The Drax Power (Generating Stations) Order

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

Gas Connection Statement

The Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(p) and 6(1)(a)(ii)

Drax Power Limited

Drax Repower Project

Applicant:	DRAX POWER LIMITED
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Glossary

Abbreviation	Description
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 submitted with the DCO Application.
The APFP Regulations	The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.
Application	The DCO Application
The Applicant	Drax Power Ltd.
Associated Development	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: - the up to two gas insulated switchgear banking buildings (described as Work No. 4 in Schedule 1 of the draft DCO); - the natural gas receiving facility and natural gas compression building (described as Work No. 5 in Schedule 1 of the draft DCO); - the AGI (described as Work No. 6 in Schedule 1 of the draft DCO); - the Gas Pipeline (described in Work No. 7 in Schedule 1 of the draft DCO); - the electrical connections to the existing 400 kilovolt National Grid substation (described in Work No. 8 in Schedule 1 of the draft DCO); - temporary construction laydown areas (described in Work No. 9 in Schedule 1 of the draft DCO); - landscaping and biodiversity enhancement measures (described in Work No. 11 in Schedule 1 of the draft DCO); - decommissioning and demolition of sludge lagoons and construction of replacement sludge lagoons (described in Work No. 12 in Schedule 1 of the draft DCO); - removal of existing 132 kilovolt overhead line and associated towers and foundations (described in Work No. 13 in Schedule 1 of the draft DCO); - passing place on Rusholme Lane (described in Work No. 14 in Schedule 1 of the draft DCO); - the Site Reconfiguration Works (described in Work No. 15 in Schedule 1 of the draft DCO); and - further associated development as set out in Schedule 1 of the draft DCO. 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 draft DCO).

Carbon capture readiness	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 submitted with the DCO Application.
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 submitted with the DCO Application.
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.
Consultation Documents	These are "*the documents, plans and maps showing the nature and location of the proposed development*" as referred to in Regulation 4(3)(e) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. With respect to the Proposed Scheme, the Consultation Documents consisted of: the Statement of Community Consultation (SoCC), the Preliminary Environmental Information Report (PEIR) (required pursuant to Regulation 12 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017) including the PEIR Non-Technical Summary, an information leaflet and a project overview report. These documents can be found at Appendices 6.0 and 21.0 of the Consultation Report (document ref. 5.1).
DCO Application	The application for a DCO in respect of the Proposed Scheme.
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.
Electrical connection	In respect of Unit X, underground electrical cables connecting Unit X to the existing 400 kilovolt National Grid substation as described in Work No. 8A of the draft DCO. In respect of Unit Y, underground electrical cables connecting Unit Y to the existing 400 kilovolt National Grid substation and which may include a sealing end compound with overhead conductors and gantry as described in Work No. 8B of the draft DCO; and the removal of an existing 132 kilovolt overhead line and associated towers and foundations. The

	removal of the overhead line is described as Work No. 13 in Schedule 1 of the draft DCO submitted with the DCO Application.
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	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).
Feeder(s)	A number of gas pipelines that make up the National Transmission System (NTS). Multiple Feeders make up the NTS.
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 submitted with the DCO Application.
Gas Pipeline	The approximately 3 km underground pipeline which connects the Gas Receiving Facility to the National Transmission System. The Gas Pipeline is described as Work No. 7 in Schedule 1 of the draft DCO submitted with the DCO Application.
Gas Turbine	Gas turbines produce electricity. Air is drawn into the compressor of the gas turbine and is compressed. The fuel is then injected into the combustion chamber. The mixture of fuel and compressed air is ignited, producing gases at high temperatures. As the gas expands, it rotates the turbine to produce electricity. The gas turbines form part of Work No. 1A (which includes up to two gas turbines in connection with Unit X) and Work No. 2A (which includes up to two gas turbines in connection with Unit Y) in Schedule 1 of the draft DCO submitted with the DCO Application.
Heat Recovery Steam Generators (HRSG)	HRSGs recover the hot flue gases from the Gas Turbines. The heat is used to produce steam that will drive the existing steam turbines. HRSGs are required where the generating station is operating in CCGT mode. The HRSGs form part of Work No. 1A (up to two HRSGs in connection with Unit X) and Work No. 2A (up to two HRSGs in connection with Unit Y) in Schedule 1 of the draft DCO submitted with the DCO Application.

