derwent SAC                                                          | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                          | 4.856                | 1.5                     | 0.012          | 0.3%          | 1.51            | 31%            |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                          | 0.462                | 1.37                    | 0.006          | 1.3%          | 1.38            | 298%           |
| Skipwith Common SAC                                                        | 0.820                | 1.37                    | 0.006          | 0.7%          | 1.38            | 168%           |
| Humber Est. SAC/SPA/Ramsar site                                            | Not sensitive        |                         |                |               |                 |                |
| Scenario D – Combined cycle operation with SCR (NOx emissions at 30mg/Nm³) |                      |                         |                |               |                 |                |
| River Derwent SAC                                                          | No critical load set |                         |                |               |                 |                |
| Lower Derwent SAC/SPA/Ramsar site                                          | 4.856                | 1.50                    | 0.023          | 0.5%          | 1.52            | 31%            |
| Thorne Moor SAC and Thorne and Hatfield Moors SPA                          | 0.462                | 1.37                    | 0.010          | 2.1%          | 1.38            | 299%           |
| Skipwith Common SAC                                                        | 0.820                | 1.37                    | 0.013          | 1.6%          | 1.38            | 169%           |
| Humber Est. SAC/SPA/Ramsar site                                            | Not sensitive        |                         |                |               |                 |                |

### NOx critical levels – all sites

- 5.3.9. Emissions from the Proposed Scheme operating both with and without SCR increase NOx levels over all the European Sites considered. Where the Proposed Scheme (either alone or in-combination with other plans or projects) would increase NOx levels by less than 1% of critical level, this is considered insignificant on purely numerical grounds. These impacts are not considered to lead to LSE. Equally, where the PEC would be less than 70%, regardless of the magnitude of change, this is also considered insignificant on purely numerical grounds.
- 5.3.10. It should be noted that the main impact of increases in ambient concentrations of NOx is as a precursor to increasing the rate of deposition of nitrogen onto habitats. Detailed assessment of nitrogen deposition impacts is included in the subsequent sections of this report. It has been concluded that the impacts of nitrogen deposition would not lead to adverse effects on the integrity of any European Site. Given that there would be no exceedances of the critical level at any European Site either alone or in combination, changes in NOx levels are not predicted to lead to any adverse effects on any European Sites.
- 5.3.11. Predicted NOx impacts for each European Site are summarised in table 6-12 below.

*Table 5-12 – Summary of changes in NOx levels (cumulative)*

| Designated Site                                 | Maximum PC Annual Mean, % of Obj. | Maximum PEC Annual Mean % of Obj. | Maximum PC Daily Mean, % of Obj. | Maximum PEC Daily Mean % of Obj. |
|-------------------------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| River Derwent SAC                               | 9.3%                              | 64%                               | 49.1%                            | 92%                              |
| Lower Derwent Valley (SAC/ SPA / Ramsar)        | 6.1%                              | 57%                               | 22.3%                            | 63%                              |
| Thorne Moor SAC & Thorne and Hatfield Moors SPA | 2.9%                              | 65%                               | 11.5%                            | 61%                              |
| Skipwith Common SAC                             | 2.6%                              | 52%                               | 9.6%                             | 49%                              |
| Humber Estuary (SAC / SPA / Ramsar)             | 3.4%                              | 81%                               | 13.4%                            | 75%                              |

## Deposition and ammonia concentration impacts (Proposed Scheme alone)

### River Derwent SAC

- 5.3.12. The air quality modelling demonstrated that the Proposed Scheme alone would not lead to any exceedances of air quality standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations. An extract of the air quality modelling results for the River Derwent is presented in Tables 6-2 to 6-10, above. There is a maximum predicted impact for NH<sub>3</sub> of 1.1% of the critical level (see Table 6-2). This is considered to be analogous with an impact of 1% of critical level, due to the inherent uncertainty and conservatism built into the air quality modelling.
- 5.3.13. The River Derwent (and the hydrologically connected downstream River Ouse) is not considered to be sensitive to the effects of nitrogen deposition and associated acidification, due to the rivers water quality. Environment Agency (EA) monitoring data indicates that the River Derwent is heavily phosphate limited (see Appendix 4). The EA monitoring data also indicates that the River Ouse is phosphate-limited. In phosphate limited systems, additional inputs of nitrogen have limited effects on plant productivity, as phosphate is the primary limiting nutrient. As such, additional inputs would be unlikely to lead to any perceptible eutrophication effects on SAC freshwater habitats.
- 5.3.14. It is to be noted that despite the significant ongoing inputs of nitrogen to the River Derwent SAC from other, pre-existing sources, the constituent SSSI Units of the River Derwent SAC (River Derwent SSSI and Newton Mask SSSI) within 15 km of the Site Boundary, were all assessed as being in 'favourable', 'unfavourable recovering' or 'unfavourable no change' condition when last assessed. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments of the Site. This suggests that existing high levels of nutrient nitrogen input are likely to be having a limited if any effect on habitats within the SAC.
- 5.3.15. In light of the information presented above, no adverse effects to the integrity of the SAC are predicted.

### Lower Derwent Valley SAC

- 5.3.16. The air quality modelling shows that the Proposed Scheme will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations. Furthermore, the Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto the Lower Derwent Valley SAC. There is a maximum modelled process contribution of 0.8% and 0.2% for nitrogen and acid deposition respectively. The process contribution from the Proposed Scheme also reduces with increasing distance from the stacks. For example, the maximum process contribution for nitrogen deposition onto the Brighton Meadows SSSI component of the SAC (the closest part of the site), is predicted to be 0.8%. The maximum process contribution for nitrogen deposition onto the Derwent Ings SSSI component of the SAC (approximately 2 km further north than Brighton Meadows SSSI), is predicted to be 0.5%.
- 5.3.17. In light of the information presented above, no adverse effects to the integrity of the SAC are predicted.

#### Lower Derwent Valley SPA and Ramsar

- 5.3.18. The air quality modelling shows that the Proposed Scheme will not lead to any exceedances of AQ standards for NO<sub>x</sub> or NH<sub>3</sub> concentrations. The Proposed Scheme alone will not lead to significant nitrogen or acid deposition onto the Lower Derwent Valley SPA. There is a maximum modelled process contribution of 0.8% and 0.2% for nitrogen and acid deposition respectively (see Table 6.5 and 6.6 of this report, respectively). The process contribution from the Proposed Scheme also reduces with increasing distance from the stacks. For example, the maximum process contribution for nitrogen deposition onto the Brighton Meadows SSSI component of the SPA (the closest part of the site), is predicted to be 0.8%; the maximum process contribution for nitrogen deposition onto the Derwent Ings SSSI component of the SPA (approximately 2 km further north than Brighton Meadows SSSI), is predicted to be 0.5%.

In light of the information presented above, no adverse effects to the integrity of the SAC are predicted.

#### Skipwith Common SAC

- 5.3.19. The air quality modelling shows that the Proposed Scheme would make a minor contribution to an existing exceedance of the critical level for annual mean NH<sub>3</sub> concentrations when operating with SCR (see Table 6-2 of this report). The Proposed Scheme would generate a maximum Process Contribution of 0.4% of the critical level for NH<sub>3</sub>. This is in the context of an existing exceedance of 242% of critical level, with the Proposed Scheme contributing the equivalent of up to 0.17% of background levels. There are no exceedances of critical levels for NO<sub>x</sub>, see Tables 6-3 and 6-4 of this report). The Proposed Scheme will not lead to significant nitrogen or acid deposition onto Skipwith Common SAC. There is a maximum modelled process contribution of 0.4% and 0.3% for nitrogen and acid deposition respectively (see Table 6-5 and 6-6). The process contribution also reduces with increasing distance from the Proposed Scheme.

In light of the information presented above, no adverse effects to the integrity of the SAC are predicted.

#### Thorne Moor SAC

- 5.3.20. ES Chapter 6 (Air Quality) sets out the methodology and results of air quality dispersion modelling of the Proposed Scheme. This includes quantification of potential air quality impacts on designated ecological sites, including Natura 2000 Sites. Tables 6.2 to 6.6 set out the predicted numerical air quality impacts of the Proposed Scheme, These include the predicted impact of the Proposed Scheme on levels of Nitrous Oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), nitrogen deposition and acidification.
- 5.3.21. The air quality modelling shows that the Proposed Scheme would make a minor contribution to an existing exceedance of the critical level for annual mean NH<sub>3</sub> concentrations when operating with SCR (see Table 6-2 of this report). The Proposed Scheme would generate a maximum Process Contribution of 0.5% of the critical level for NH<sub>3</sub>. This is in the context of an existing exceedance of 239% of critical level, with the process contribution from the Proposed Scheme equivalent to approximately 0.2% of background levels. There are no exceedances of critical levels for NO<sub>x</sub> (see Tables 6-3 and 6-4). The Proposed Scheme



would not lead to significant nitrogen or acid deposition onto Thorne Moor SAC. There is a maximum modelled process contribution of 0.8% and 0.6% for nitrogen and acid deposition respectively (see Tables 6-5 and 6-6 respectively). The process contribution also reduces with increasing distance from the Proposed Scheme.

In light of the information presented above, no adverse effects to the integrity of the SAC are predicted.

#### Thorne and Hatfield Moor SPA

- 5.3.22. The air quality modelling shows that the Proposed Scheme would make a minor contribution to an existing exceedance of the critical level for annual mean  $\text{NH}_3$  concentrations when operating with SCR, (see Tables 6-2). The Proposed Scheme would generate a maximum Process Contribution of 0.5% of the critical level for  $\text{NH}_3$ . This is in the context of an existing exceedance of 239% of critical level, with the process contribution from the Proposed Scheme equivalent to approximately 0.2% of background levels. There are no exceedances of critical levels for  $\text{NO}_x$  see Tables 6-3 and 6-4. The Proposed Scheme would not lead to significant nitrogen or acid deposition onto Thorne and Hatfield Moor SPA. There is a maximum modelled process contribution of 0.8% and 0.6% for nitrogen and acid deposition respectively (see Tables 6-5 and 6-6, respectively). The process contribution also reduces with increasing distance from the Proposed Scheme.

In light of the information presented above, no adverse effects to the integrity of the SPA are predicted.

#### Humber Estuary SAC, SPA and Ramsar site

- 5.3.23. The air quality modelling shows that the Proposed Scheme will not lead to any exceedances of AQ standards for  $\text{NO}_x$  or  $\text{NH}_3$  concentrations (see Tables 6-2, 6-3, and 6-4). The Proposed Scheme will not lead to significant nitrogen or acid deposition onto the Humber Estuary. There is a maximum modelled process contribution of 0.3% of critical load for nitrogen deposition and the Humber Estuary habitats are not considered to be sensitive to acidification (see Table 6-5 and 6-6 of this report, respectively). The process contribution from the Proposed Scheme also reduces with increasing distance from the Proposed Scheme, with the 0.3% of critical load the modelled process contribution at the point of greatest impact.

#### Avoidance and Mitigation Measures

- 5.3.24. The Proposed Scheme allows for primary mitigation of impacts during operation through the control of  $\text{NO}_x$  emissions. Two scenarios have been considered for the control of  $\text{NO}_x$  emissions:
- Combustion Control – Low  $\text{NO}_x$  emissions ( $<50\text{mg}/\text{Nm}^3$  in the exhaust gases) can be achieved via optimisation of the combustion process in the Gas Generating Stations. This reduces the maximum efficiency of the units slightly but does not require exhaust gas treatment.
  - Exhaust Gas Treatment – The use of exhaust gas treatment such as SCR can further reduce  $\text{NO}_x$  emissions ( $<30\text{mg}/\text{Nm}^3$ ) but may result in emissions of ammonia where unreacted ammonia passes through the system (so called ‘ammonia slip’). To mitigate the impacts of the use of treatments such as SCR whilst maintaining operational flexibility and allowing for future technological improvements, the Proposed Scheme is based on an annual emissions ceiling of 120 tonnes of ammonia.

### Efficacy of Mitigation Measures and Residual Effects

- 5.3.25. During operation, the realistic worst-case scenarios assessed (with or without SCR, as set out in section 3.2) have been taken into account in the assessment. The residual effects are discussed in both the alone and in-combination assessment sections.
- 5.3.26. The contribution of the Proposed Scheme, whether assessed alone or in combination with other industrial processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.

### Effects in Combination with Other Plans and Projects River Derwent SAC

- 5.3.27. As a result of a negative assessment, it is not considered that the Proposed Scheme will act in-combination with those projects and plans listed in Table 3.1 above. Whilst the cumulative impacts on NH<sub>3</sub> concentrations exceed the 1% screening criteria, the cumulative PEC would be a maximum of 92% of critical level. Given the cumulative impact would not exceed the critical level, no adverse effects on the integrity of the SAC are predicted. The River Derwent and River Ouse are both phosphate-limited and hence are considered insensitive to additional inputs of nitrogen (see Appendix 4). As such, additional inputs of nitrogen via cumulative nitrogen deposition are not predicted to lead to any perceptible eutrophication effects on the SAC.

### Lower Derwent Valley SAC

- 5.3.28. The maximum predicted cumulative impact of the Proposed Scheme would be 1.4% of critical level for NH<sub>3</sub>. There would be no exceedance of the critical level, with a maximum predicted concentration equivalent to 95% of critical level for NH<sub>3</sub>. As there would be no exceedance of critical level, plus remaining headroom equivalent to 5% of critical level, no adverse effects on the integrity of the European Site are predicted.
- 5.3.29. The maximum predicted cumulative impact of the Proposed Scheme would be 1.6% of critical load for nitrogen deposition and 0.3% for acidification (see Tables 6-10 and 6-11). The cumulative acid deposition impact is predicted to lead to a *de minimus* in-combination effect, which will lead to no perceptible vegetative change of SAC habitats. The cumulative impacts on nitrogen deposition exceed 1% of critical load. The cumulative nitrogen deposition impact reduces with increasing distance from site. Whilst a maximum impact of 1.6% of critical load is predicted over the Brighton Meadows SSSI component of the SAC, the maximum impact over the more distant Derwent Ings SSSI component is 1.4%, declining further with increasing distance from the Proposed Scheme. The Brighton Meadows SSSI has an area of 38.79 ha, representing approximately 4.2% by area of the SAC.
- 5.3.30. It is to be noted that despite the significant ongoing inputs of nitrogen to the SAC from other, pre-existing sources, the constituent SSSI Units of the Lower Derwent SAC (Brighton Meadows SSSI and Derwent Ings SSSI) within 15km of the Site, were all assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed. A copy of the last

SSSI unit condition assessment is provided in Appendix 3. 92.86% of the Brighton Meadows SSSI was reported as being in 'favourable' condition, with the remaining 7.14% recorded as being in 'unfavourable – recovering' condition. For the Derwent Ings SSSI, 59.7% of the SSSI units are reported to be in 'favourable' condition, with the remaining 40.3% of the SSSI units in 'unfavourable – recovering' condition. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments of the Site. This suggests that there are no evident adverse effects of background deposition levels on the SAC habitats.

5.3.31. The contribution of the Proposed Scheme, whether assessed alone or in combination with other industrial processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.

5.3.32. Taking into account the conservatism built into the air quality assessment including:

- Continuous full load operation for the year.
- 70% conversion of NO<sub>x</sub> to NO<sub>2</sub>.
- Assessment of maximum impacts anywhere in a designated site, irrespective of area represented by the maximum and the presence of particular habitats.
- Assessment against the lower threshold of recommended critical loads.
- Assessment of maximum impacts across 5 modelled years.
- Emissions continually at the limit set in the IED / Bref Conclusions and or recommended emissions ceiling.

5.3.33. The impacts of the Proposed Scheme both alone and in combination with other relevant development proposals will be small overall and likely imperceptible.

5.3.34. In light of the information presented above, no adverse effects to the integrity of the Lower Derwent Valley SAC are predicted to arise.

#### Lower Derwent Valley SPA and Ramsar

5.3.35. The maximum predicted cumulative impact of the Proposed Scheme would be 1.4% of critical level for NH<sub>3</sub>. There would be no exceedance of the critical level, with a maximum predicted concentration equivalent to 95% of critical level for NH<sub>3</sub>. As there would be no exceedance of critical level, plus remaining headroom equivalent to 5% of critical level, no adverse effects on the integrity of the European Site are predicted.

5.3.36. The maximum predicted cumulative impact of the Proposed Scheme would be 1.6% for nitrogen deposition and 0.3% for acidification (see Tables 6.10 and 6.11) for the neutral grassland habitats assessed. The cumulative acid deposition impact is predicted to lead to a de minimus in-combination effect, which would lead to no perceptible vegetative change of SPA habitats. The cumulative impacts on nitrogen deposition therefore exceed 1% of critical load. The cumulative nitrogen deposition impact reduces with increasing distance from site. Whilst a maximum impact of 1.6% of critical load (Process Contribution from the Proposed Scheme up to 0.6%) is predicted over the Brighton Meadows SSSI component of the SPA,

the maximum impact over the more distant Derwent Ings SSSI component is 1.4% (Process Contribution from the Proposed Scheme up to 0.4%), with the Process Contribution from the Proposed Scheme declining further with increasing distance from the Proposed Scheme. The Brighton Meadows SSSI has an area of 38.79 ha, representing approximately 4.2% by area of the SPA.

- 5.3.37. It is to be noted that despite the significant ongoing inputs of nitrogen to the SAC from other, pre-existing sources, the constituent SSSI Units of the Lower Derwent SPA (Brighton Meadows SSSI and Derwent Ings SSSI) within 15 km of the Site, were all assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed. A copy of the last SSSI unit condition assessment is provided in the Appendix 3. 92.86% of the Brighton Meadows SSSI was reported as being in 'favourable' condition, with the remaining 7.14% recorded as being in 'unfavourable – recovering' condition. For the Derwent Ings SSSI, 59.7% of the SSSI units are reported to be in 'favourable' condition, with the remaining 40.3% of the SSSI units in 'unfavourable – recovering' condition. The SSSI condition assessment reports identify that the botanical diversity of the SSSI appears to remain similar to that observed during previous botanical surveys and assessments. This suggests that there are no evident effects of background deposition levels on the SAC habitats.
- 5.3.38. The Site relevant critical loads for the Derwent Valley SPA described on APIS (Ref 7) includes advice on the application of critical loads and levels to several of the bird species for which the SPA is designated (golden plover, tundra swan, ruff and Eurasian teal). The advice on critical loads identifies that 'no expected negative impact on species due to impacts on the species' broad habitat' for Eurasian teal and Ruff. For tundra swan a potential negative impact is identified for standing water habitats, dependent on whether waterbodies are nitrogen or phosphate-limited. Environment Agency (EA) monitoring data indicates that the River Derwent is strongly phosphate limited (see ES Chapter 9 (Biodiversity)). In phosphate limited systems, additional inputs of nitrogen have limited effects on plant productivity, as phosphate is the primary limiting nutrient. As such, additional inputs would be unlikely to lead to any perceptible eutrophication effects on standing water habitats within the SPA.
- 5.3.39. The contribution of the Proposed Scheme, whether assessed alone or in combination with other processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.
- 5.3.40. Taking into account the conservatism built into the air quality assessment including:
- Continuous full load operation for the year.
  - 70% conversion of NO<sub>x</sub> to NO<sub>2</sub>.
  - Assessment of maximum impacts anywhere in a designated site, irrespective of area represented by the maximum and the presence of particular habitats.
  - Assessment against minimum recommended critical loads.
  - Assessment of maximum impacts across 5 modelled years.

- Emissions continually at the limit set in the IED / Bref Conclusions and or recommended emissions ceiling.