Laydown Area	Areas that will be used during construction for the temporary locating of construction offices, warehouses, workshops, open air storage areas and car parking. The main construction laydown areas are described in Work No. 9 in Schedule 1 of the draft DCO submitted with the DCO Application, whilst construction laydown areas for the construction of the AGI are described in Work Nos. 6C and D, and for the construction of the Gas Pipeline are described in Work No. 7B in Schedule 1 of the draft DCO.
Local Planning Authority (LPA)	The local authority or council that is empowered by law to exercise statutory town planning functions for a particular area of the United Kingdom.
Minimum Offtake Connection (MOC)	The Minimum Offtake Connection will be part of the AGI to be owned and operated by National Grid. The MOC will provide the gas connection to the National Grid Natural Transmission System. The MOC is described as Work No. 6A in Schedule 1 of the draft DCO submitted with the DCO Application.
National Planning Policy Framework (NPPF)	A document that sets out government's planning policies for England and how these are expected to be applied.
National Policy Statement (NPS)	Overarching policy designated under the Planning Act 2008 concerning the planning and consenting of NSIPs in the UK.
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. 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.
Open Cycle Gas Turbine (OCGT)	An open cycle gas turbine converts 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.
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.

Pipeline Inspection Gauge (PIG) Trap Facility (PTF)	System to allow remote cleaning of long stretches of pipeline. Will have a launching (PTF-L) and a receiving (PTF-R) either side of the pipeline stretch.
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: 1. The Site Reconfiguration Works are proposed to take place; 2. The temporary construction Laydown Area is to be located described in Work No. 9A in Schedule 1 of the draft DCO submitted with the DCO Application; 3. The Generating station equipment is proposed to be located; 4. The Electrical connection is proposed to be located; and 5. The decommissioning and demolition of sludge lagoons and construction of replacement sludge lagoons is proposed to take place, described as Work No. 12 in Schedule 1 of the draft DCO submitted with the DCO Application.
Proposed Scheme	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. 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: 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).

Each unit would have (subject to technology and commercial considerations) a battery energy storage facility with a capacity of up to 100 MW per unit, resulting in a combined battery energy storage capacity of up to 200 MW. All battery units would be stored in a single building.

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.

Drax is seeking consent for the flexibility to either:

- Repower one unit (either Unit 5 or 6) and construct Unit X as a gas fired generating station; or
- Repower both Units 5 and 6 and construct Unit X and Unit Y as two gas fired generating stations.

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 of up to 100 MW storage capacity would be constructed. The size of the building housing the battery storage facility would not change, as the building could house one larger battery which would allow the 100 MW output to be sustained for a longer duration. However, the fuel gas station and gas insulated switchgear would be smaller.

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.

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.

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.

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.

The Proposed Scheme includes the Site Reconfiguration Works and the Electrical connection.

Drax's Proposed Scheme is described in more detail in Chapter 3 (Site and Project Description) of the ES Volume 1 (document reference 6.1).

	Schedule 1 of the draft DCO submitted with the DCO Application lists out the elements comprised within the Proposed Scheme.
Rusholme Lane Area	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 draft DCO submitted with the DCO Application).
Scoping	An exercise undertaken pursuant to regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 to determine the topics to be addressed within the Environmental Statement.
Significance	A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.
Site	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 draft DCO submitted with the DCO Application) and the Pipeline Area.
Site Boundary	The Site Boundary refers to the outer perimeter of the Site.
Site Reconfiguration Works / Stage 0	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: 1. Demolition of the private squash court (no replacement), Learning Centre (consolidated into existing facilities); and 2. Demolition of and reconstruction of car parking, turbine outage stores, contractor's compounds and welfare facilities. 3. Construction of a cooling water spray screen between relocated facilities and the southern cooling towers. The Site Reconfiguration Works are the subject of a separate planning application under the TCPA (applied for in February 2018 and given reference no. PP-06688208v1) and are also included as part of the Proposed Scheme in the DCO Application, and may be carried out under either: 1. Any TCPA planning permission that may be granted; or 2. The Order. The Site Reconfiguration Works are described in Work No. 15 in Schedule 1 of the draft DCO submitted with the DCO Application.
Site of Importance for Nature Conservation (SINC)	Sites of Importance for Nature Conservation are usually selected within a local authority area and support both locally and nationally threatened wildlife. Many sites will contain habitats and species that are priorities under the county or UK Biodiversity Action Plans (BAP).
Uniform Network Code (UNC)	The UNC is the hub around which the competitive gas industry revolves, comprising a legal and contractual framework to supply and transport gas.