5.3.41. The impacts of the Proposed Scheme both alone and cumulatively with other relevant development proposals will be small overall and likely imperceptible.

5.3.42. In light of the information presented above, no adverse effects to the integrity of the Lower Derwent Valley SPA and Ramsar site are predicted to arise.

#### Skipwith Common SAC

5.3.43. The maximum predicted in-combination impact of the Proposed Scheme would be 2.7% of the critical level for NH<sub>3</sub>, with the Proposed Scheme contributing up to 0.4% of this. This represents an additional contribution to the existing exceedance of the NH<sub>3</sub> critical level at this Site. There would be an in-combination impact of up to 1.9% of critical load for nitrogen deposition and up to 1.6% for acidification, with the Proposed Scheme contributing 0.4% and 0.3% respectively. The upper critical load range is exceeded at this European Site (see Table 6.1) The in-combination impacts on NH<sub>3</sub> concentrations and nitrogen and acid deposition therefore exceed 1% of critical load / critical levels (see Tables 6.7, 6.10 and 6.11).

5.3.44. To support the assessment of the implications of this deposition on Skipwith Common SAC, published research into the effects of nitrogen deposition on heathland habitats was reviewed. This included a review of existing scientific knowledge covering several studies (Caporn *et al*, 2016; Ref 5) and a study of how ecosystem functions could be used as indicators for heathland response to nitrogen deposition (Bahring *et al*, 2017; Ref 8). These studies suggest that the effects of additional nitrogen where background deposition rates are already high are much reduced relative to where background deposition rates are low. This is because nitrogen is already in excess; as such the plants present within the habitats have limited capacity to respond to additional inputs. In the Natural England study (Caporn *et al*, 2016; Ref 5), with background deposition rates of 20 kgN/ha/yr (comparable to estimated baseline deposition rates at Skipwith common SAC), adding a further 1 kg N/ha/yr was shown to decrease species richness by between 1.4% and 1.9%. Graminoid (grass) cover was found to increase by between 0.8% and 1.1%. The maximum species richness recorded varied between 16 and 32 (Caporn *et al.*, 2016; Ref 5).

5.3.45. Taking a worst-case species richness from the above of 16, an impact equivalent to 3.26 kgN/ha/yr would theoretically be required to reduce species richness across the SAC by an average of one species (per quadrat). The maximum predicted cumulative impact of the Proposed Scheme with other plans and projects is 0.19 kgN/ha/yr, equivalent to approximately 6% of the amount required to reduce species richness by an average of one species per quadrat. This level of deposition falls within the bounds of natural variation and is predicted to lead to negligible (and imperceptible) vegetative change across the SAC. The worst-case in-combination impact of acid deposition is marginally above 1% (1.6%), with the contribution from the Proposed Scheme (a maximum of 0.5%) decreasing with increasing distance from the Proposed Scheme. No perceptible vegetative change to SAC habitats is predicted to arise from this level of deposition.

5.3.46. Following EA guidance, with regard to the significance of changes in deposition rates on designated ecological sites, an impact is considered to be insignificant where the change in



process contribution (PC) is 1% (or less) of the long term critical load or critical level for the ecological site under consideration. The guidance further states that the 1% threshold is based on the judgement that it is unlikely that an emission at this level will make a significant contribution to air quality since PCs will be small in comparison to background levels, even if a standard is exceeded. The use of 1% of the critical load is also outlined within the IAQM's position statement (IAQM, 2015; Ref. 29) which suggests that 1% of the critical load should be used to determine either where further assessment is required or to screen out effects that are not likely to be significant (i.e. the effect is negligible).

- 5.3.47. The contribution of the Proposed Scheme, whether assessed alone or in combination with other industrial processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.
- 5.3.48. Taking into account the conservatism built into the air quality assessment including:
- Continuous full load operation for the year.
  - 70% conversion of NO<sub>x</sub> to NO<sub>2</sub>.
  - Assessment of maximum impacts anywhere in a designated site, irrespective of area represented by the maximum and the presence of particular habitats.
  - Assessment against the lower threshold of recommended critical loads.
  - Assessment of maximum impacts across 5 modelled years.
  - Emissions continually at the limit set in the IED / Bref Conclusions and or recommended emissions ceiling.
- 5.3.49. The impacts of the Proposed Scheme both alone and in combination with other relevant development proposals will be small overall and likely imperceptible.
- 5.3.50. In addition, the constituent SSSI Units of the Skipwith Common SAC within 15km of the Proposed Scheme were also assessed as being in 'favourable' or 'unfavourable recovering' condition when last assessed in 2014. A copy of the last SSSI unit condition assessment is provided in Appendix 3. 47.96% of the constituent SSSI units were reported as being in 'favourable' condition, the remaining value of 52.04% was recorded as being in 'unfavourable – recovering' condition, suggesting the condition of these areas in relation to their target condition is being achieved or improving despite current inputs of nutrient nitrogen from diffuse agricultural and other sources. The predicted worst-case inputs from the Proposed Scheme are unlikely to alter that situation.
- 5.3.51. Data on APIS (Ref 9) indicates that approximately 8.6% of nitrogen deposition onto Skipwith Common SAC arises from road transport. Future reductions in emissions from the UK vehicle fleet would therefore reduce and eventually eliminate these inputs. For comparison, the source attribution data on APIS identifies the Existing Drax Power Station Complex as contributing approximately 1.5% of total nitrogen deposition.

- 5.3.52. Given the factors set out above, the air quality impacts of the Proposed Scheme are not predicted to lead to adverse effects on the integrity of the Proposed Scheme in combination with other plans and projects.

#### Thorne Moor SAC

- 5.3.53. The maximum predicted cumulative impact of the Proposed Scheme would be 1.3% of the critical level for  $\text{NH}_3$ , with the Proposed Scheme contributing up to 0.5% of this. The contribution from the Proposed Scheme to cumulative  $\text{NH}_3$  also decreases with increasing distance from the stacks. Given the cumulative exceedance is only marginally above 1% of critical level at the point of greatest predicted impact, no perceptible effects on SAC vegetation are predicted to arise. There would be a cumulative impact of up to 2.7% of critical load for nitrogen deposition and up to 2.1% for acidification, with the Proposed Scheme contributing 0.8% and 0.6% respectively. The cumulative impacts on nitrogen and acid deposition therefore exceed 1% of critical load (see Tables 6.10 and 6.11 of this report, respectively).
- 5.3.54. To support the assessment of the implications of this deposition, published research into the effects of nitrogen deposition on bog habitats was reviewed. This included a review of existing scientific knowledge covering several studies (Caporn *et al.* 2016; Ref 5). This study suggests that the effects of additional nitrogen where background deposition rates are already high are much reduced relative to where background deposition rates are low. This is because nitrogen is already in excess, with the plants present having limited capacity to respond. In this study, with background deposition rates of 20 kg N/ha/yr (comparable to estimated baseline deposition rates at Thorne Moor SAC), adding a further 1 kg N/ha/yr was shown to decrease species richness by 0.9%. Graminoid (grass) cover was found to increase by 1.5%. The maximum species richness recorded across the studies examined in was 32 (Caporn *et al.* 2016; Ref 5).
- 5.3.55. Taking a species richness from the above of 32, an impact equivalent to 3.3 kgN/ha/yr would theoretically be required to reduce species richness across the SAC by an average of one species (per quadrat). The maximum predicted in-combination impact of the Proposed Scheme with other plans and projects is 0.13 kgN/ha/yr, equivalent to approximately 3.9% of the amount required to reduce species richness by an average of one species per quadrat. This level of deposition falls within the bounds of natural variation and is predicted to lead to negligible (and imperceptible) vegetative change across the SAC. The worst-case in-combination impact of acid deposition is above 1% (2.1%), with the contribution from the Proposed Scheme decreasing with increasing distance from stacks. Again, no perceptible vegetative changes of SAC habitats are predicted to arise from this level of deposition, in the context of the baseline deposition levels. There is also evidence from a study completed by the Centre for Ecology and Hydrology (Monteith *et al.* 2015; Ref 10) that suggests levels of acid deposition across Thorne Moor are reducing, with evidence of a downward trend between 2012 and 2014.
- 5.3.56. The contribution of the Proposed Scheme, whether assessed alone or in combination with other industrial processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference

to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.

5.3.57. Taking into account the conservatism built into the air quality assessment including:

- Continuous full load operation for the year.
- 70% conversion of NO<sub>x</sub> to NO<sub>2</sub>.
- Assessment of maximum impacts anywhere in a designated site, irrespective of area represented by the maximum and the presence of particular habitats.
- Assessment against the lower threshold of recommended critical loads.
- Assessment of maximum impacts across 5 modelled years.
- Emissions continually at the limit set in the IED / Bref Conclusions and or recommended emissions ceiling.

5.3.58. The constituent SSSI Units of the Thorne Moor SAC within 15 km of the Site, were assessed as being in 'favourable', 'unfavourable recovering', 'unfavourable no change' and 'unfavourable declining' condition when last assessed. A copy of the last SSSI unit condition assessment is provided in Appendix 3. 3.85% of the Thorne Crowle and Goole Moors SSSI was reported as being in 'favourable' condition, with 91.97% recorded as being in 'unfavourable – recovering' condition. 2.94% was assessed as 'unfavourable no change' with 1.24% 'unfavourable declining'. The majority of the SAC is considered to be in 'unfavourable – recovering' condition by NE. NE identify initiatives to control scrub and manage water balance as the main factors leading to improvements. This suggests the condition of these areas in relation to their target condition is being achieved or improving despite current inputs of nutrient nitrogen from diffuse agricultural and other sources. The predicted worst-case inputs from the Proposed Scheme are unlikely to alter that situation.

5.3.59. Data on APIS (Ref 11) indicates that approximately 10.3% of nitrogen deposition onto Thorne Moor SAC arises from road transport. Future reductions in emissions from the UK vehicle fleet would therefore reduce and eventually eliminate these inputs. For comparison, the source attribution data on APIS identifies the Existing Drax Power Station Complex as contributing approximately 1.9% of total nitrogen deposition.

5.3.60. Given the factors set out above, the air quality impacts of the Proposed Scheme are not predicted to lead to adverse effects on the integrity of the SAC, in combination with other proposed developments.

#### Thorne and Hatfield Moor SPA

5.3.61. The maximum predicted cumulative impact of the Proposed Scheme would be 1.3% of the critical level for NH<sub>3</sub>, with the Proposed Scheme contributing up to 0.5% of this. The contribution from the Proposed Scheme to cumulative NH<sub>3</sub> also decreases with increasing distance from the stacks. Given the cumulative exceedance is only marginally above 1% of critical level at the point of greatest predicted impact, no perceptible effects on SAC vegetation are predicted to arise. As such, the suitability of the habitats present to support nightjar is not expected to be subject to perceptible change. There would be a cumulative impact of up to 2.7% of critical load for nitrogen deposition and up to 2.1% for acidification, with the Proposed Scheme contributing 0.8% and 0.6% respectively. The cumulative impacts on nitrogen and acid deposition therefore exceed 1% of critical load (see Tables 6-10 and 6-11).



- 5.3.62. To support the assessment of the implications of this deposition, published research into the effects of nitrogen deposition on heathland and bog habitats was reviewed. Although not a qualifying interest of the Thorne Moor SAC, lowland heathland habitats are present at the SAC/SPA (see Appendix 3) and will form part of the habitat mosaic used by the qualifying interest of the SPA (nightjar). This included a review of existing scientific knowledge covering several studies (Caporn *et al* 2016; Ref 5) and a study of how ecosystem functions could be used as indicators for heathland response to nitrogen deposition (Bahring *et al*, 2017; Ref 8).
- 5.3.63. These studies suggest that the effects of additional nitrogen where background deposition rates are already high are much reduced relative to where background deposition rates are low. This is because nitrogen is already in excess, with the plants present having limited capacity to respond. In the Natural England study (Caporn *et al* 2016; Ref 5), with background deposition rates of 20 kg N/ha/yr (comparable to estimated baseline deposition rates at Thorne Moor SAC), adding a further 1 kg N/ha/yr was shown to decrease species richness by around 0.9%. Graminoid (grass) cover was found to increase by 1.5%. The maximum species richness recorded across the studies examined in Caporn *et al*, (Caporn *et al* 2016; Ref 5) was 32.
- 5.3.64. Taking a species richness from the above of 32, an impact equivalent to 3.3 kgN/ha/yr would theoretically be required to reduce species richness across the SAC by an average of one species (per quadrat). The maximum predicted cumulative impact of the Proposed Scheme with other plans and projects is 0.13kgN/ha/yr, equivalent to approximately 3.9% of the amount required to reduce species richness by an average of one species per quadrat. This level of deposition falls within the bounds of natural variation and is predicted to lead to negligible (and imperceptible) vegetative change across the SAC.
- 5.3.65. The worst-case cumulative impact of acid deposition is above 1% (2.1%), with the contribution from the Proposed Scheme decreasing with increasing distance from stacks. Again, no perceptible vegetative changes to SAC habitats are predicted to arise from this level of deposition. There is also evidence from a study completed by the Centre for Ecology and Hydrology (Monteith *et al*. 2015; Ref 10) that suggests levels of acid deposition across Thorne Moor are reducing, with evidence of a downward trend between 2012 and 2014.
- 5.3.66. The contribution of the Proposed Scheme, whether assessed alone or in combination with other industrial processes, is largely insignificant and a relatively small proportion of the total deposition. The risk of exceedance of critical loads and the level of exceedance of the critical loads is a function of the rates of background deposition rather than the result of the operation of the Proposed Scheme. In other words, the Proposed Scheme would make no difference to the exceedance of critical loads and levels for the European Sites within 15km of the Proposed Scheme.
- 5.3.67. Taking into account the conservatism built into the air quality assessment including:
- Continuous full load operation for the year.
  - 70% conversion of NO<sub>x</sub> to NO<sub>2</sub>.
  - Assessment of maximum impacts anywhere in a designated site, irrespective of area represented by the maximum and the presence of particular habitats.
  - Assessment against the lower threshold of recommended critical loads.
  - Assessment of maximum impacts across 5 modelled years.

- Emissions continually at the limit set in the IED / Bref Conclusions and or recommended emissions ceiling.

- 5.3.68. The constituent SSSI Units of the Thorne Moor SAC within 15 km of the Project Site, were assessed as being in 'favourable', 'unfavourable recovering', 'unfavourable no change' and 'unfavourable declining' condition when last assessed. A copy of the last SSSI unit condition assessment is provided in the screening matrices (see Appendix 3). 3.85% of the Thorne, Crowle and Goole Moor SSSI was reported as being in 'favourable' condition, with 91.97% recorded as being in 'unfavourable – recovering' condition. 2.94% was assessed as 'unfavourable no change' with 1.24% 'unfavourable declining'. The majority of the SAC is considered to be in 'unfavourable – recovering' condition by NE. NE identify initiatives to control scrub and manage water balance as the main factors leading to improvements in habitat condition (see Appendix 3). This suggests the condition of these areas in relation to their target condition is being achieved or improving despite current inputs of nutrient nitrogen from diffuse agricultural and other sources. The predicted worst-case inputs from the Proposed Scheme are unlikely to alter that situation.
- 5.3.69. Data on APIS (Ref 11) indicates that approximately 10% of nitrogen deposition onto Thorne Moor SPA arises from road transport. Future reductions in emissions from the UK vehicle fleet would therefore reduce and eventually eliminate these inputs. For comparison, the source attribution data on APIS identifies the Existing Drax Power Station Complex as contributing approximately 1.7% of total nitrogen deposition.
- 5.3.70. Given the factors set out above, the air quality impacts of the Proposed Scheme are not predicted to lead to adverse effects on the integrity of the Proposed Scheme, either alone or in combination with other plans and projects.

#### Humber Estuary SAC, SPA and Ramsar site

- 5.3.71. Humber Estuary habitats occurring within 15km of the Proposed Scheme are not considered to be sensitive to acidification; no in-combination assessment for this pollutant is therefore required for this European Site. There would also be no in-combination exceedances of critical levels for NO<sub>x</sub> or NH<sub>3</sub> (see Tables 6-7, 6-8 and 6-9 of this report).
- 5.3.72. The maximum predicted cumulative deposition impact of the Proposed Scheme would be 0.9% for nitrogen deposition; i.e. under 1% of the critical load (see Table 6-10 of this report).
- 5.3.73. Given that the cumulative impacts of the Proposed Scheme would be less than 1% of critical load or critical level for all relevant air quality standards, no adverse effects on the integrity of the Humber Estuary European sites are predicted to arise.

## 5.4 Summary

- 5.4.1. In the context of the known qualifying feature vulnerabilities, it is possible to conclude that there will be no adverse effects (alone or in-combination) on the integrity of the River Derwent SAC, the Lower Derwent Valley SAC, SPA and Ramsar, Skipwith Common SAC, Thorne Moor SAC, Thorne and Hatfield Moor SPA and Humber Estuary SAC, SPA and Ramsar site as a result of air quality changes arising from operation of the Proposed Scheme.

## 6 CONCLUSION

- 6.1.1. In accordance with the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations), an appropriate assessment (referred to in this document as an HRA) of the Drax Repower Project, hereafter referred to as the 'Proposed Scheme' has been undertaken.
- 6.1.2. The HRA was informed by an initial screening for likely significant effects (LSE), which identified LSE on the following European Sites identified within a 15 km zone of influence for potential impacts.
- Lower Derwent Valley SAC.
  - Lower Derwent Valley SPA.
  - Lower Derwent Valley Ramsar.
  - River Derwent SAC.
  - Humber Estuary SAC.
  - Humber Estuary SPA.
  - Humber Estuary Ramsar site.
  - Skipwith Common SAC.
  - Thorne and Hatfield Moors SPA.
  - Thorne Moor SAC.
- 6.1.3. The zone of influence for potential impacts on European sites was set at 15 km from the centre of the stacks of the proposed gas turbines (within the Power Station Site). This was taken to correspond to the maximum extent of perceptible air quality impacts, with air quality impacts predicted to have the largest zone of influence of all potentially identified impacts.
- 6.1.4. Having identified European sites within the ZoI and assessed their interest features and Conservation Objectives, the Stage 1 screening (undertaken based on an assessment of the unmitigated Proposed Scheme) discounted a number of potential impacts (for example, direct impacts on European sites and indirect impacts through hydrological changes). The Stage 1 screening also identified a range of impacts that could arise from the Proposed Scheme, as follows:
- Disturbance to qualifying features in functionally-linked habitat (light/noise/vibration/visual).
  - Hydrological changes to functionally-linked habitat (quality/flow).
  - Air quality changes.
- 6.1.5. These effects were assessed further through the Stage 2 assessment for potential adverse effects on integrity which considered: European Site data; available environmental condition data; and the potential effects of the Proposed Scheme on its own and in-combination with other plans and projects, taking mitigation proposed for the Proposed Scheme into account.
- 6.1.6. It was concluded that the Proposed Scheme would not have an adverse effect on the integrity of any of the European Sites assessed.

## REFERENCES

- Ref 1 European Council Directive 92/43/EEC 'The Habitats Directive'
- Ref 2 European Council Directive 2009/147/EEC 'The Birds Directive'
- Ref 3 Her Majesty's Stationary Office (HMSO), 2017. The Conservation of Habitats and Species Regulations 2017.
- Ref 4 European Court of Justice (ECJ) April 2018, Case C-323/17, People Over Wind, Peter Sweetman v Coillte Teoranta. Judgement of the Court (Seventh Chamber). Available at: <http://curia.europa.eu/juris/document/document.jsf?jsessionid=9ea7d2dc30dd4a0be052f3b04c09819ffb09262871e7.e34KaxiLc3qMb40Rch0SaxyNbxn0?text=&docid=200970&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=636343>. Accessed May 17 2018.
- Ref 5 CAPORN, S., FIELD, C., PAYNE, R., DISE, N., BRITTON, A., EMMETT, B., JONES, L., PHOENIX, G., S POWER, S., SHEPPARD, L. & STEVENS, C. 2016. assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210.
- Ref 6 Air Pollution Information Service, 2018. *Site Relevant Critical Loads, River Derwent SAC*. [online] Available at <http://www.apis.ac.uk/srcl/select-a-feature?site=UK0030253&SiteType=SAC&submit=Next>
- Ref 7 Air Pollution Information Service, 2018. *Site Relevant Critical Loads, Lower Derwent Valley SPA*. [online] Available at <http://www.apis.ac.uk/srcl/select-a-feature?site=UK9006092&SiteType=SPA&submit=Next>. Accessed May 4 2018
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- Ref 29 IAQM (2015). Position Statement: Mitigation of Development Air Quality Impacts.



# COMPULSORY ACQUISITION

# CA – APPENDIX A – YORKSHIRE WATER CORRESPONDENCE



Johnson, Samuel

---

From: Stephanie Walden <stephanie.walden@yorkshirewater.co.uk>  
Sent: 15 October 2018 16:31  
To: SWEETING Abigail  
Subject: [EXTERNAL] RE: Drax Repower DCO - Protective Provisions for Yorkshire Water [PM-AC.FID3169416]

Abigail- subject to further detail being provided at the appropriate time regarding construction of cables/the gas pipeline YW is satisfied with the draft Protective Provisions.

The suggested construction techniques you previously provided ie. “ *a trenchless technique which would most likely be a Horizontal Direction Drill (HDD) or an Auger Bore. Typically we would maintain 600mm from all buried assets such as cables and other pipelines, also we would be at least 2m below the road surface. Should further depth be required by YW due to the buried depth of a specific service then it should be possible to achieve this as part of the HDD or Auger*”

subject to detail design are in principle appropriate for both the water mains laid in highway and the rising main (a sewer) within the fields.

If it is helpful below are some general guidelines and a diagram with respect to construction of other services close to water waste water infrastructure.

Please let me know if you require further information.

Kind regards.

Stephanie

Stephanie Walden  
Land Use Planning Manager  
Yorkshire Water  
Tel: 01274 692349  
Email: [stephanie.walden@yorkshirewater.co.uk](mailto:stephanie.walden@yorkshirewater.co.uk)

To enable future repair works to be carried out, a minimum clearance of 1000mm must be maintained where any works or services are installed adjacent to YWS apparatus and a minimum clearance of 150mm where any works or services cross the apparatus.

For a pressurised system ie pumped water main or rising main

To enable future repair works to be carried out without hindrance; any pipe, cable, duct, etc. installed parallel to a water main or service pipe should not be installed directly over or within 300mm of a water main or service pipe or 1000mm of a waste water asset. Where a pipe, cable, duct, etc. crosses a main or service it should preferably cross perpendicular or at an angle of no less than 45° and with a minimum clearance of 150mm. These requirements apply to activities within an existing highway and are relevant to the installation of pipes, cables, ducts, etc. up to and including 250mm in diameter (*see illustration below*). Necessary protection measures for installations greater than 250mm in diameter and/or in private land will need to be agreed on an individual basis. Installations within a new development site must comply with the National Joint Utilities Group publication Volume 2: NJUG Guidelines On The Positioning Of Underground Utilities Apparatus For New Development Sites.

All excavation works near to YW apparatus should be by hand digging only.

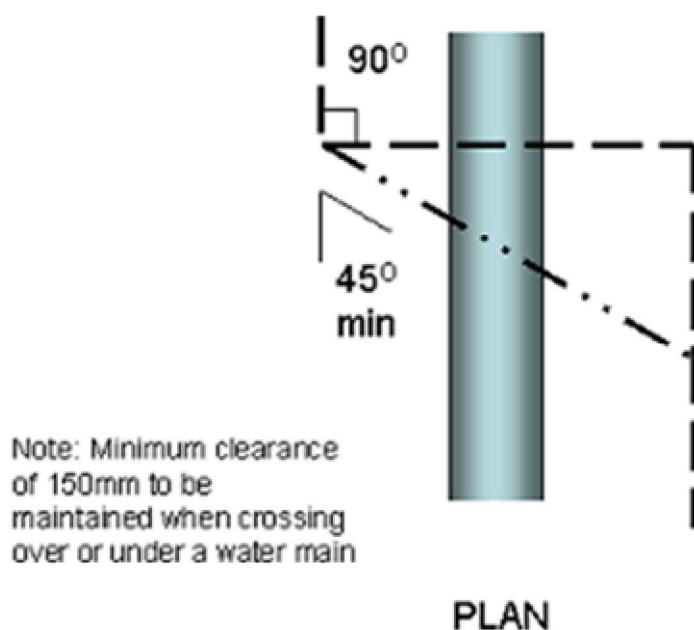
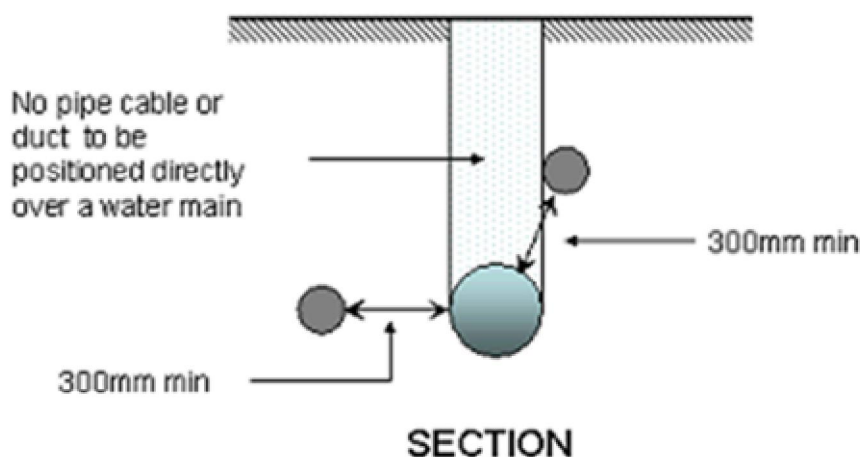
Backfilling with a suitable material to a minimum 300mm above YW apparatus is required.

Adequate support must be provided where any works pass under YW apparatus.

*Under no circumstances* should thrust boring or similar trenchless techniques commence until the actual position of the Company's mains/services along the proposed route have been confirmed by trial holes.

A developer will be held responsible for any damage or loss to YWS apparatus during and after completion of work, caused by yourselves, your servant or agent. Any damage caused or observed to YWS plant or apparatus should be immediately reported to YWS. Should YW incur any costs as a result of non-compliance with the above, all costs will be rechargeable in full."

## Section 5 - Protection of Mains and Services.



---

From: SWEETING Abigail <Abigail.Sweeting@pinsentmasons.com>  
Sent: 10 October 2018 20:24  
To: Stephanie Walden <stephanie.walden@yorkshirewater.co.uk>  
Cc: BRODRICK Claire <Claire.Brodrick@pinsentmasons.com>; COLEMAN Alexis  
<Alexis.Coleman@pinsentmasons.com>; GRIFFITHS Richard <Richard.Griffiths@pinsentmasons.com>  
Subject: Drax Repower DCO - Protective Provisions for Yorkshire Water [PM-AC.FID3169416]

EXTERNAL SOURCE - THINK BEFORE YOU CLICK

Hi Stephanie

I hope you are well.

Further to our discussions on the above, I wondered if you are in a position to confirm Yorkshire Water's position on the draft protective provisions provided for your review? I note you were liaising with your engineers on the depth of the gas pipeline and the construction techniques – has this now been resolved?

Would it be possible to please hear back from you by the 16 October as we have an Examination shortly thereafter and would like to set out the position with Yorkshire Water at this deadline. If we do not hear from you further, we will assume that Yorkshire Water are happy to rely on the protective provisions for the protection of electricity, gas, water and sewerage undertakers, as attached again for ease of reference.

Kind regards

Abigail

Abigail Sweeting  
Solicitor  
for Pinsent Masons LLP

D: [+44 113 294 5279](tel:+441132945279) M: [+44 7342 086 485](tel:+447342086485) I: [825279](tel:+442072945279)

[Abigail.Sweeting@pinsentmasons.com](mailto:Abigail.Sweeting@pinsentmasons.com)  
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# **CA – APPENDIX B – BT/OPEN REACH CORRESPONDENCE**

Johnson, Samuel

---

From: steve.roebuck@openreach.co.uk  
Sent: 17 October 2018 16:46  
To: SWEETING Abigail  
Subject: [EXTERNAL] Drax Power Limited - DCO - Repowering of up to two existing coal powered generating units.

Abigail,

thank you for your letter dated 25 September 2018 regarding the provisions in the application for the Development Consent Order, for the protection of Openreach apparatus. Openreach would not seek any amendment to the protective provisions.

However, it may be necessary for Openreach to carry out diversionary works to facilitate your proposals. Any necessary measures would need to be settled in advance and I would need to see your detailed proposals to assess this. Openreach will seek reimbursement of its expenses under the Electronic Communications Code/Communications ACT 2003 or NRSWA1991.

Regards

Steve Roebuck  
Repayment Project Engineer  
Openreach  
Telephone: 01904 657662  
Mobile: 07483 154204  
Web: [www.openreach.co.uk](http://www.openreach.co.uk)

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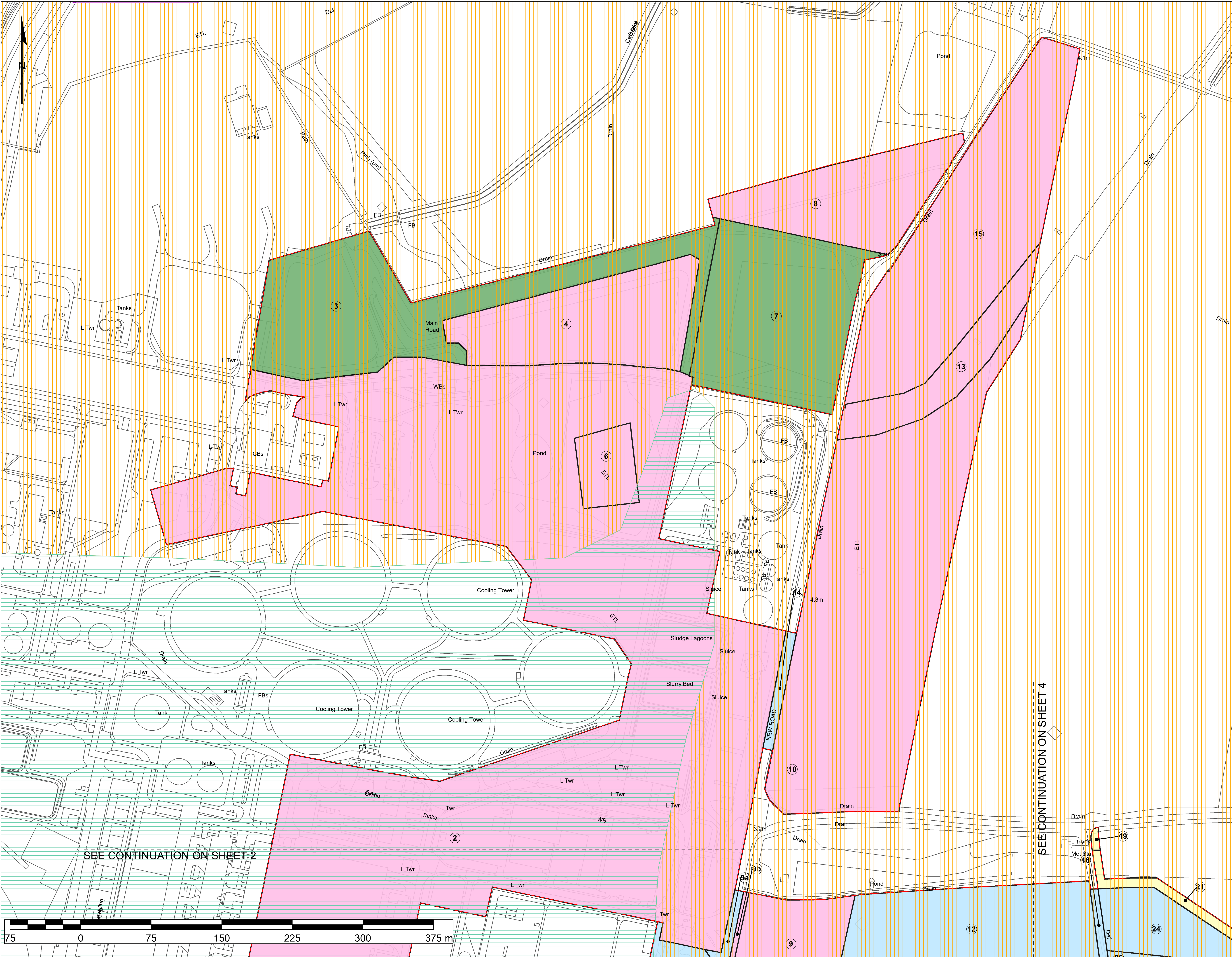
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# CONSTRUCTION AND OPERATION EFFECTS

# **CO – APPENDIX A – LAND THAT IS REQUIRED PERMANENTLY AND TEMPORARILY**



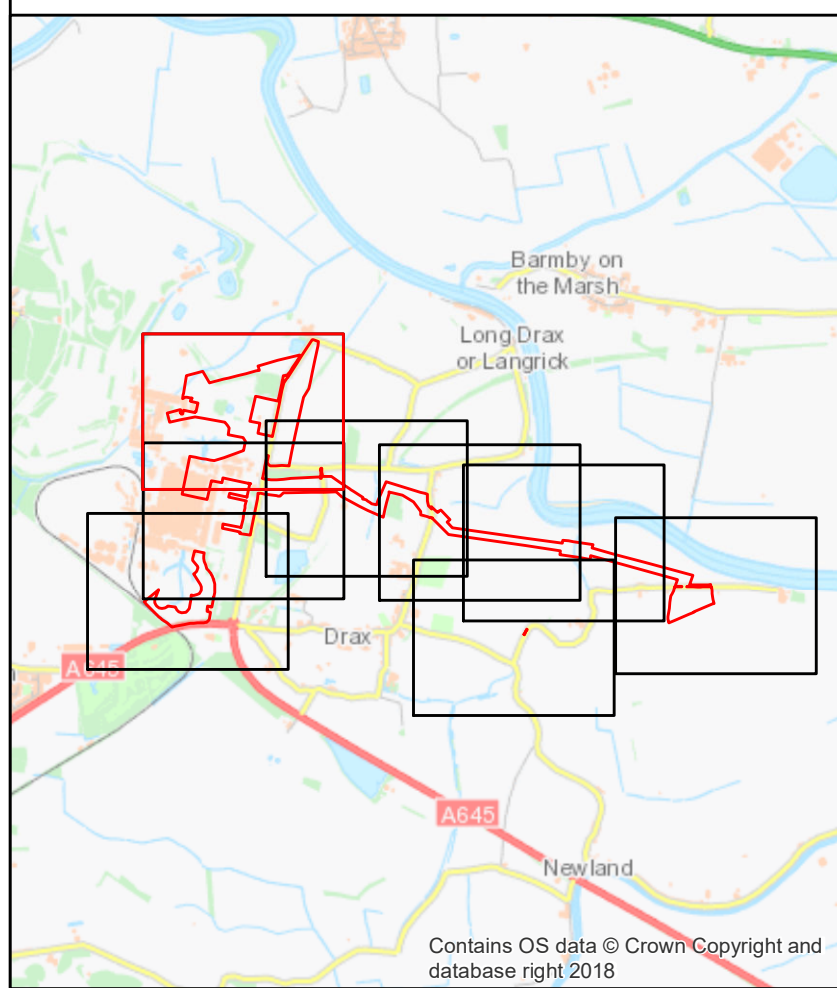


# The Drax Power (Generating Stations) Order Land Plans Sheet 2

- Order limits - the area within which the authorised development may be carried out
- Order land - freehold and leasehold to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
- Order land - new rights to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
- Order land - land in relation to which it is proposed to permanently extinguish easements, servitudes and other private rights
- Order land - temporary use of land and in relation to which it is proposed to suspend easements, servitudes and other private rights

- ## Agricultural Land Classification
- Grade 2
  - Grade 3
  - Non Agricultural

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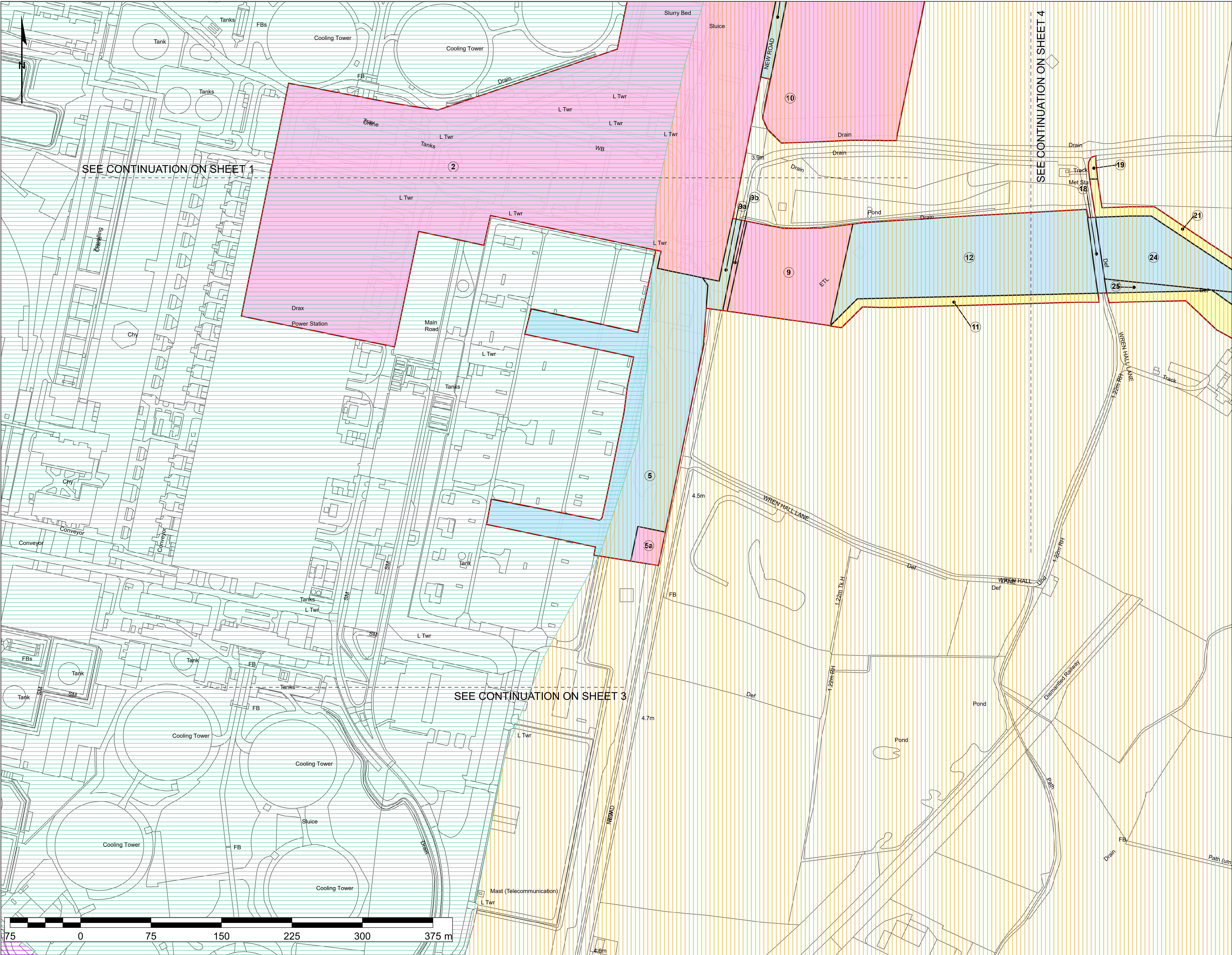
PROJECT: The Drax Power (Generating Stations) Order