	It has a common set of rules that ensure that competition can be facilitated on level terms. It governs processes, such as the balancing of the gas system, network planning, and the allocation of network capacity.
Unit X	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, with a capability of up to 100MW. The total output from Unit X would be 1,900MW. Unit X is described in Work No. 1 of Schedule 1 to the draft DCO submitted with the DCO Application.
Unit Y	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, with a capability of up to 100MW. The total output from Unit Y would be 1,900MW. Unit Y is described in Work No. 2 of Schedule 1 to the draft DCO submitted with the DCO Application.

Abbreviations

Abbreviation	Term in full
AGI	Above Ground Installation
AOD	Above Ordnance Datum
APFP	Applications: Prescribed Forms and Procedures
AUT	Automatic Ultrasonic Testing
BPD	Building Proximity Distance
CCGT	Combined Cycle Gas Turbine
DBA	Design and Build Agreement
DCO	Development Consent Order
DECC	Department for Energy and Climate Change
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESV	Emergency Shutdown Valve
FCO	Full Connection Offer
GRF	Gas Receiving Facility
HSE	Health & Safety Executive
HRSGs	Heat Recovery Steam Generators
HSE	Health and Safety Executive
IGE	Institute of Gas Engineers
LPA	Local Planning Authority
LTS	Local Transmission System
m	Meters
MOC	Minimum Offtake Connection
MW	Megawatts
NG	National Grid
NGET	National Grid Electricity Transmission
NGG	National Grid Gas Plc
NH3	Ammonia
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
NTS	National Transmission System
OCGT	Open Cycle Gas Turbine

OD	Outside Diameter
OHL	Overhead Line
PA 2008	Planning Act 2008 (as amended)
PARCA	Planning and Advanced Reservation of Capacity Agreement
PIG	Pipeline Inspection Gauge
PINS	Planning Inspectorate
PRMS	Pressure Reduction and Metering Station
PTF	PIG Trap Facility
PTF-L	PIG Trap Launching station
ROV	Remotely Operated Valve
SoS	Secretary of State
UNC	Uniform Network Code

Contents

EXECUTIVE SUMMARY

1. This Gas Connection Statement has been prepared by WSP UK Limited on behalf of Drax Power Limited (Drax or the Applicant), to support an Application for a Development Consent Order (DCO).

2. The Proposed Scheme will provide up to 1,800 MW or up to 3,600 MW of electrical generation capacity (depending on whether one or both of Units 5 and 6 of the Existing Drax Power Station Complex are repowered). The term 'repowered' means the existing coal-fired units would be decommissioned and replaced with newly constructed gas-fired units utilising the existing steam turbines and cooling system. Should one unit be repowered, then a single gas fired generating station will be constructed (known as Unit X) with a capacity of up to 1,800 MW, comprising up to two gas turbines and up to two Heat Recovery Steam Generators (HRSGs). If two units are repowered, then two gas fired generating stations will be constructed (known as Unit X and Unit Y) each with a capacity of up to 1,800 MW (so up to 3,600 MW combined) and each comprising of up two gas turbines and up to two HRSGs and utilising the existing steam turbines and cooling system. Each unit would also have a battery storage capability of up to 100 MW (subject to technology and commercial considerations). As a result if both units are repowered, the new gas-fired generating stations would have a combined capacity of up to 3,600 MW and a combined battery storage capacity of up to 200 MW (totalling a capacity of up to 3,800 MW).

3. In order to repower to gas, a new Gas Pipeline needs to be constructed from the Power Station Site to the National Transmission System (NTS).

   The purpose of this Gas Connection Statement is to outline the process for connecting to the NTS and the contractual agreements that need to be in place for this to occur.