TITLE: Appendix CO-A Agricultural Land Required Temporarily and Permanently Sheet 1 of 8

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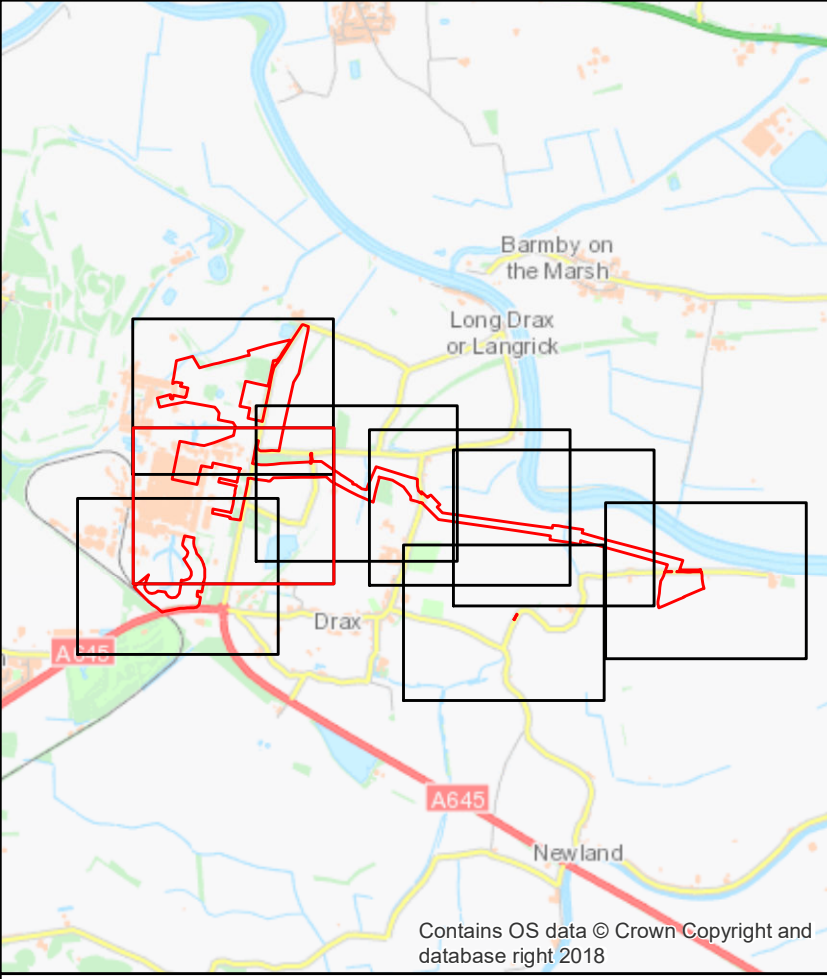
**The Drax Power (Generating Stations) Order  
Land Plans  
Sheet 3**

- Order limits - the area within which the authorised development may be carried out
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**Agricultural Land Classification**

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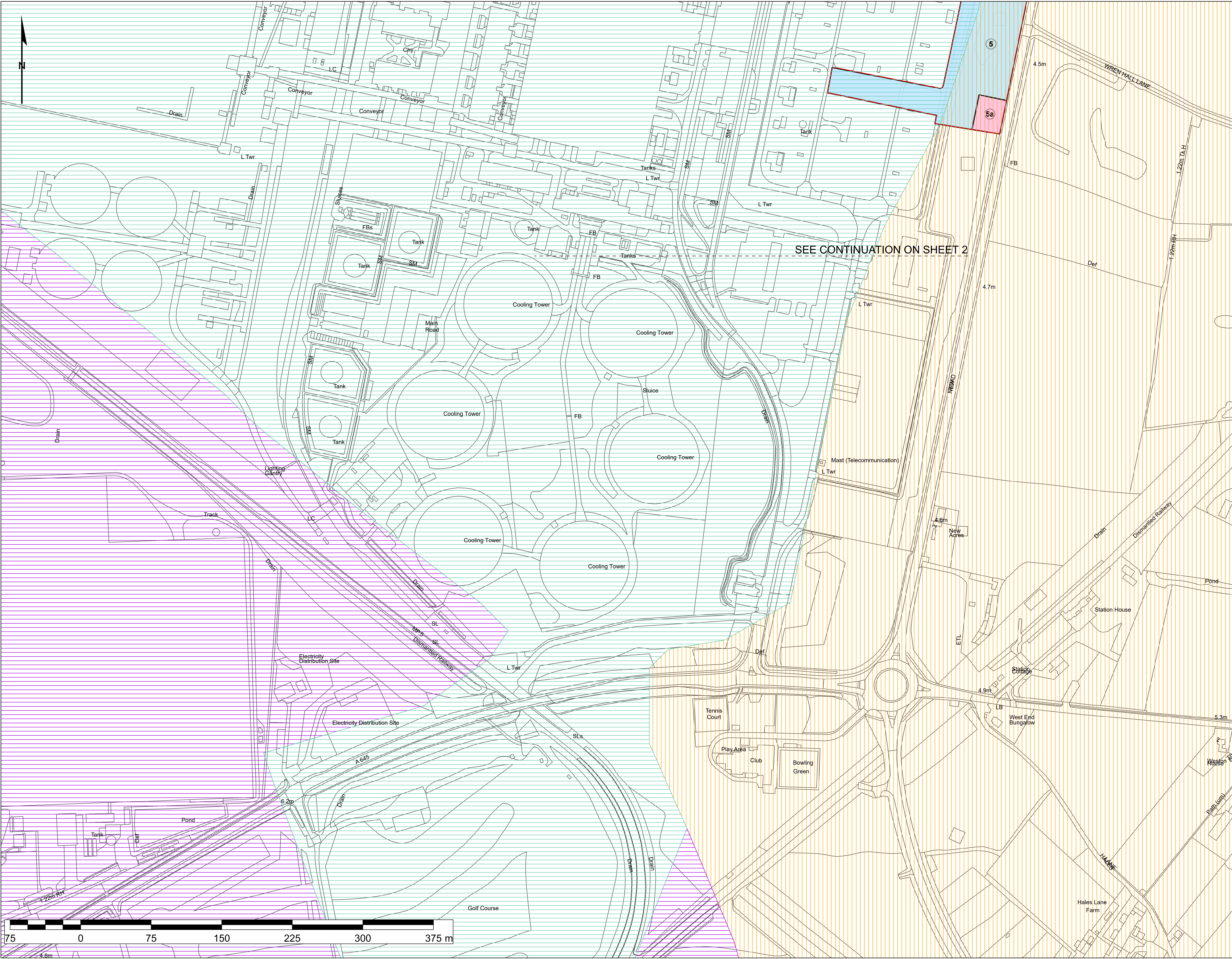
The Drax Power  
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Sheet 2 of 8

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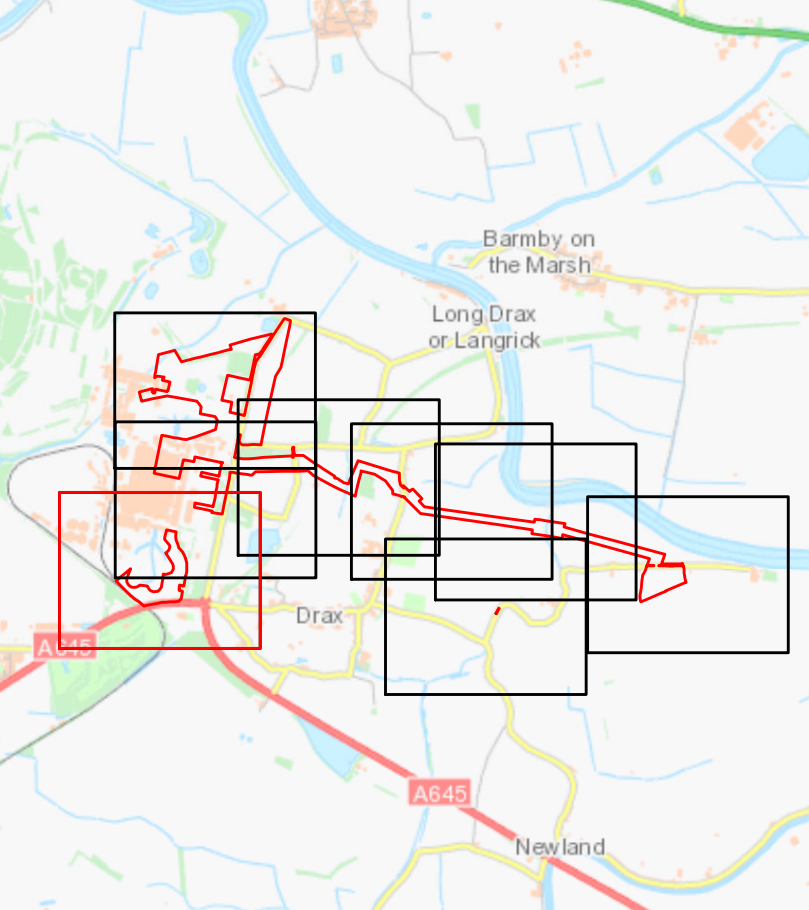


The Drax Power (Generating Stations) Order  
Land Plans  
Sheet 4

- Order limits - the area within which the authorised development may be carried out
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- Agricultural Land Classification
- Grade 2
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  - Non Agricultural

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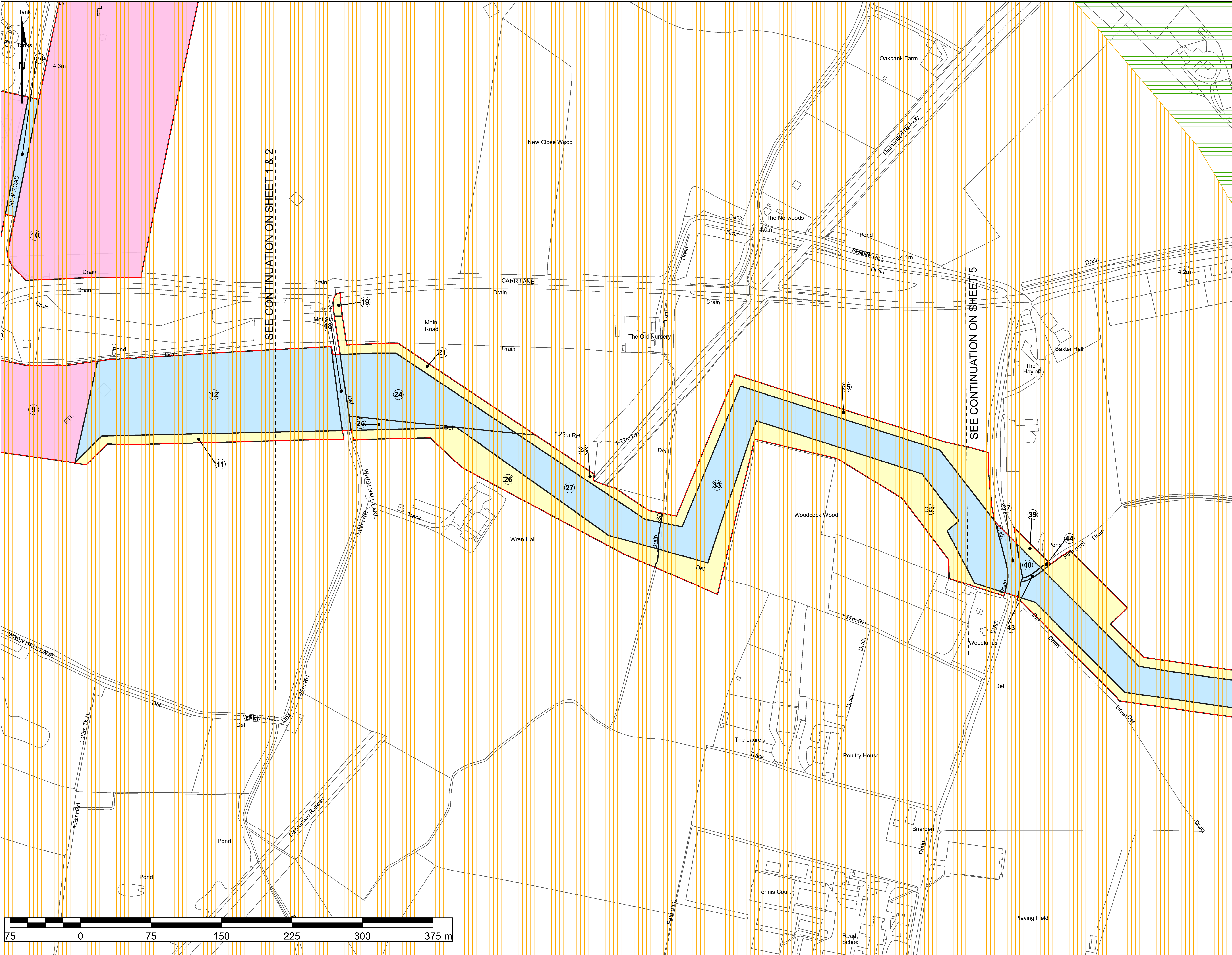
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TITLE: Appendix CO-A Agricultural Land Required Temporarily and Permanently Sheet 3 of 8

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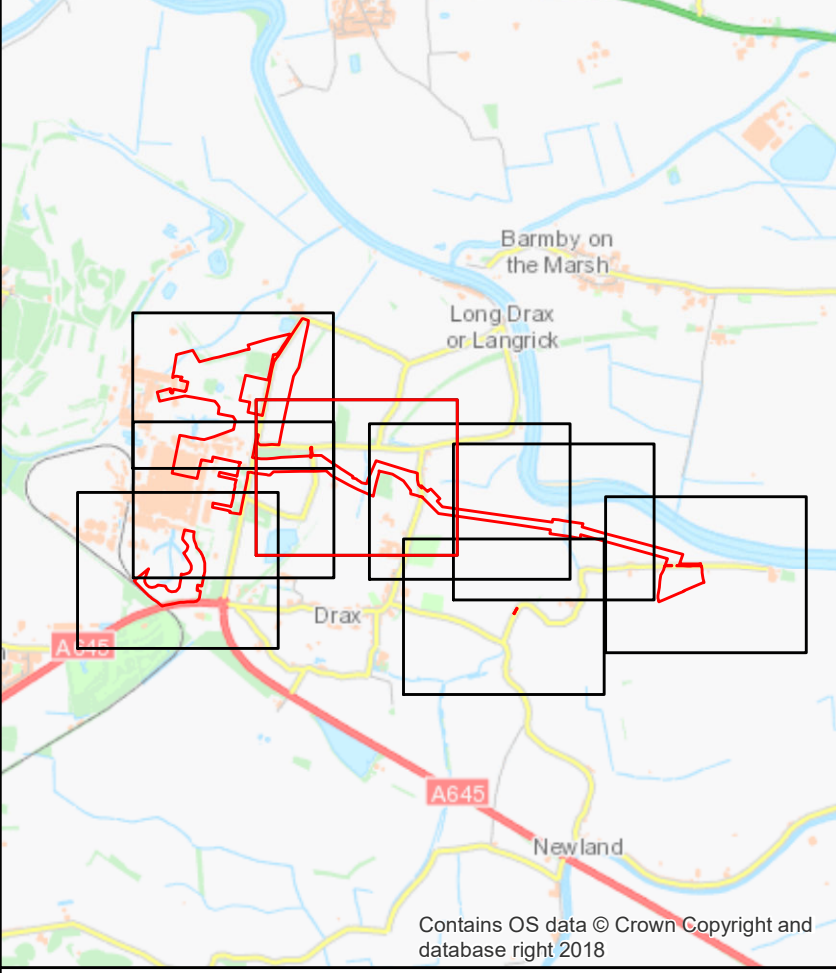
**The Drax Power (Generating Stations) Order  
Land Plans  
Sheet 5**

- Order limits - the area within which the authorised development may be carried out
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**Agricultural Land Classification**

- Grade 1
- Grade 2

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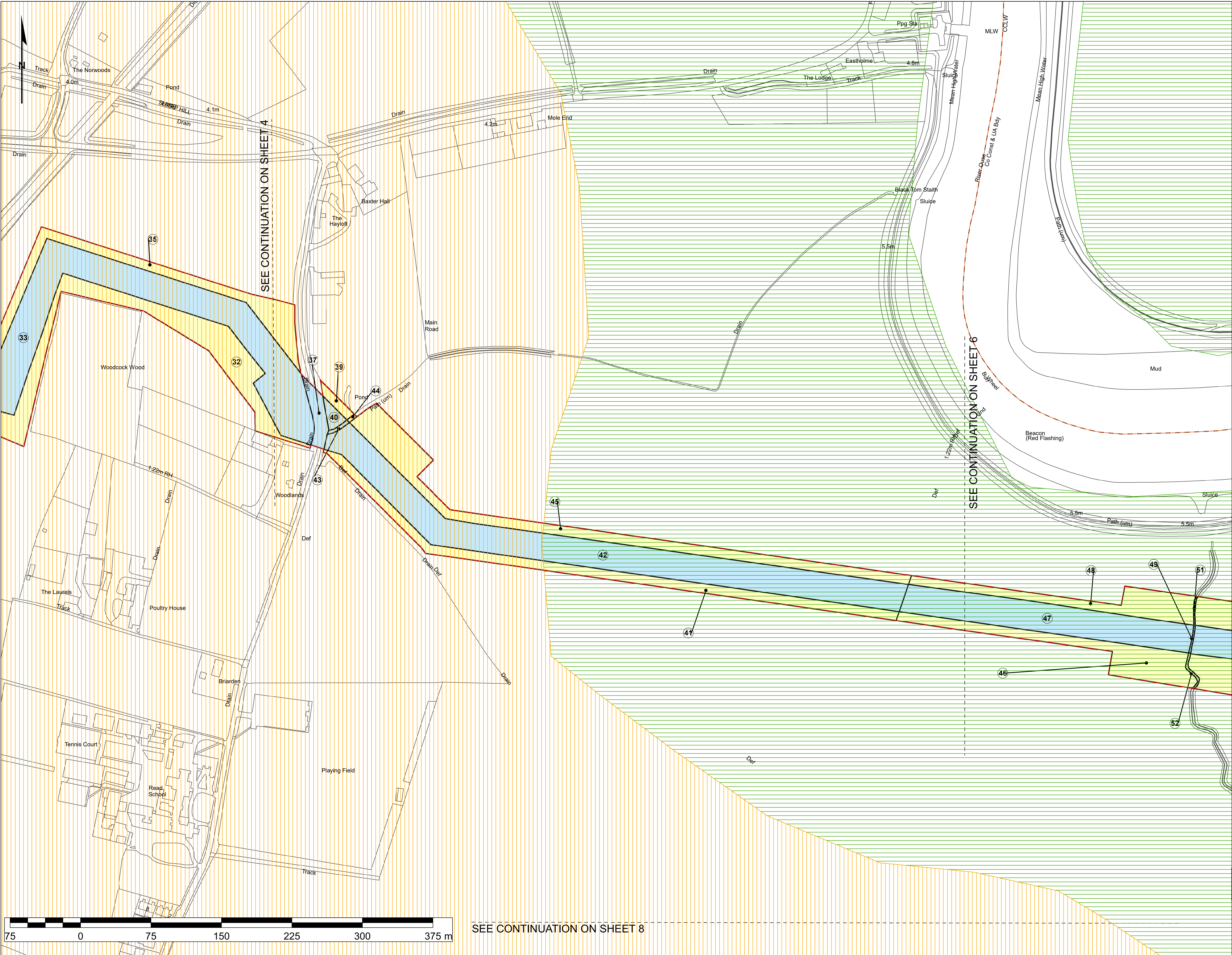


PROJECT:  
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(Generating Stations) Order

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Appendix CO-A Agricultural Land Required  
Temporarily and Permanently  
Sheet 4 of 8

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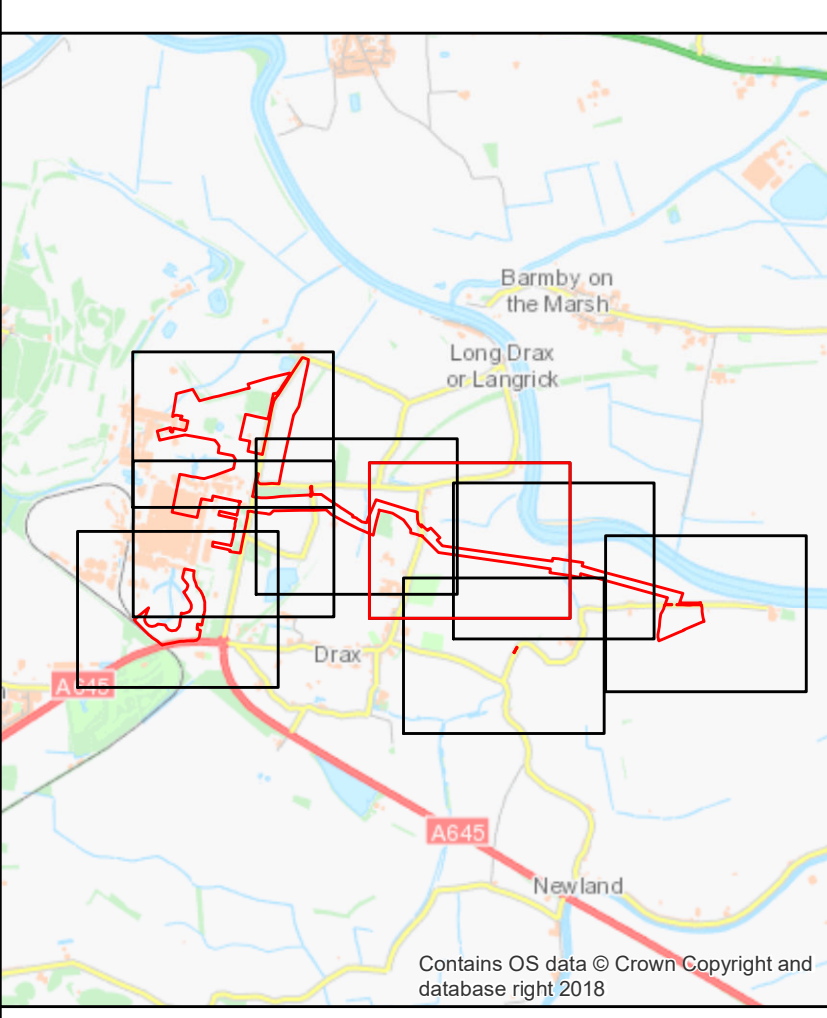


**The Drax Power (Generating Stations) Order  
Land Plans  
Sheet 6**

- Order limits - the area within which the authorised development may be carried out
- Order land - freehold and leasehold to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
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- Order land - land in relation to which it is proposed to permanently extinguish easements, servitudes and other private rights
- Order land - temporary use of land and in relation to which it is proposed to suspend easements, servitudes and other private rights

- District Boundary
- Agricultural Land Classification
  - Grade 1
  - Grade 2

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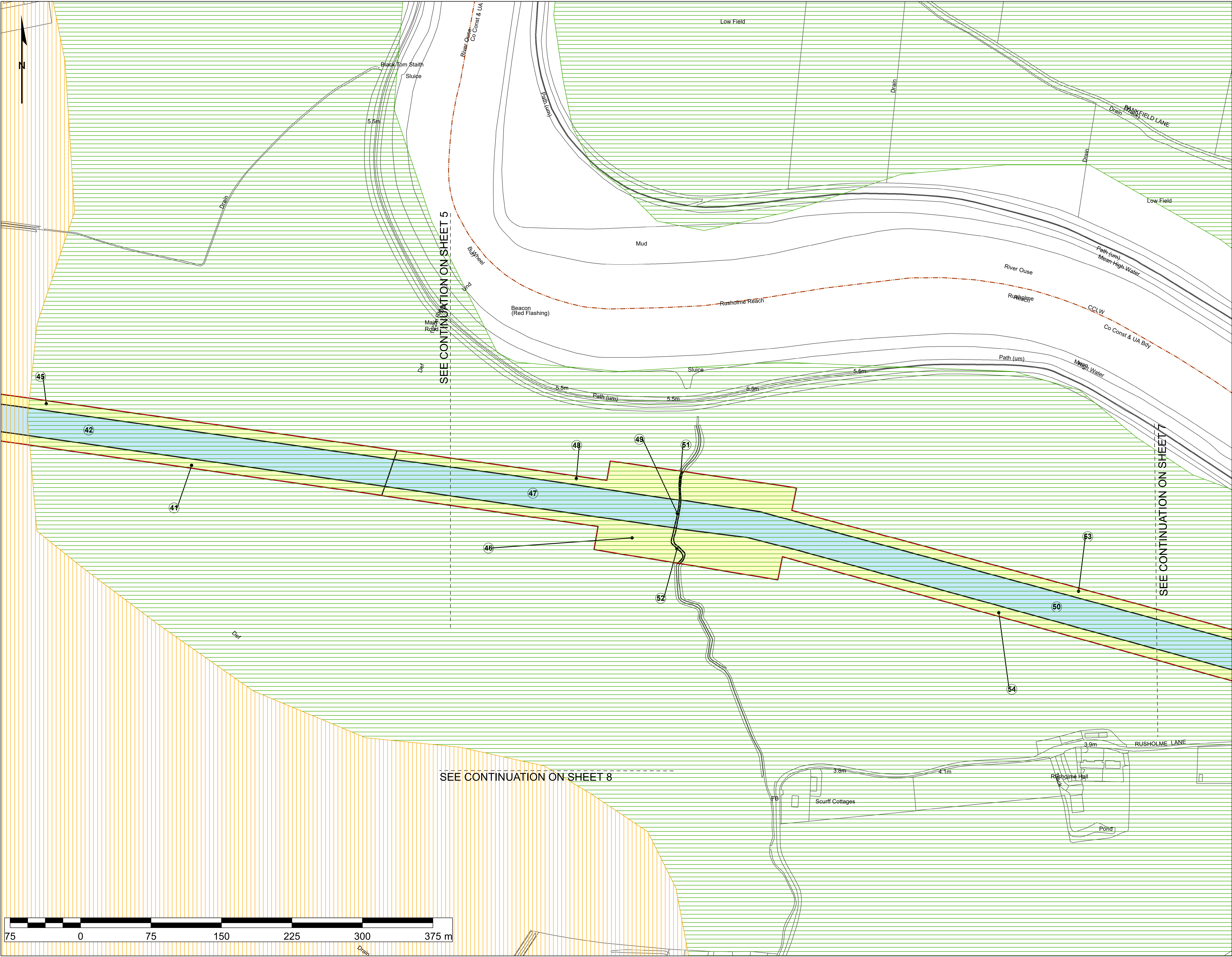
PROJECT:  
The Drax Power  
(Generating Stations) Order

TITLE:  
Appendix CO-A Agricultural Land Required  
Temporarily and Permanently  
Sheet 5 of 8

|                        |                    |                |
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| PROJECT NO<br>70037047 | DESIGNED<br>TB     | DRAWN<br>SS    |
| DRAWING NO             | DATE<br>19/10/2018 | REV NO         |

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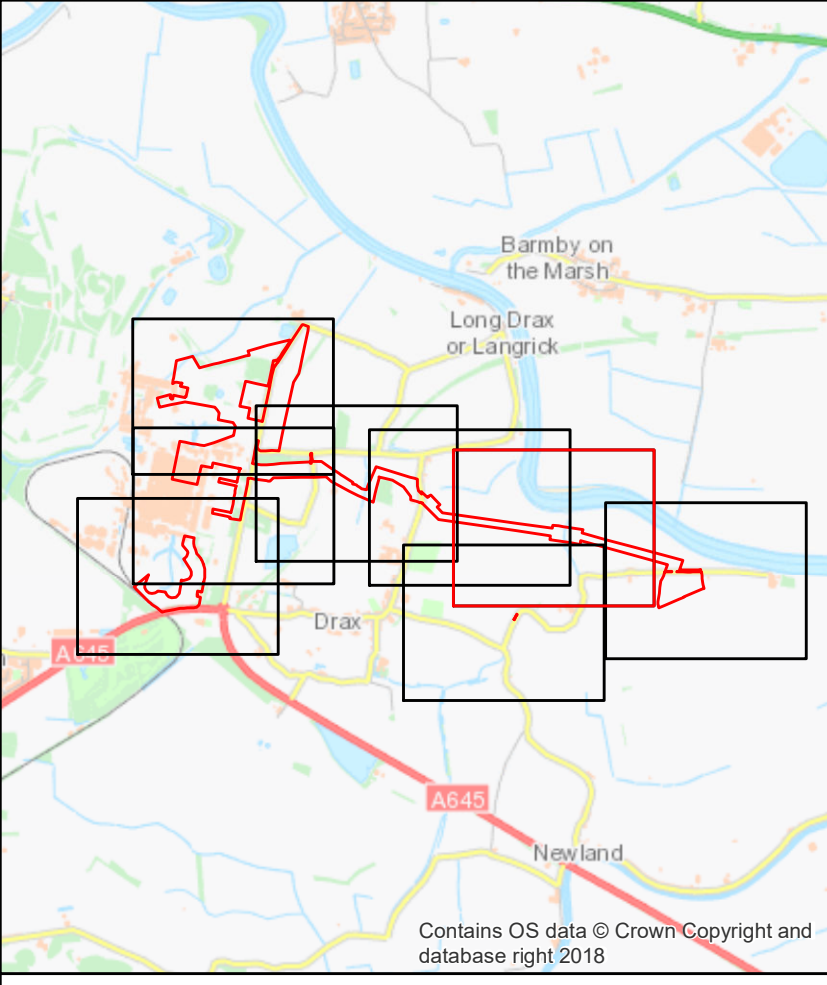


**The Drax Power (Generating Stations) Order  
Land Plans  
Sheet 7**

- Order limits - the area within which the authorised development may be carried out
- Order land - freehold and leasehold to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
- Order land - new rights to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
- Order land - land in relation to which it is proposed to permanently extinguish easements, servitudes and other private rights
- Order land - temporary use of land and in relation to which it is proposed to suspend easements, servitudes and other private rights

- District Boundary
- Agricultural Land Classification**
- Grade 1
  - Grade 2

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| REV | DATE | BY | DESCRIPTION | CHK | APP |
|-----|------|----|-------------|-----|-----|
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DRAWING STATUS: SUBMISSION FOR APPROVAL

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T: +44 (0) 1483 528 400, F: +44 (0) 1483 528 989  
wsp.com

CLIENT

PROJECT:

The Drax Power  
(Generating Stations) Order

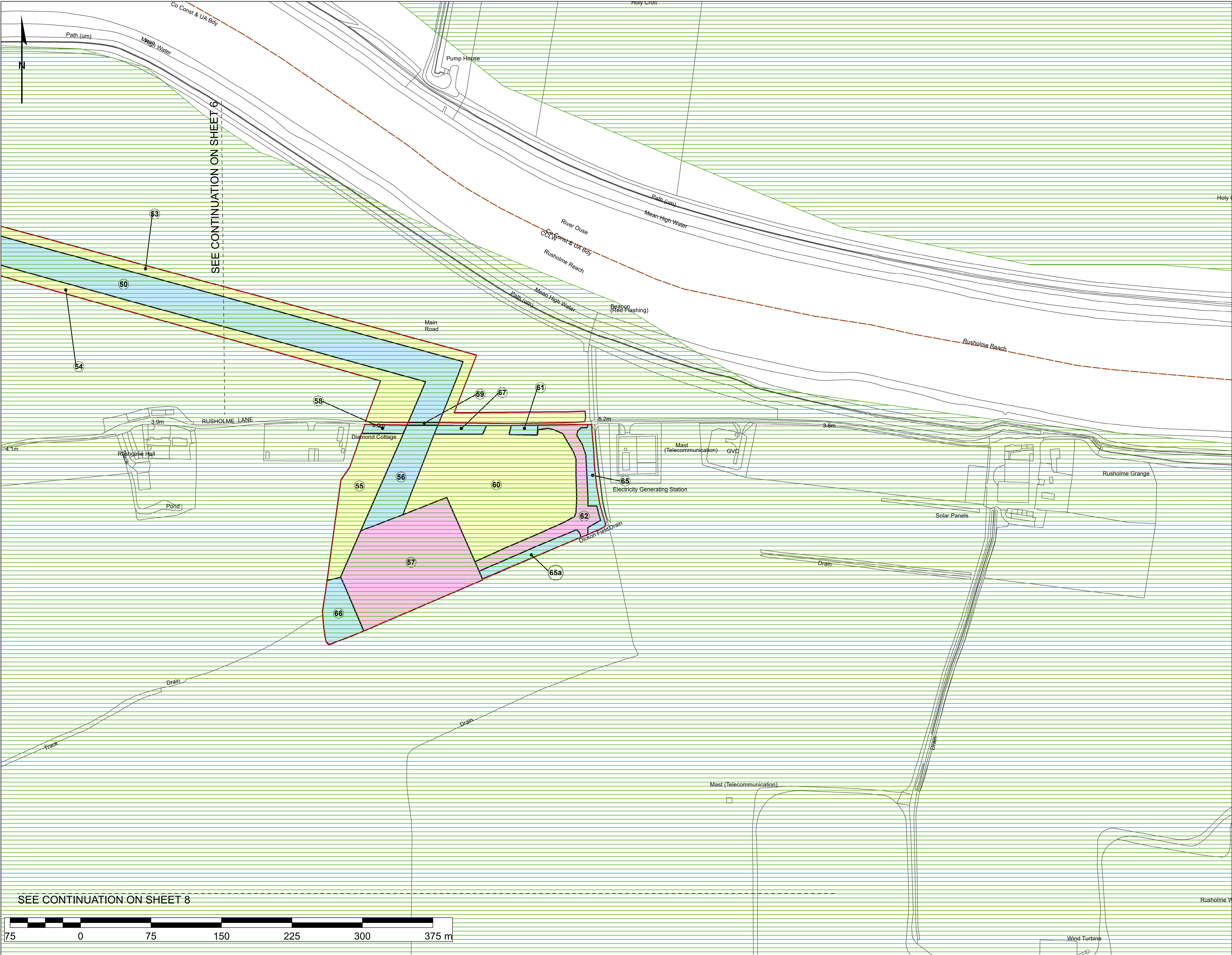
TITLE:

Appendix CO-A Agricultural Land Required  
Temporarily and Permanently  
Sheet 6 of 8

|                     |                 |             |
|---------------------|-----------------|-------------|
| SCALE AS 1:1,250    | CHECKED SO      | APPROVED SW |
| PROJECT NO 70037047 | DESIGNED TB     | DRAWN SS    |
| DRAWING NO          | DATE 19/10/2018 | REV NO      |

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**The Drax Power (Generating Stations) Order Land Plans**  
**Sheet 8**

Order limits - the area within which the authorised development may be carried out

Order land - freehold and leasehold to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights

Order land - new rights to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights

Order land - land in relation to which it is proposed to permanently extinguish easements, servitudes and other private rights

Order land - temporary use of land and in relation to which it is proposed to suspend easements, servitudes and other private rights

District Boundary

**Agricultural Land Classification**

Grade 1

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Westbrook Mills, Borough Road, Godalming, GU7 2AZ, UK  
T: +44 (0) 1483 528 400, F: +44 (0) 1483 528 888  
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CLIENT: drax

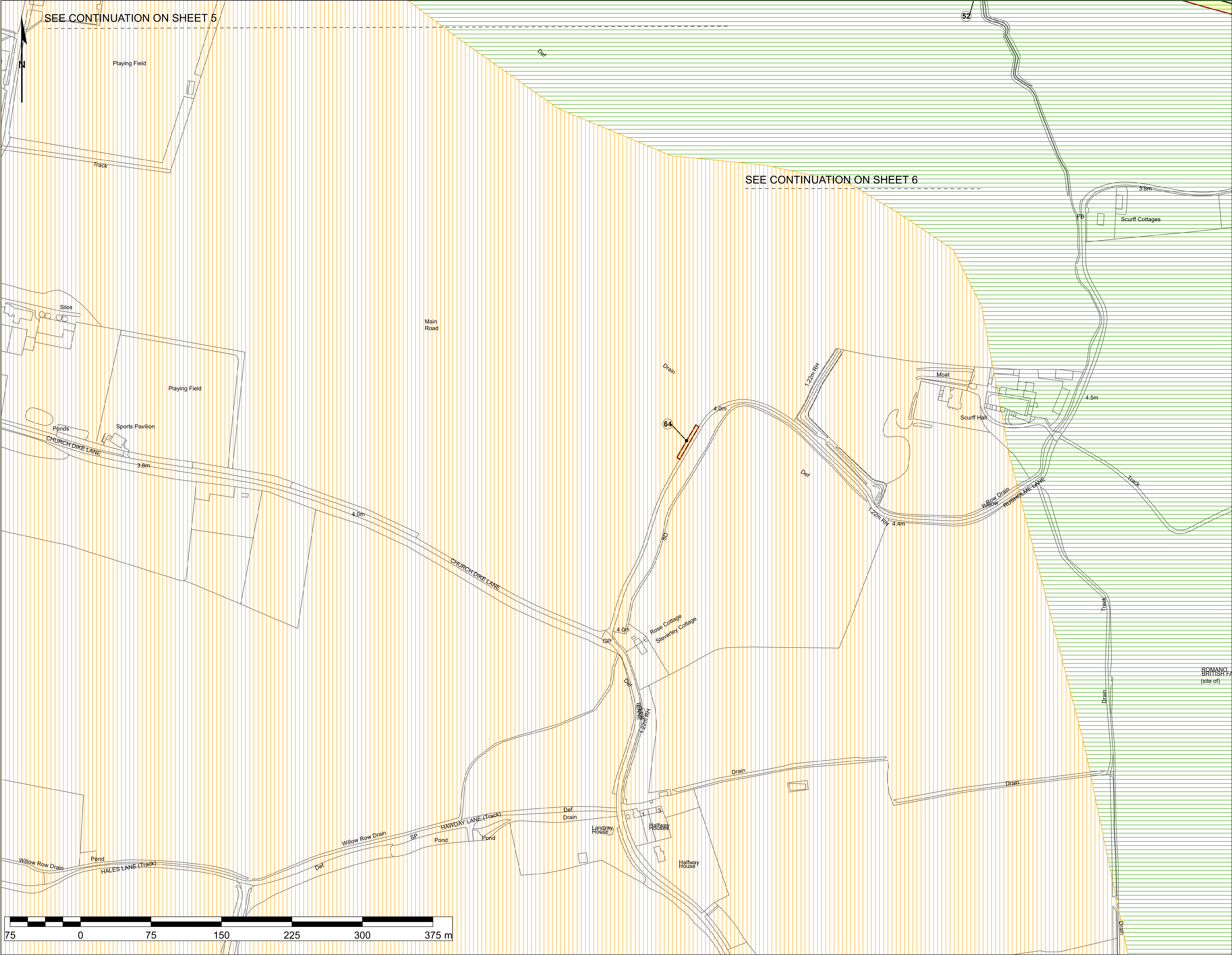
PROJECT: The Drax Power (Generating Stations) Order