4. The Applicant has submitted applications to the National Grid Gas plc (NGG) to seek confirmation that there is sufficient gas capacity to supply the Proposed Scheme and a separate application for connection of the Gas Pipeline to the NTS.

5. The connection point to the NTS will be at National Grid's (NG's) Feeder 29 and an above ground installation (AGI) will be built at this connection point to enable gas to be taken from the NTS. Gas will be transferred from the AGI to the Proposed Scheme by a 610 mm (OD) buried Gas Pipeline of approximately 3 km in length.

6. Whilst the Applicant's preference is to seek all necessary land and rights through voluntary negotiation, it is recognised that this may not be possible. Accordingly, the draft DCO (document reference 3.1) for the Proposed Scheme includes powers to compulsorily acquire land and create new rights to allow the Applicant and persons authorised on its behalf to enter on to the land within the Pipeline Construction Area and the Pipeline Operational Area for all purposes connected with the construction, use and maintenance of the Gas Pipeline and its connections.

1 INTRODUCTION

1.1.1. This Gas Connection Statement has been prepared by WSP UK Limited on behalf of Drax Power Limited (Drax or the Applicant), to support the DCO Application.

1.1.2. The Applicant is proposing to repower up to two existing coal-fired units (known as Unit 5 and Unit 6) with gas – this means the existing coal-fired units would be decommissioned and replaced with newly constructed gas-fired units utilising some of the existing infrastructure. Each unit, which is a new gas fired generating station in its own right and are termed Unit X and Unit Y, would comprise combined cycle gas turbine (CCGT) and open cycle gas turbine (OCGT) technology. Each new gas generating unit would use existing infrastructure, including the cooling system and steam turbines, and would each have a new capacity of up to 1,800 MW, replacing existing units each with a capacity of up to 660 MW. Each unit would also have a battery storage capability of up to 100 MW (subject to technology and commercial considerations). Should both units be repowered, the new gas-fired units / generating stations would have a combined capacity of up to 3,600 MW and a combined battery storage capacity of up to 200 MW (totalling a capacity of up to 3,800 MW).

1.1.3. The Applicant is seeking consent for the flexibility to either repower one unit (i.e. construct a single generating station known as Unit X) with an up to 1,800 MW generating capacity and an up to 100 MW battery storage capacity or to repower two units (two generating stations (Unit X and Unit Y) each with an up to 1,800 MW generating capacity and each with its own up to 100 MW battery storage capacity). The decision as to whether Drax repowers two units and constructs two gas fired generating stations as opposed to a single unit is a commercial decision that can only be taken post any consent being granted.

1.1.4. A connection to the electrical network via the existing National Grid (NG) Substation on the Power Station Site will be provided.

1.1.5. In order to repower to gas, a new Gas Pipeline needs to be constructed from Drax Power Station to the National Transmission System (NTS).

1.1.6. This Gas Connection Statement has been submitted under regulation 5(2)(p) and 6(1)(a)(ii) of the APFP Regulations (Ref. 1.1). Regulation 6(1)(a)(ii) requires the Applicant to submit a statement of who will be responsible for designing and building the Gas Pipeline connection to the NTS.

1.1.7. The purpose of this Gas Connection Statement is to outline the process for connecting to the NTS and the contractual agreements that need to be in place for this to occur.

1.1.8. A description of the work required for the Gas Pipeline connection to the NTS and the associated Gas Pipeline route is provided and the responsibility for the design and construction of the Gas Pipeline and its connections has been outlined.

1.1.9. In order to construct the Gas Pipeline and its connection, acquisition of land and rights (both permanent and temporary) are required. The acquisition powers that the Applicant is seeking are summarised in section 5 of this statement, fully described in the Book of Reference (document reference 4.3) and are justified in the Statement of Reasons (document reference 4.1).

2 PROJECT DESCRIPTION

2.1 The Applicant

2.1.1. The Applicant is Drax Power Limited. Drax Power Station is owned and managed by the Applicant, who is part of the Drax Group Plc, one of the UK's largest energy producers.