TITLE: Appendix CO-A Agricultural Land Required Temporarily and Permanently Sheet 7 of 8

| SCALE: AS 1:1,250    | CHECKED: SO      | APPROVED: SW |
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| DRAWING NO:          | DATE: 19/10/2018 | REVNO:       |

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SEE CONTINUATION ON SHEET 5

SEE CONTINUATION ON SHEET 6

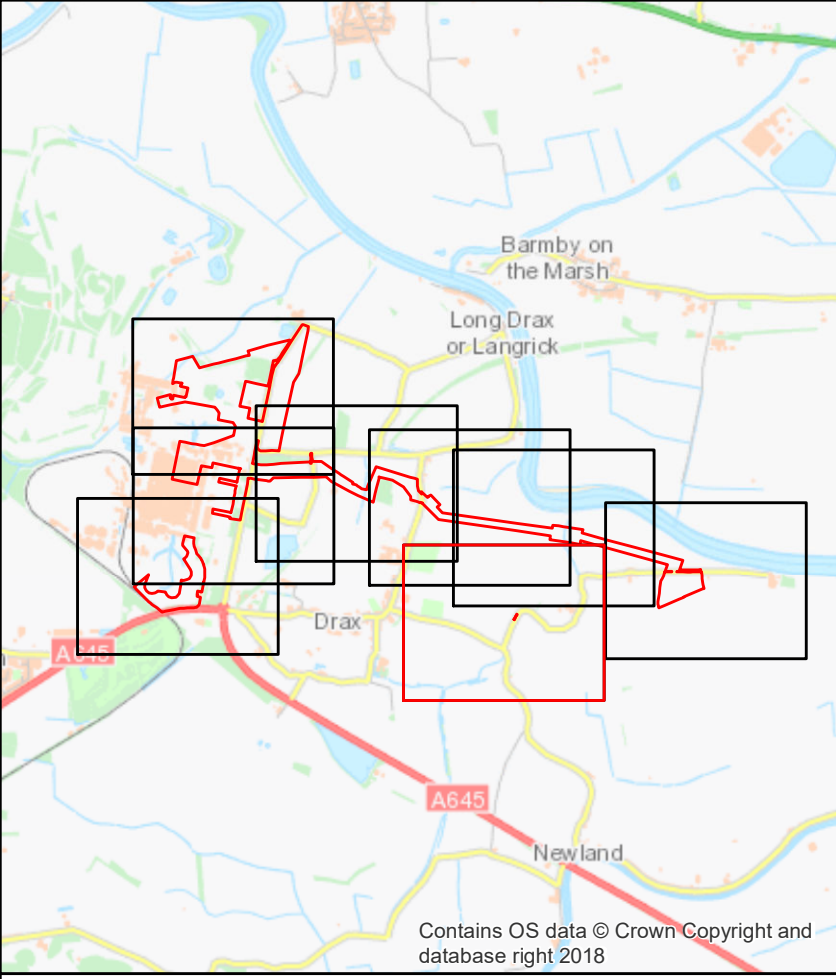
**The Drax Power (Generating Stations) Order  
Land Plans  
Sheet 9**

- Order limits - the area within which the authorised development may be carried out
- Order land - freehold and leasehold to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
- Order land - new rights to be compulsorily acquired and in relation to which it is proposed to extinguish easements, servitudes and other private rights
- Order land - land in relation to which it is proposed to permanently extinguish easements, servitudes and other private rights
- Order land - temporary use of land and in relation to which it is proposed to suspend easements, servitudes and other private rights

**Agricultural Land Classification**

- Grade 1
- Grade 2

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Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(i)

ROMANO-BRITISH FZ (site of)

| REV | DATE | BY | DESCRIPTION | CHK | APP |
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PROJECT: The Drax Power (Generating Stations) Order

TITLE: Appendix CO-A Agricultural Land Required Temporarily and Permanently Sheet 8 of 8

|                      |                  |              |
|----------------------|------------------|--------------|
| SCALE: AS SHOWN      | CHECKED: SO      | APPROVED: SW |
| PROJECT NO: 70037047 | DESIGNED: TB     | DRAWN: SS    |
| DRAWING NO:          | DATE: 19/10/2018 | REV NO:      |



# FLOOD RISK AND WATER RESOURCES

## **FW – APPENDIX A – EA CORRESPONDENCE**

Louise Markose  
WSP

via email:  
louise.markose@wsp.com

**Our ref:** RA/2018/138541/01  
**Alt ref:** ENVPAC/1/YOR/00012  
**Your ref:** 70037047

**Date:** 10 May 2018

Dear Louise

**Drax Power Station, Selby, YO8 8PH.**

**Drax Repower Project - Flood Risk Assessment Review.**

Thank you for submitting your Flood Risk Assessment (FRA) for our review and comment. We have reviewed:

- DRAX Re-Power Project, Land at, and in the vicinity of, Drax Power Station, near Selby, North Yorkshire, Environmental Statement – Flood Risk Assessment, Document Reference: 70037047, 24/04/2018.

Please note that the FRA and the mitigation measures detailed within it are reliant on the results of flood modelling that has not yet been found to be fit for purpose. We have provided comments on the model which need to be addressed. We are currently reviewing your response to our comments, which includes further modelling work. The contents of the FRA have been taken at face value and these comments are provided from the perspective that the model is considered fit for purpose. On the basis that it may not be found fit for purpose, these comments and the views represented are subject to change.

Assuming the model is found to be fit for purpose, we consider the FRA to be acceptable. If this FRA was submitted in support of the Development Consent Order (DCO) application we would not be likely to object to the DCO and would likely recommend that specific requirements be applied to the DCO with respect to the FRA.

I hope that these comments are useful to you. If I can be of any further assistance, please don't hesitate to contact me.

Yours sincerely

**Nick Beyer**  
**Planning Specialist**

Telephone: 0203 025 5581  
E-mail: [sp-yorkshire@environment-agency.gov.uk](mailto:sp-yorkshire@environment-agency.gov.uk)  
Address: Lateral, 8 City Walk, Leeds, LS11 9AT

Szostak, Elzbieta

---

From: Beyer, Nick <nick.beyer@environment-agency.gov.uk>  
Sent: 22 May 2018 15:43  
To: Jim Doyle; Szostak, Elzbieta; Philip Hastings  
Cc: Markose, Louise  
Subject: Drax model review - second response following additional work  
Attachments: 2018s0387\_03\_Drax\_Review\_Document (v2 22 May 2018).xlsx

Dear All,

Please find attached our revised model review following the sensitivity analysis and other additional clarifications that you provided.

In summary, we now consider the model to be fit for purpose and suitable for the basis of a site specific flood risk assessment. As such our comments on the FRA apply, apart from the caveat regarding the model.

If you would like to discuss this further, please feel free to get in touch.

Kind regards

Nick

---

*Nick Beyer*  
**Yorkshire Sustainable Places | Environment Agency**  
**☎ 0203 025 5581**  
**Lateral, 8 City Walk, Leeds, LS11 9AT**

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# **FW – APPENDIX B – SELBY AREA IDB CORRESPONDENCE**

From: Paul Jones <Paul.Jones@shiregroup-idbs.gov.uk>  
Sent: 08 February 2018 10:42  
To: Price, Jon  
Cc: Markose, Louise; Szostak, Elzbieta; Farley, Isabelle; info@selbyareaidb.org.uk; lan.Chapman@selbyareaidb.org.uk  
Subject: RE: Drax Repower Flood Risk Consultation

Jon,

Thank you very much; a very accurate summary.

Kind regards,

**For and on behalf of the Shire Group of Internal Drainage Boards,**

**Paul Jones** BSc (Hons) MSc (Eng) GMICE  
*Engineer to the Board*  
Lead Water Level Management Engineer

---

From: Price, Jon [mailto:Jon.Price@wsp.com]  
Sent: 07 February 2018 14:19  
To: Paul Jones <Paul.Jones@shiregroup-idbs.gov.uk>  
Cc: Markose, Louise <louise.markose@wsp.com>; Szostak, Elzbieta <Elzbieta.Szostak@wsp.com>; Farley, Isabelle <Isabelle.Farley@wsp.com>; info@selbyareaidb.org.uk; lan.Chapman@selbyareaidb.org.uk  
Subject: RE: Drax Repower Flood Risk Consultation

Paul

Thank you for taking the time to chat with me yesterday afternoon. It was a very useful discussion and I think we covered all of the points raised below. As a record of our discussion, I have set out below a summary of each of the points discussed. Please feel free to correct me if you believe I have misinterpreted any aspect or there is anything further you wish to add.

1. Installation of gas pipeline across watercourses. The IDB has no preference for the method of installation of the pipelines crossing beneath watercourses. The pipes should be installed with a minimum clearance below the bed of the watercourse of 1m. Where pipes are installed by open cut trenching, the banks of the watercourse are to be reinstated to the same line and slope, and grass seeded as soon as practicable after installation. The use of a bio-degradable mat (or similar) may be necessary in some installations to hold the grass seed and aid the re-growth of vegetation. The position of each crossing is to be marked by marker posts, one on each bank. The IDB noted groundwater levels are frequently high in this area and the applicant will need to consider buoyancy of the pipeline and associated buried apparatus.
2. Discharge rates. Surface water runoff from any additional new impermeable areas shall be limited to the pre-development greenfield runoff rate or 1.4 l/s/ha, whichever is the least.
3. New discharge points. Existing discharge points should be used wherever possible. The fewer discharge points the better. Bear in mind any new discharge will a consent.
4. New outfalls. Where required, new outfalls should be set back from the bank and not protrude into the watercourse. The velocity of the discharge should be considered and suitable protection provided to prevent erosion of the bank, where necessary. Low velocity discharges do not automatically need to be angled in the direction of flow in the watercourse. A marker post should be provided near a new outfall to highlight the presence of the outfall for maintenance operatives.
5. Pollution control measures. The applicant should comply with general pollution prevention guidelines.
6. Water quality monitoring. No permanent water quality monitoring is required. Temporary pumping of groundwater in excavations will require a separate consent. It will be necessary for the applicant to monitor

the quantity of temporary pumping as a payment is likely to be required per cubic metre of pumped water as part of the temporary consent. Note also the new EA abstraction regulations now consider the temporary pumping of groundwater to be an abstraction, and a separate abstraction consent will be required from the EA.

7. Discharge of surplus process water. No special restrictions if applicant is following general PPGs.
8. Sequential Test. The Sequential Test is not really a matter for the IDB. The proposed re-development is on an existing site and could not be located anywhere else.
9. Study area. The proposed study areas are acceptable. As indicated in 1 above, groundwater levels are an issue in the area and buoyancy of any buried structures or pipelines will need to be considered.
10. Future monitoring and sampling. There are no requirements for permanent monitoring and sampling. As indicated in 6 above, flow measurement will be required for any temporary pumping of groundwater.
11. Historic flood records. The IDB does not have any historic flood records. The best available flood record information is held by the EA. The Lendall Pumping Station is operated and maintained by the IDB. The pumping station has recently been fitted with water level telemetry but that will only provide an indication of water levels in the watercourse at the pumping station.
12. Water quality data. The IDB has no water quality data for ordinary watercourses.

Rusholme Lane. The Rusholme Lane Drain is also known as Willow Row Drain. Church Dike Lane is the approximate watershed for Rusholme Lane Drain, with land to north draining northwards to the River Ouse and land to the south draining southwards to the River Aire.

As a general comment, the IDB would wish to establish a general line of communication during construction and thereafter in order to be able to check on the progress of installed works and to ensure all parties are aware of each other's activities in the area.

I trust the above is correct.

Regards  
Jon

**Jonathan Price**  
Principal Civil Engineer, Water Engineering, Transport & Infrastructure



T+ 44 (0)117 9306319  
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---

From: Price, Jon  
Sent: 05 February 2018 11:25  
To: 'Paul Jones' <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>  
Cc: Markose, Louise <[louise.markose@wsp.com](mailto:louise.markose@wsp.com)>; Szostak, Elzbieta <[Elzbieta.Szostak@wsp.com](mailto:Elzbieta.Szostak@wsp.com)>; Farley, Isabelle <[Isabelle.Farley@wsp.com](mailto:Isabelle.Farley@wsp.com)>; [info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk); [Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)  
Subject: RE: Drax Repower Flood Risk Consultation

Paul



Thank you for your responses to date.

There are a number of points that we would like to discuss with the IDB, as set out in my colleague Isabel Farley's email below. I will endeavour to ring you tomorrow morning to discuss these. If afternoon would be more convenient, please could you suggest a time. In short, the outstanding issues are:

1. Will installation of the gas pipeline beneath existing ordinary watercourses need to be by directional drilling / thrustbore or will open cut trenching across the watercourse and reinstatement of the invert and channel sides be acceptable?
2. What will be the allowable discharge rates to ordinary watercourses for surface water runoff from any additional new impermeable areas?
3. Can the discharge(s) be to the nearest local watercourse or will you require discharges to be collected and discharged at a single location to a specific watercourse?
4. If new outfalls are required, do you have specific requirements for their construction and position in relation to the bank?
5. Do you have specific requirements for pollution control measures for discharges to ordinary watercourses? Obviously, we will be providing a general level of pollution control measures, eg catch pits, silt control, oils, so this is whether you will require anything above that level of pollution control.
6. Will you require any water quality monitoring, either during construction or into the operational phase?
7. Will you have any specific requirements for the control and discharge of surplus process water, eg water quality, temperature, pH?
8. For the FRA, we have assumed that a Sequential Test is not required given that this is redevelopment on an existing site. Please could the IDB confirm this is acceptable?
9. Please could the IDB confirm the proposed study areas of 0.5km for surface water and groundwater, and 1km for features in hydraulic connectivity and groundwater abstractions, are acceptable?
10. Are there any specific mitigation measures that the IDB will require, eg monitoring and sampling points or flow measurement?
11. Does the IDB have historic flood records (from all sources) for this area?
12. Does the IDB have any water quality data for the ordinary watercourses?

I believe you have pointed us in the direction of your consent process and guidance notes, and provided us with a map of the watercourses and names.

Regards  
Jon

**Jonathan Price**

Principal Civil Engineer, Water Engineering, Transport & Infrastructure



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---

From: Paul Jones [<mailto:Paul.Jones@shiregroup-idbs.gov.uk>]

Sent: 05 February 2018 09:54

To: Price, Jon <[Jon.Price@wsp.com](mailto:Jon.Price@wsp.com)>

Cc: Markose, Louise <[louise.markose@wsp.com](mailto:louise.markose@wsp.com)>; Szostak, Elzbieta <[Elzbieta.Szostak@wsp.com](mailto:Elzbieta.Szostak@wsp.com)>; Farley, Isabelle <[Isabelle.Farley@wsp.com](mailto:Isabelle.Farley@wsp.com)>; [info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk); [Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)  
Subject: RE: Drax Repower Flood Risk Consultation

Jon,

Thank you for the email and apologies for the delay.

Please see attached plan covering the study area. The watercourse naming conventions are for those watercourses which the IDB currently choose to maintain under the Land Drainage Act 1991 (as amended). However, the planned Works and in particular, gas pipeline, will impact on all ordinary watercourses (both open channel and piped e.g. all watercourses other than Main River) which are not maintained by the IDB and will need to be determined by yourselves for a consent application.

A joint meeting with the EA would be beneficial but in the meantime, you are more than welcome to contact me on 01302 337798, option 3, option 2, and I should be available from 10am tomorrow, Thursday PM, or Friday.

Kind regards,

**For and on behalf of the Shire Group of Internal Drainage Boards,**

**Paul Jones** BSc (Hons) MSc (Eng) GMICE  
*Engineer to the Board*  
Lead Water Level Management Engineer

---

From: Price, Jon [<mailto:Jon.Price@wsp.com>]

Sent: 08 January 2018 17:46

To: Paul Jones <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>

Cc: Markose, Louise <[louise.markose@wsp.com](mailto:louise.markose@wsp.com)>; Szostak, Elzbieta <[Elzbieta.Szostak@wsp.com](mailto:Elzbieta.Szostak@wsp.com)>; Farley, Isabelle <[Isabelle.Farley@wsp.com](mailto:Isabelle.Farley@wsp.com)>; [info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk); [Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)

Subject: RE: Drax Repower Flood Risk Consultation

Paul

Thank you for your response below.

Would it be possible for you to send a plan similar to the one you included below but covering the whole of our study area, ie covering the Drax site as below but also including the proposed gas pipeline routes? The attached plan shows our study area.

Also, what do the numbers on your plan represent, eg 20/8, UN010, etc? If these represent names of the watercourses in a database, would it be possible for you to provide the names of the watercourses impacted by our study area?

My colleagues are in the process of arranging a joint meeting with yourselves and Environment Agency. In the meantime, it would be useful to have a chat with you regarding some of the drainage aspects for the Drax Repower project. Do you have a contact telephone number?

Regards

Jon

**Jonathan Price**  
Principal Civil Engineer, Water Engineering, Transport & Infrastructure



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From: Paul Jones [<mailto:Paul.Jones@shiregroup-idbs.gov.uk>]

Sent: 04 January 2018 15:08

To: Markose, Louise <[louise.markose@wsp.com](mailto:louise.markose@wsp.com)>; Farley, Isabelle <[Isabelle.Farley@wsp.com](mailto:Isabelle.Farley@wsp.com)>

Cc: info <[info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)>; Ian Chapman <[Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)>

Subject: RE: Drax Repower Flood Risk Consultation

Dear Louise,

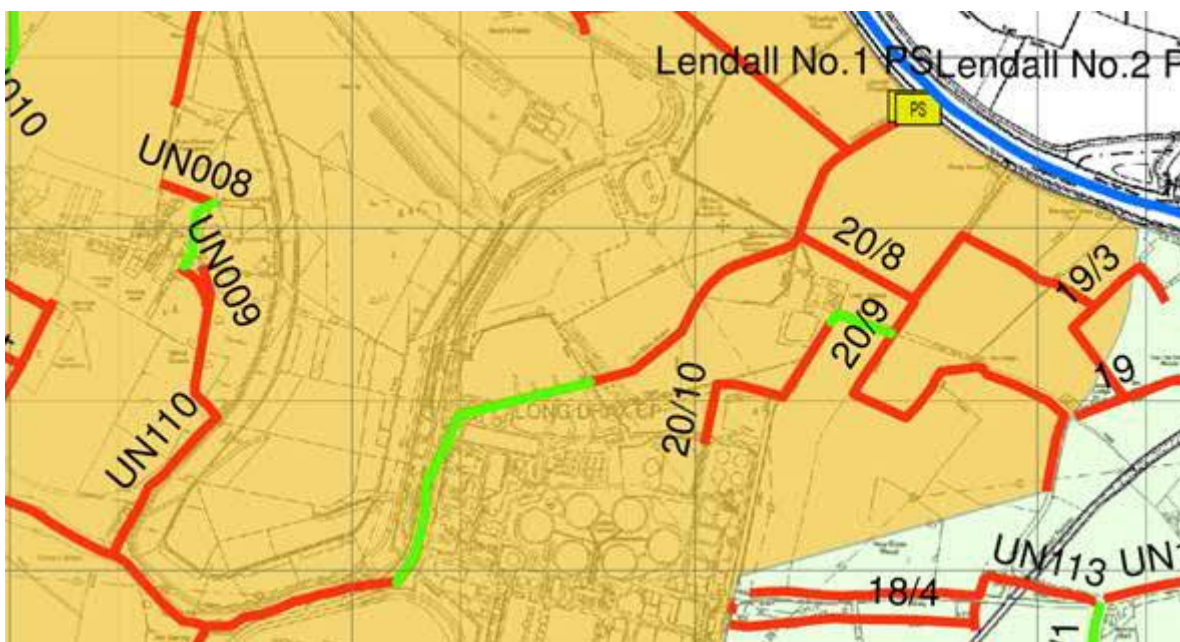
Please find extract from our OS mapping below.