2.2 Site Description

Existing Drax Power Station Complex

2.2.1. Drax Power Station is a large power station, comprising originally of six coal-fired units. It was originally built, owned and operated by the Central Electricity Generating Board and had a capacity of just under 2,000 MW when Phase 1 was completed in 1975. Its current capacity is 4,000 MW after the construction of Phase 2 in 1986.

2.2.2. Three of the original six coal-fired units are now converted to biomass (Units 1-3) and this is assessed as the current baseline in the Environmental Statement (ES) (document reference 6.1). By the latter half of 2018, four units (Units 1-4) will run on biomass with only two units (Units 5 and 6) running on coal. One or both of Units 5 and 6 will be repowered as part of the Proposed Scheme, this means the existing coal-fired units would be decommissioned and replaced with newly constructed gas-fired units utilising some of the existing infrastructure. The area within the Existing Drax Power Station Complex where development is proposed is referred to as the Power Station Site and is approximately 53.4 ha.

Pipeline Area

2.2.3. The Gas Pipeline route is approximately 3 km in length and crosses agricultural land to the east of the Existing Drax Power Station Complex. The land within the Pipeline Construction Area is 25.4 ha and the land within the Pipeline Operational Area is 2.4 ha.

2.2.4. An additional area is located on Rusholme Lane (Rusholme Lane Area) to accommodate a potential passing place for traffic during construction of the Gas Pipeline. This is considered to be part of the Pipeline Area.

Site Boundary

2.2.5. The Site is approximately 78.9 ha and lies approximately 4 m Above Ordnance Datum (AOD).

2.2.6. The Site Boundary (depicted with a red line in Chapter 1 (Introduction) Figure 1.1 of the ES) represents the maximum extent of all potential permanent and temporary works required as part of the Proposed Scheme.

2.2.7. The Power Station Site, the Carbon capture readiness reserve space and the Pipeline Area (including the Rusholme Lane Area) have been divided into a number of Development Parcels shown on Chapter 1 (Introduction) Figure 1.3. of the ES.

2.2.8. The current land uses at these development parcels are described in Table 3-1 of the ES Chapter 3 (Site and Project Description).

2.3 The Proposed Scheme

2.3.1. The Proposed Scheme is 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.

2.3.2. 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).

2.3.3. Each gas generating station (or unit) 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 generating station (or unit). Each generating station (or 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 5 and 6 be repowered, a combined capacity of up to 3,600 MW. The new gas turbine generating stations (or units) have been designated the terms "Unit X" and "Unit Y".

2.3.4. Each of Unit X and Unit Y would have (subject to technology and commercial considerations) a battery energy storage facility with a capacity of up to 100 MW per Unit, resulting in a combined battery energy storage capacity of up to 200 MW. The two battery energy storage facilities would be stored in a single building.

2.3.5. The total combined capacity of the two gas fired generating stations, Unit X and Unit Y, and two battery storage facilities (i.e. the total combined capacity of the Proposed Scheme) is therefore 3,800 MW.

2.3.6. The DCO seeks consent for the following flexibility:

- Repowering of either Unit 5 or 6 and construction of Unit X as a gas fired generating station (this would leave either Unit 5 or 6 (depending on which had been repowered) as a coal-fired unit); or
- Repowering of both Units 5 and 6 and construction of Unit X and Unit Y as two gas fired generating stations.

2.3.7. In the event that a single unit is repowered and Unit X constructed, up to two gas turbines and up to two HRSGs and (subject to technology and commercial considerations) a battery energy storage facility of up to 100 MW storage capacity would be constructed. The size of the building housing the battery storage facility would not change, as the building could house sufficient battery capacity to allow the 100 MW output to be sustained for a longer duration. However, the fuel gas station and gas insulated switchgear required for the Gas Pipeline would be smaller.

2.3.8. In the event that two units are repowered and both Unit X and Unit Y are constructed, then construction works would be undertaken consecutively rather than concurrently. It is

assumed for the purposes of the ES that there would be a gap of a year between construction periods, but this could be longer depending on commercial considerations. Unit Y would mirror Unit X, with up to two gas turbines and up to two HRSGs and (subject to technology and commercial considerations) a battery energy storage facility of up to 100 MW storage capacity which would be housed in the building constructed for the battery for Unit X.