Ordinary Watercourses (shown in red), Piped Ordinary Watercourses (Green), Main River (blue), hydraulic catchment (orange).

The pipeline beneath Area 'C' of the DRAX REPOWER PROJECT is the riparian owners responsibility. No obstruction should be placed within 7 metres either side of the pipelines or on top of the pipeline. This will enable access to repair/replace the pipeline should the riparian owner/occupiers be required to do so.

Consent, in addition to any planning or DCO, would be required from the IDB as described on the Boards website, <https://www.shiregroup-idbs.gov.uk/planning-consents/>

The proposed Gas Pipelines will also intersect IDB maintained watercourses and will require Consent from the IDB for each crossing point.



Kind regards,

**For and on behalf of the Selby Area Internal Drainage Board,**

**Paul Jones** BSc (Hons) MSc (Eng) GMICE  
*Engineer to the Board*  
Lead Water Level Management Engineer

---

From: Markose, Louise [<mailto:louise.markose@wsp.com>]  
Sent: 03 January 2018 14:42  
To: Farley, Isabelle <[Isabelle.Farley@wsp.com](mailto:Isabelle.Farley@wsp.com)>; Paul Jones <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>  
Cc: info <[info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)>; Ian Chapman <[Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)>  
Subject: RE: Drax Repower Flood Risk Consultation

Hi Paul,

We would really appreciate a response by the end of this week / early next week.

Look forward to meeting you soon, we will be in touch.

Thanks  
Louise

**Louise Markose**  
MCIWEM, MA, MSc  
Principal Consultant, Water Engineering, Transport & Infrastructure



M+ [REDACTED]

6 Devonshire Square  
London  
EC2M 4YE

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From: Farley, Isabelle  
Sent: 02 January 2018 17:34  
To: Paul Jones <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>  
Cc: info <[info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)>; Ian Chapman <[Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)>; Markose, Louise <[louise.markose@wsp.com](mailto:louise.markose@wsp.com)>  
Subject: RE: Drax Repower Flood Risk Consultation

Dear Paul,

Thank you for your reply.

We are currently waiting for a response from the EA as we are hoping to arrange a coordinated meeting with yourselves, the EA as we are based in Bristol/London.

Therefore we would greatly appreciate it if you could respond to our queries via email prior to the meeting, any issues you raise can be discussed in more detail in the meeting.

Kind regards,  
Isabelle

**Isabelle Farley**

MSc BSc  
Graduate Consultant, Water Engineering



T+ 44 (0)117 930 6193  
S+ 44 (0)117 930 6200

Kings Orchard, 1 Queen Street,  
Bristol, BS2 0HQ

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BS2 0HQ

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From: Paul Jones [<mailto:Paul.Jones@shiregroup-idbs.gov.uk>]  
Sent: 20 December 2017 14:54  
To: Farley, Isabelle <[Isabelle.Farley@wsp.com](mailto:Isabelle.Farley@wsp.com)>  
Cc: info <[info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)>; Ian Chapman <[Ian.Chapman@selbyareaidb.org.uk](mailto:Ian.Chapman@selbyareaidb.org.uk)>  
Subject: RE: Drax Repower Flood Risk Consultation

Dear Isabelle,

Thank you for the consultation and I acknowledge receipt.

Would it be possible to meet at the Selby Area IDB office (12 Park Street, Selby, YO8 4PW) in the New Year for you to go through the proposals and raise any questions.

I will be available on Thursday 4<sup>th</sup> from 2pm or Thursday 11<sup>th</sup> from 2pm.

Kind regards,

**For and on behalf of the Shire Group of Internal Drainage Boards,**

**Paul Jones** BSc (Hons) MSc (Eng) GMICE  
*Engineer to the Board*  
**Lead Water Level Management Engineer**

---

From: info [<mailto:info@selbyareaidb.org.uk>]  
Sent: 24 November 2017 07:56  
To: Paul Jones <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>  
Subject: FW: Drax Repower Flood Risk Consultation

Paul

Regards

Ian

---

From: Farley, Isabelle [<mailto:Isabelle.Farley@wsp.com>]  
Sent: 23 November 2017 12:09  
To: info <[info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)>  
Cc: Markose, Louise <[louise.markose@wsp.com](mailto:louise.markose@wsp.com)>; Szostak, Elzbieta <[Elzbieta.Szostak@wsp.com](mailto:Elzbieta.Szostak@wsp.com)>  
Subject: Drax Repower Flood Risk Consultation

Dear Selby IDB,

We have been commissioned by Drax Power Station to carry out the water environment chapter of the EIA and the Flood Risk Assessment. We have reviewed the Scoping Opinion and would now like to formally consult with Selby Internal Drainage Board about the scheme proposals. We are also consulting with North Yorkshire County Council on many of the questions below. It would be helpful to understand further how the responsibilities are split between the IDB and North Yorkshire as the LLFA.

It is likely we will need consult with the IDB throughout the project, therefore please could let me know if we have the correct contact details.

## The Project

Drax Power Limited (the applicant) intends to undertake the repowering of two existing coal-fired units with gas at Drax Power Station in Selby, North Yorkshire. WSP has been commissioned to assist Drax to seek planning permission known as a Development Consent Order (DCO) which is required for all nationally significant infrastructure projects. The Site is located in an areas of complex flood risk comprising of Flood Zones 1, 2 and 3, with some areas understood to benefit from flood defences along the banks of the River Ouse. The source is the River Ouse and ordinary watercourses located within the study area such as the Carr Dyke. Flooding from surface water is typically associated with natural overland flow paths. Please refer to the accompanying plans (dated 9<sup>th</sup> November 2017) for further details on the Scheme Proposals. Also attached is an extract from the scoping report which provides further details on the scheme (dated September 2017).

We would like to seek your general comments on the scheme in relation to the water environment / flood risk. Therefore please provide comments on aspects you wish to be incorporated within the assessment. More specifically we would like to consult with you on the following key questions:

- We are currently looking into how to construct the gas pipeline as shown on the attached plans there are two possible routes (A&B), we do not believe the routes cross main rivers (Aire, Derwent or Ouse) however it does cross some Ordinary Watercourse. Where the route crosses the Ordinary Watercourses there are two options a) to open cut the watercourse and disturb the ditch b) to auger underneath with no actual ditch disturbance. Would the IDB be open to some discussions about option a?
- It is likely that the proposed development will increase the amount of impermeable area. The proposal is to utilise the existing drainage system wherever feasible or construct a new outfall(s) to the system of watercourses if required. What would be the allowable discharge rate from the new impermeable areas?
- What would be the preferable discharge points?
- If new outfalls are required to be constructed, does the IDB have their own guidance on the requirements for new outfalls to their systems?
- Does the IDB have specific requirements regarding pollution prevention measures?
- Are there any requirements for water quality monitoring during construction and operational phase?
- Should surplus process water need to be discharged, are there are any specific requirements relating to the quality of process water that may need to be discharged to the local watercourses;
- We have assumed that there is no need to carry out the Sequential Test given the site is being redeveloped. Please can the IDB confirm this assumption;
- The proposed study areas for surface water and groundwater features is 0.5km and for features in hydraulic connectivity and groundwater abstractions is 1Km. The study area is considered appropriate based on professional judgement and current knowledge of the area. Please can the IDB confirm they are happy with the study area?
- Details of the consent process and application fee;
- Please include any details on mitigation the IDB would like to see included in the scheme / FRA.

## Data request

- Historic flooding records (from all sources)
- Any water quality data
- A map showing the names and designation of the watercourse within the study area (Main River/Ordinary Watercourse), including any culverted watercourses



Thank you very much for your help, if you need any further information on the scheme or any aspect of the consultation please contact me directly.

It would assist the project if you could acknowledge receipt of this consultation and when we can expect to get a response back.

Kind regards,  
Isabelle

**Isabelle Farley**

MSc BSc

Graduate Consultant, Water Engineering



T+ 44 (0)117 930 6193

S+ 44 (0)117 930 6200

Kings Orchard, 1 Queen Street,  
Bristol, BS2 0HQ

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BS2 0HQ

**JBA Consulting, Epsom House, Chase Park, Redhouse Interchange, Doncaster, South Yorkshire, DN6 7FE.  
Telephone: +441302 337798**

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## **FW – APPENDIX C – WFD SCREENING ASSESSMENT AND CORRESPONDENCE**

## **WFD Overview Matrices**

### **(A) WFD Screening Matrices**

|                          |                |             |            |
|--------------------------|----------------|-------------|------------|
| <b>Name of NSIP</b>      | Drax Power DCO | <b>Date</b> | 11/04/2018 |
| <b>Project Reference</b> | 70037047       |             |            |

**Table 1. Summary table of WFD waterbodies considered at the WFD Screening stage**

| <b>Waterbody ID</b>  | <b>Name of waterbody</b>               | <b>Stage of assessment reached<br/>Screening/WFD Assessment</b> |
|----------------------|----------------------------------------|-----------------------------------------------------------------|
| <b><u>Humber</u></b> |                                        |                                                                 |
| GB104027063680       | Ouse from River Wharfe to Upper Humber | Screening                                                       |

**Table 2. WFD Screening Summary Table**

| <b>Waterbody ID</b> | <b>Waterbody</b>                              | <b>Element</b>                       | <b>Screened in/out for WFD Assessment</b> |
|---------------------|-----------------------------------------------|--------------------------------------|-------------------------------------------|
| GB104027063680      | <i>Ouse from River Wharfe to Upper Humber</i> | Hydromorphology                      | In                                        |
|                     |                                               | Biology – fish                       | In                                        |
|                     |                                               | Biology - habitats                   | In                                        |
|                     |                                               | Chemical                             | In                                        |
|                     |                                               | Quantitative – Groundwater Base flow | In                                        |

## Summary of WFD screening consultation

| Consultee | Summary of discussion | Reference (to consultation evidence provided in ES / WFD Report / SoCG) |
|-----------|-----------------------|-------------------------------------------------------------------------|
| NRW / EA  |                       |                                                                         |

## (B) WFD Assessment Matrices

| Name of NSIP      | Drax Power DCO | Date | 11/04/2018 |
|-------------------|----------------|------|------------|
| Project Reference | 70037047       |      |            |

**Table 1. Summary table of WFD waterbodies considered at the WFD Assessment stage**

| Waterbody ID   | Name of waterbody                      | Deterioration concluded? |
|----------------|----------------------------------------|--------------------------|
| GB104027063680 | Ouse from River Wharfe to Upper Humber | No deterioration         |

**Table 2.X. WFD Assessment Detailed Tables (*one per waterbody screened in to a WFD assessment*)**

| Waterbody name                            | Ouse from River Wharfe to Upper Humber                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waterbody ID                              | GB104027063680                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Location relative to Proposed Development | The area of the proposed development is served by a complex system of field drains. The drains are designated as ordinary watercourses under the jurisdiction of the Selby Area IDB. All the drains eventually discharge to the River Ouse designated as a main river under the jurisdiction of the EA. Therefore this screening assessment has taken into account surface water features to a minimum of 0.5 km within the proposed development (see appendix A). |
| Type                                      | Surface water                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Surface waterbody category                | River                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Heavily Modified waterbody</b>                | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Artificial waterbody</b>                      | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Element screened in to further assessment</b> | <b>Summary of conclusion and reference</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Hydro-morphology</b>                          | No deterioration predicted, the proposed works do not include any permanent in-channel modifications of any of the watercourses crossed and so hydromorphological quality will remain un-compromised.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Biology – fish</b>                            | <p>No deterioration predicted as part of the scheme, no barriers/structures that impede the passing of fish are being implemented.</p> <p>The River Ouse is considered a migratory path for protected species into the Humber Estuary under the following designations; Ramsar, SAC, SPA and SSSI. However, considering the size of the drains, the amount of increased sediment load released during construction of temporary culverts is unlikely to be significant to the River Ouse.</p>                                                                                                                                                                                                                 |
| <b>Biology - habitats</b>                        | No deterioration predicted, appropriate ecological mitigation will be put in place for the drains that are considered suitable for commuting and foraging by otters and Water Voles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Chemical status</b>                           | No deterioration predicted, waterbody status currently designated 'fail' with an objective to achieve 'good' by 2027. Appropriate mitigation measures during construction such as sediment trapping techniques will be installed to capture any potential increase in sediment load and other pollutants. During operational phases best practice pollution control techniques will be used to minimise any impacts to the surrounding drains and watercourses.                                                                                                                                                                                                                                               |
| <b>Quantitative – Baseflow</b>                   | <p>Minimal deterioration predicted to the Wharfe and Ouse Sherwood Sandstone (GB40401G702400). Local groundwater-surface water interactions will need to be defined prior to design. The pipeline is expected to be founded within the superficial deposits on site, which are characterised as Clays, Silts, and Sands and Gravels. Construction of the gas pipeline may reduce or sever a degree of superficial groundwater baseflow to the River Ouse which would naturally occur from the south of the proposed pipeline.</p> <p>The ground materials are likely to have low-moderate permeabilities indicating that River baseflow contributions from these ground materials are likely to be small,</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>however, this will need to be defined through further groundwater study. Hydraulic control options during construction may consist of sheet piling, sump pumping or active dewatering, the latter having a lateral drawdown effect away from the area of dewatering and potentially causing a temporary interference with groundwater baseflow to the watercourse. The degree of hydraulic control may also be influenced by the time of year when the controls will be employed. During winter, after sustained periods of rainfall, groundwater levels will be elevated and likely near surface.</p> <p>During the operational phase, the pipeline could act as a preferential pathway for groundwater, depending on local groundwater levels, permeabilities, hydraulic gradients and base materials upon which the pipeline is installed e.g. pea gravel. This pathway could divert some groundwater baseflow away from the watercourse.</p> |
| <b>Groundwater</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Minimal deterioration predicted, the Groundwater body is the Wharfe and Ouse Sherwood Sandstone (GB40401G702400) it is designated 'poor' under the WFD.</p> <p>Consultation with the EA dated 22/03/2017 (see appendix C) states that this is related to saline intrusion problems along with abstraction pressures on the groundwater body. To ensure no loss of net flow to the groundwater environment during the construction of the pipeline appropriate mitigation will be provided. This may include the provision of a sump pump in the trenches with the groundwater being recycled back into the system through temporary infiltration ponds for example.</p>                                                                                                                                                                                                                                                                          |
| <b>Cumulative Impact Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>No cumulative impacts from a WFD perspective identified, the scheme is an extension and gas pipeline of an already existing power plant.</p> <p>No permanent modifications to watercourses within proposed scheme.</p>                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Measures Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>Summary of the mitigation measures proposed to avoid deterioration waterbodies current WFD status;</p> <ul style="list-style-type: none"> <li>• A Construction Environmental Management Plan (CEMP) to be prepared and implemented that will include mitigation measures to protect the water environment with measures such as sediment and pollution management in line with best practice (C532, PPG1 PPG2 and PPG5);</li> <li>• Crossings of the pipeline with the watercourses will be constructed using trenchless crossing techniques to minimise impact on the watercourses;</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

- The use of straw bales during works near or within the drains to capture potential increased sediment load and other pollutants entering the drains;
- Cutting off ditches and adopting appropriate drainage systems to manage site runoff;
- Minimising the movement of vehicles within 10m of watercourses; and
- Groundwater hydraulic control maybe required during the construction of the pipeline. Hydraulic controls could consist of but are not limited to sheet piling, sump pumping or active dewatering, the latter having a lateral drawdown effect away from the area of dewatering and potentially causing a temporary interference with groundwater baseflow to the watercourse.

## Conclusion

The deterioration of current WFD surface water and groundwater status within the proposed scheme during construction and operational phases appear unlikely upon initial screening. The reasoning for this is that no permanent surface water modifications are proposed as part of the scheme and where permanent modifications are being made to the groundwater, appropriate mitigation will be deployed.

In addition to this, the mitigation plan stated in the construction works will be undertaken in accordance with a robust in-design mitigation system, including the CEMP, best practice and appropriate method statements, which will largely mitigate potential impacts to these water features, mainly chemical as the waterbody is currently failing on that objective, largely due to the diffuse pollution from rural areas.

### Article 4.7 derogation required?\*

No

\* In the event of degradation or impeding the ability to achieve 'good' status the derogation tests will need to be considered.

## Summary of WFD assessment consultation

| Consultatee | Summary of discussion | Reference to status of agreement (to consultation evidence provided in ES / WFD Report / SoCG) |
|-------------|-----------------------|------------------------------------------------------------------------------------------------|
| NE / EA     |                       |                                                                                                |

## Appendix A- WFD Assessment Table

| Named watercourse/Drain                                             | Water body type                                                                                     | Water body Classification (2016 Cycle) |            |          | Overall Classification | WFD Objective | Potential Impacts of Proposed Scheme                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                | Mitigation proposed in ES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------|------------|----------|------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                     |                                                                                                     | Hydro-morphological designation        | Ecological | Chemical |                        |               | Construction                                                                                                                                                                                                                                                                                               | Operational                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Carr Dyke (reference SW01)                                          | Ordinary Watercourse                                                                                | Heavily modified                       | Moderate   | Fail     | Moderate               | Good by 2027  | 1. Surface water run-off containing elevated suspended sediment levels migrating to the Carr Dyke from demolition activities with possibility of increased sediment load in channel                                                                                                                        | 1. Impact to watercourse caused by the movement of vehicles and accidental spillages of oil, hydrocarbons and hazardous substances.<br>2. Surface water runoff generated in the new impermeable areas located within the current boundary of Drax Power Station and surface water runoff generated in the area of the Gas Receiving Facility may be discharged directly to existing drainage system serving the power station. | 1. Implementation of a robust mitigation system through measures such as minimising movement of vehicles within 10m of watercourses and using straw bales during works near or within the drains to capture potential increase in sediment load and other pollutants during the construction phase the magnitude of potential impact to the watercourse is considered unlikely to deteriorate WFD status.<br>2. The existing drainage system includes appropriate pollution prevention measures hence the routine runoff from the new areas is unlikely to impact the quality of Carr Dyke |
| Unnamed drain north of the northern cooling towers (reference SW02) | Drax Power Station Drainage network discharging into the Carr Dyke ( <i>dry at time of survey</i> ) | n/a                                    | n/a        | n/a      | n/a                    | n/a           | 1. The drain flows along the north-western boundary of the proposed construction compound. Possibility of increased sediment load to drain.                                                                                                                                                                | 1. Surface water runoff generated in the new impermeable areas located within the current boundary of Drax Power Station and surface water runoff generated in the area of the Gas Receiving Facility may be discharged directly to existing drainage system serving the power station.                                                                                                                                        | 1. North Perimeter Ditch of minor adverse significance prior to the implementation of mitigation measures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| North Perimeter Ditch (reference SW03)                              | Drax Power Station Drainage network discharging into the Carr Dyke ( <i>dry at time of survey</i> ) | n/a                                    | n/a        | n/a      | n/a                    | n/a           | 1. Drain flows along the green area to the north of the northern cooling towers. The ditch will be diverted along the northern boundary of the power station, and the existing channel is likely to be in-filled. The new battery storage building is proposed to be constructed in the area of the ditch. | 1. Surface water runoff generated in the new impermeable areas located within the current boundary of Drax Power Station and surface water runoff generated in the area of the Gas Receiving Facility may be discharged directly to existing drainage system serving the power station.                                                                                                                                        | 1. The existing drainage system includes appropriate pollution prevention measures hence the routine runoff from the new areas is unlikely to impact the quality of the Drain.                                                                                                                                                                                                                                                                                                                                                                                                             |



|                                                                   |                                                                                                   |     |     |     |     |     |                                                                                                                                                                                                                                                                                                               |                                                                                      |                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unnamed Selby Area IDB drain with reference 44 (reference SW04)   | Selby Area IDB designated drain/ not classified as WFD waterbody ( <i>dry at time of survey</i> ) | n/a | n/a | n/a | n/a | n/a | 1. A flood mitigation channel and potentially sludge lagoons (if two unit repowering option are taken further) will be constructed immediately to the west and south of the upstream end of the drain respectively.<br>2. Located within 30m of the proposed construction works or the construction compound. | 1. Potential for accidental spillages of oil, hydrocarbons and hazardous substances. | 1. The existing drainage system includes appropriate pollution prevention measures hence the routine runoff from the new areas is unlikely to impact the quality of the drain.<br>2. Implementation of in-design mitigation and best practice procedures |
| Unnamed drain along the eastern side of New Road (reference SW06) | Potentially part of highway drainage network- not under IDB/ WFD ( <i>dry at time of survey</i> ) | g   | n/a | n/a | n/a | n/a | 1. Drain flows along the western boundary of the proposed main construction compound                                                                                                                                                                                                                          | 1. No direct operational impacts identified                                          | 1. The existing drainage system includes appropriate pollution prevention measures hence the routine runoff from the new areas is unlikely to impact the quality of the drain.<br>2. Implementation of in-design mitigation and best practice procedures |
| Unnamed Selby Area IDB drain with reference 18/4 (reference SW07) | WFD waterbody (dry ditch at time of survey).                                                      | n/a | n/a | n/a | n/a | n/a | 1. Drain runs along the woodland area immediately to the east of Drax Power Station. The Gas Receiver Facility is proposed to be constructed adjacent to this drain, with the pipeline constructed approximately 30m south of the drain.<br>2. located within 30m of the construction compound                | 1. Potential for accidental spillages of oil, hydrocarbons and hazardous substances. | 1. The existing drainage system includes appropriate pollution prevention measures hence the routine runoff from the new areas is unlikely to impact the quality of the drain.<br>2. Implementation of in-design mitigation and best practice procedures |
| Carr Lane Drain (reference SW08)                                  | Selby Area IDB designated drain/ not classified as WFD waterbody                                  | n/a | n/a | n/a | n/a | n/a | 1. Drain runs along the northern side of Carr Lane, which would form the southern boundary of the main construction compound.                                                                                                                                                                                 | 1. No direct operational impacts identified                                          | Considering the implementation of a robust in-design mitigation system, including CEMP, the magnitude of potential impacts is considered to be negligible, and the significance of effects on the dyke is considered to be negligible                    |

|                                                                   |                                                                  |                  |          |      |          |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------|------------------------------------------------------------------|------------------|----------|------|----------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| River Ouse (reference SW09)                                       | Main River                                                       | Heavily modified | Moderate | Fail | Moderate | Good by 2027 | <p>1. The River Ouse flows approximately 0.1km north of the proposed pipeline and associated infrastructure at the closest point.</p> <p>2. Potential for cumulative impact from the temporary culverts proposed at Back Lane Drain, IDB's unnamed drain reference 18/1 to allow for construction access along the pipeline route.</p> <p>3. Construction of the gas pipeline may reduce or sever a degree of superficial groundwater base flow to the River Ouse</p> | <p>1. During the operational phase, the pipeline could act as a preferential pathway for groundwater, depending on local groundwater levels, permeabilities, hydraulic gradients and base materials upon which the pipeline is installed e.g. pea gravel. This pathway could divert some groundwater baseflow away from the watercourse.</p> | <p>1. Considering the size of the drains, the amount of increased sediment load released during construction of temporary culverts is unlikely to be significant to the River Ouse.</p> <p>2. Groundwater hydraulic control options during pipeline construction may consist of sheet piling, sump pumping or active dewatering, the latter having a lateral drawdown effect away from the area of dewatering and potentially causing a temporary interference with groundwater baseflow to the watercourse.</p> <p>3. Sump pumping during construction of groundwater back system through a temporary infiltration pond, ensuring no loss net flow to the groundwater environment.</p> |
| Back Lane Drain (reference SW10)                                  | Selby Area IDB designated drain/ not classified as WFD waterbody | n/a              | n/a      | n/a  | n/a      | n/a          | <p>1. The pipeline is proposed to cross this drain approximately 180m east of Wren Hall</p> <p>2. Construction of temporary culvert to allow for construction access may result in increased sediment load</p>                                                                                                                                                                                                                                                        | <p>1. No direct operational impacts identified</p>                                                                                                                                                                                                                                                                                           | <p>1. Crossing will be constructed using trenchless crossing techniques to reduce impact on the drains</p> <p>2. Likelihood of direct, short-term effect on drain due to the construction of temporary culvert. Although not significant to impact watercourse permanently.</p>                                                                                                                                                                                                                                                                                                                                                                                                         |
| Unnamed Selby Area IDB drain with reference 18/1 (reference SW11) | Selby Area IDB designated drain/ not classified as WFD waterbody | n/a              | n/a      | n/a  | n/a      | n/a          | <p>1. The drain is partially culverted. The new pipeline is proposed to cross the drain approximately 180m to the south of Baxter Hall</p> <p>2. Construction of temporary culvert to allow for construction access may result in increased sediment load</p>                                                                                                                                                                                                         | <p>1. No direct operational impacts identified</p>                                                                                                                                                                                                                                                                                           | <p>1. Crossing will be constructed using trenchless crossing techniques to reduce impact on the drains</p> <p>2. Likelihood of direct, temporary, short-term effect on drain due to the construction of temporary culvert, although not significant to impact watercourse permanently as the sediments suspended in the water will be partially trapped and diluted before they reach the River Ouse.</p>                                                                                                                                                                                                                                                                               |
| Black Tom Drain (reference SW12)                                  | Selby Area IDB designated drain/ not classified as WFD waterbody | n/a              | n/a      | n/a  | n/a      | n/a          | <p>1. The new pipeline is proposed to be constructed approximately 60m to the south-west of the drain</p>                                                                                                                                                                                                                                                                                                                                                             | <p>1. No direct operational impacts identified</p>                                                                                                                                                                                                                                                                                           | <p>1. Likelihood of direct, temporary, short-term effect on drain due to the construction of temporary culvert, although not significant to impact watercourse permanently as the sediments suspended in the water will be partially trapped and diluted before they reach the River Ouse.</p>                                                                                                                                                                                                                                                                                                                                                                                          |

|                                                                     |                                                                                                          |     |     |     |     |     |                                                                                                                                                                                                                                                                                                                                                   |                                             |                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unnamed Selby Area IDB drain with reference 18/3 (reference SW13)   | Selby Area IDB designated drain/ not classified as WFD waterbody                                         | n/a | n/a | n/a | n/a |     | 1. The new pipeline is proposed to be constructed parallel to the drain and approximately 30m to the east from the drain.<br>2. Drain located within 30m of the proposed construction works or the construction compound.                                                                                                                         | 1. No direct operational impacts identified | 1. Likelihood of direct, temporary, short-term effect on drain due to the construction of temporary culvert, although not significant to impact watercourse permanently as the sediments suspended in the water will be partially trapped and diluted before they reach the River Ouse.                                                                                                        |
| Rusholme Lane Drain also known as Willow Row Drain (reference SW14) | WFD waterbody ( <i>dry ditch at time of survey</i> ).                                                    | n/a | n/a | n/a | n/a | n/a | 1. Proposed pipeline to cross the Rusholme Lane Drain approximately 300m north of Scurff Cottages<br>2. Rusholme Lane north of the junction with Church Dike Lane is proposed to be widened to allow for construction access, approximately 20m away from Rusholme drain<br>3. Construction of temporary culvert to allow for construction access | 1. No direct operational impacts identified | 1. Crossing will be constructed using trenchless crossing techniques to reduce impact on the drains<br>2. Likelihood of direct, temporary, short-term effect on drain due to the construction of temporary culvert, although not significant to impact watercourse permanently as the sediments suspended in the water will be partially trapped and diluted before they reach the River Ouse. |
| Unnamed Selby Area IDB drain with reference 16/1 (reference SW15)   | Selby Area IDB designated drain/ not classified as WFD waterbody ( <i>dry ditch at time of survey</i> ). | n/a | n/a | n/a | n/a | n/a | 1. Drain runs approximately 270m to the north of the junction of Church Dike Lane with Rusholme Lane. The drain will form a northern boundary of the proposed Rusholme Lane widening area.                                                                                                                                                        | 1. No direct operational impacts identified | 1. Likelihood of direct, temporary, short-term effect on drain due to the construction of temporary culvert, although not significant to impact watercourse permanently as the sediments suspended in the water will be partially trapped and diluted before they reach the River Ouse.                                                                                                        |
| Dickon Field Drain (reference SW16)                                 | Selby Area IDB designated drain/ not classified as WFD waterbody ( <i>dry ditch at time of survey</i> ). | n/a | n/a | n/a | n/a | n/a | 1. Surface water runoff generated in the new access road is likely to be discharged to the drain.<br>2. located within 30m of the proposed construction works or the construction compound                                                                                                                                                        | 1. No direct operational impacts identified | 1. Surface water runoff generated in the area of the Above Ground Infrastructure and the associated access road will be routed through appropriate oil separator before discharge to the drain. Considering this, impacts from a WFD perspective are unlikely.                                                                                                                                 |

|                                  |                                                                                                                                    |     |     |     |     |     |                                                                                                                                                                                                                                                                                                                                                                                                              |                                             |                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clough Drain<br>(reference SW17) | Selby Area IDB<br>designated<br>drain/ not<br>classified as<br>WFD<br>waterbody<br>( <i>dry ditch at<br/>time of<br/>survey</i> ). | n/a | n/a | n/a | n/a | n/a | <p>1. Dickon Field Drain discharges to Clough Drain approximately 100m to the south of Rusholme Lane. The new access road associated with the AGI is proposed to be constructed along the drain.</p> <p>2. Surface water runoff generated in the new access road is proposed to be discharged to the drain.</p> <p>3. Located within 30m of the proposed construction works or the construction compound</p> | 1. No direct operational impacts identified | Considering the implementation of a robust mitigation system, including CEMP, during the construction phase, and a robust drainage system including appropriate oil separator, the magnitude of potential impacts is considered to be negligible, and the significance of effects on the quality of Clough Drain is considered to be negligible |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Appendix B- Map detailing surface water features**



**Appendix C- Correspondence with EA**



From: Beyer, Nick [mailto:nick.beyer@environment-agency.gov.uk]

Sent: 23 March 2018 15:43

To: Markham, Louise <Louise.markham@wsp.com>

Cc: Oliver Raybould <oliver.raybould@wsp.com>; Jim Doyle <jim.doyle@wsp.com>; Taylor, Chris <Chris.Taylor@wsp.com>

Subject: Chas WFD

Hi Louise,

Further to our discussion just now, I can confirm that you do not need to do a WFD assessment from a groundwater perspective.

The Groundwater body is the Wilts and Dows Sherwood Sandstone and it is 'poor' status from a WFD perspective. It is poor due to saline intrusion problems. This is related to abstraction pressures among other things. As you are not increasing abstractions, we don't consider you will have an impact on WFD for this waterbody. You will still need to address groundwater and contaminated land issues as per previous advice.

As for the surface waterbodies, you will still need to do a screening exercise in line with the guidance I've sent previously and we will be able to review it (hopefully discuss it as well) once it is complete.

Apologies for the rushed email. I just realised I have a meeting to go to any minute.

Kind regards

Nick

Nick Beyer  
Yorkshire Sustainable Places | Environment Agency  
01 629 625 5961  
Lancaster, 6 City Walk, Leeds LS1 3BT

## Markose, Louise

---

**From:** Paul Jones <Paul.Jones@shiregroup-idbs.gov.uk>  
**Sent:** 30 April 2018 15:48  
**To:** Sheikh-Osman, Amina  
**Cc:** info@selbyareaidb.org.uk; Markose, Louise; Szostak, Elzbieta  
**Subject:** RE: Drax Power DCO WFD Screening- Comments Required

Dear Amina,

On behalf of the Selby Area IDB we do not perceive any adverse impacts from a WFD perspective.

Kind regards,

**For and on behalf of the Shire Group of Internal Drainage Boards,**

**Paul Jones** BSc (Hons) MSc (Eng) GMICE  
*Engineer to the Board*  
Lead Water Level Management Engineer

---

**From:** Sheikh-Osman, Amina <amina.sheikh-osman@wsp.com>  
**Sent:** 30 April 2018 10:59  
**To:** Paul Jones <Paul.Jones@shiregroup-idbs.gov.uk>  
**Cc:** info@selbyareaidb.org.uk; Markose, Louise <louise.markose@wsp.com>; Szostak, Elzbieta <Elzbieta.Szostak@wsp.com>  
**Subject:** RE: Drax Power DCO WFD Screening- Comments Required

Thanks Paul, much appreciated. We hope to understand if the Selby IDB perceive that there will be any adverse effects to the crossed and/or nearby surface waterbodies from a WFD perspective, including Carr Dyke and Rusholme Lane Drain (Willow Lane Drain). And if so, what additional mitigation/design considerations the Selby IDB suggest?

Kind Regards,  
Amina

---

**From:** Paul Jones [<mailto:Paul.Jones@shiregroup-idbs.gov.uk>]  
**Sent:** 30 April 2018 10:20  
**To:** Sheikh-Osman, Amina <[amina.sheikh-osman@wsp.com](mailto:amina.sheikh-osman@wsp.com)>

Cc: [info@selbyareaiddb.org.uk](mailto:info@selbyareaiddb.org.uk)

Subject: RE: Drax Power DCO WFD Screening- Comments Required

Dear Amina,

Thank you for the email, please find comments on behalf of Selby Area DB below.

Ordinary Watercourse, Carr Dyke

- For any proposed discharge into Carr Dyke from the site a Consent Application to the IDB under the Land Drainage Act 1991 (as amended) will be required separate from any planning permission and at detailed design stage. Any potential surface water discharge would need to be restricted to 1.4 l/s/ha. An increased runoff may be considered by paying for a new pump to be installed at the downstream Lendall Pumping Station which currently has a spare sump for future development.
- Any temporary discharge of ground water during the works may be discharged into Carr Dyke subject to Consent and at a charge of £0.01 per cubic metre to cover wear and tear on the downstream pumping station.
- The 10m easement minimising vehicle movement is welcomed.
- Any works proposed within 7m of the edge of the watercourse will also require Consent from the IDB.

All Ordinary Watercourses within the District / Area

- For any proposed discharge into an Ordinary Watercourse from the site a Consent Application to the IDB under the Land Drainage Act 1991 (as amended) will be required separate from any planning permission and at detailed design stage. Any potential surface water discharge would need to be restricted to 1.4 l/s/ha.
- Any temporary discharge of ground water during the works may be discharged into an Ordinary Watercourse subject to Consent and at a charge of £0.01 per cubic metre to cover wear and tear on the downstream pumping station.
- Any works proposed within 7m of the edge of the watercourse will also require Consent from the IDB.
- Trenchless techniques are welcomed e.g. thrust boring at least 1 metres below the hard bed of the watercourse which will require Consent for each crossing.

Land Drainage from the gas pipeline

- We would comment that all under-field drainage pipes that are to be reinstated or required are designed to be accepted into the receiving ordinary watercourse systems in terms of existing bed levels and any new outfalls from those systems will require Consent from the IDB.

Kind regards,

**For and on behalf of the Shire Group of Internal Drainage Boards,**

**Paul Jones** BSc (Hons) MSc (Eng) GMICE  
*Engineer to the Board*  
Lead Water Level Management Engineer

---

**From:** Sheikh-Osman, Amina <[amina.sheikh-osman@wsp.com](mailto:amina.sheikh-osman@wsp.com)>  
**Sent:** 23 April 2018 11:03  
**To:** Paul Jones <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>  
**Cc:** [info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)  
**Subject:** RE: Drax Power DCO WFD Screening- Comments Required

Apologies, please see with map attached, a formal response would be greatly appreciated

Thanks,  
Amina

---

**From:** Sheikh-Osman, Amina  
**Sent:** 23 April 2018 09:52  
**To:** 'Paul Jones' <[Paul.Jones@shiregroup-idbs.gov.uk](mailto:Paul.Jones@shiregroup-idbs.gov.uk)>  
**Cc:** 'info@selbyareaidb.org.uk' <[info@selbyareaidb.org.uk](mailto:info@selbyareaidb.org.uk)>; Price, Jon <[Jon.Price@wsp.com](mailto:Jon.Price@wsp.com)>  
**Subject:** Drax Power DCO WFD Screening- Comments Required

Good Morning Paul

WSP have been commissioned by Drax Power Station to carry out the water environment chapter of the EIA and the Flood Risk Assessment. In support of the EIA we have undertaken a WFD Screening of the drains crossed by the scheme, please see attached. I have also attached correspondence from the EA regarding the groundwater element of the WFD and why we have not assessed this.

We look forward to hearing your comments, may I ask that you get back to us at the end of the week?

Kind Regards,

**Amina Sheikh-Osman**

GradCIWEM, BSc (Hons)

Assistant Consultant, Water Engineering, Transport & Infrastructure



6 Devonshire Square  
London  
EC2M 4YE

**JBA Consulting, Epsom House, Chase Park, Redhouse Interchange, Doncaster, South Yorkshire, DN6 7FE. Telephone: +441302 337798**

**WEM Framework Suppliers 2013-2019 and the Shire Group of IDBs is a member of the JBA group of companies.**

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[www.shiregroup-idbs.gov.uk](http://www.shiregroup-idbs.gov.uk)

Louise Markose  
WSP

**Our ref:** RA/2018/138339/02

via email:  
louise.markose@wsp.com

**Date:** 30 April 2018

Dear Louise

**Drax Power Station, Selby, YO8 8PH.**

**Drax Repower WFD screening assessment.**

Thank you for sending us your updated Water Framework Directive (WFD) screening assessment, received on 23 April 2018. We have reviewed this document and we agree with the findings of the screening assessment.

We agree that the proposed works will not have any adverse impacts on hydromorphology or groundwater from the perspective of the Water Framework Directive and that a full WFD assessment will not be required in respect to these issues.

Please note that this response is related to WFD only and does not prejudice any other advice we have provided with respect to environmental constraints within our remit, or your responsibilities to demonstrate that the proposed development will not cause unacceptable impacts to the environment, through the Development Consent Order and Environmental Permitting processes.

We recommend that you discuss WFD implications regarding Rusholme Lane Drain with Selby Area IDB in case they can offer additional advice or if they have any differing views.

If I can be of any further assistance, please don't hesitate to contact me.

Yours sincerely

**Nick Beyer**  
**Planning Specialist**

Telephone: 0203 025 5581  
E-mail: [sp-yorkshire@environment-agency.gov.uk](mailto:sp-yorkshire@environment-agency.gov.uk)  
Address: Lateral, 8 City Walk, Leeds, LS11 9AT