2.3.9. In order to repower to gas, a new Gas Pipeline would be constructed from the Existing Drax Power Station Complex to the NTS operated by NG. Pipeline infrastructure would be the same whether Unit X was constructed or whether Unit X and Unit Y was constructed.

2.3.10. 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.

2.3.11. At the connection to the NTS there will be an above ground installation (AGI) south of Rusholme Lane. The AGI involves a PIG Trap Launching station (PTF-L) which will be operated by Drax, and a Minimum Offtake Connection (MOC), which will be operated by NG.

2.3.12. A full description of the Proposed Scheme and the Site is contained in Chapter 3 (Site and Project Description) of the ES.

3 CONTRACTUAL AGREEMENTS

3.1.1. The Applicant submitted a Planning and Advanced Reservation of Capacity Agreement (PARCA) application to National Grid Gas plc (NGG) on 7 March 2018. The PARCA application seeks confirmation from NGG that there is sufficient gas capacity to supply the Proposed Scheme and states the intention of the Applicant to reserve such capacity.

3.1.2. The Applicant also submitted a connection application to NGG on 1 March 2018 for the NG MOC which facilitates the connection of the Gas Pipeline to the NTS (thereby connecting the Proposed Scheme to the NTS).

3.1.3. Upon submission of the connection application to NGG, NGG will have circa six months to provide the Applicant with a Full Connection Offer (FCO).The FCO will detail the physical construction costs, programme of works and the layout of the proposed connection of the Gas Pipeline to the NTS. The Applicant will have a further three months to decide whether to accept the terms of the offer.

3.1.4. Following acceptance of the FCO, the Applicant will enter into a Design and Build Agreement (DBA) with NGG for the construction of the new MOC. The DBA will set out the cost and timescales for delivery of the MOC ensuring full delivery (mobilisation, construction and commissioning) is prior to the target first operation date for the Proposed Scheme.

4 RESPONSIBILITIES FOR DESIGNING AND BUILDING THE GAS CONNECTION

4.1 Background

4.1.1. The NTS supplies gas to industrial consumers and power stations and feeds into the Local Transmission System (LTS). The NTS transmits large volumes of gas at high pressure around the country through a number of Feeders. Only the NTS can meet the minimum supply pressure requirements for the Proposed Scheme.

4.1.2. The Applicant commissioned a feasibility study in which connection to two Feeders were assessed (Feeder 7 and Feeder 29). An assessment was carried out looking at different connection points to the Feeders and the subsequent pipeline routes to the Power Station Site. Connection to Feeder 29 was identified to be the most suitable connection for the Proposed Scheme due to the following reasons:

- Feeder 29 does not currently have any power stations connected to it.
- More preferable for physical MOC / PTF location as it is a green field site.
- More preferable for ramp rates >50MWth/min2.
- More preferable for load availability.
- More preferable for potentially higher anticipated normal minimum operating pressures.

4.1.3. The connection to Feeder 29 has been discussed with NGG and they have indicated this is a favourable point of connection.

4.1.4. The connection point to Feeder 29 is approximately 3 km east of the Power Station Site, south of the River Ouse and south of Rusholme Lane.

4.1.5. Further information on the alternative connection options for the Gas Pipeline, including the alternative route options considered, is contained in the ES. An explanation of consultation feedback received on the Gas Pipeline and how it has been taken into account is contained in the Consultation Documents, specifically the Consultation Report (document reference 5.1).

4.2 Design of the Gas Pipeline

4.2.1. The Applicant will be responsible for the design of the Gas Pipeline.

4.2.2. The Gas Pipeline will be designed, constructed and tested to comply with the Institute of Gas Engineers' (IGE) Recommendations on Transmission and Distribution Practice – IGE/TD/1: Edition 5, 2009 - Steel Pipelines and Associated Installations for High Pressure Gas Transmission (IGE/TD/1) (Ref. 1.2).

4.2.3. Preliminary calculations indicate a pipeline diameter of 610 mm Outside Diameter (OD) is required to minimise gas velocity whilst maintaining sufficient pressure.

4.2.4. The wall thickness of the Gas Pipeline will comply with the requirements of IGE/TD/1, which defines the minimum safe separation distance between a high pressure gas pipeline and normally inhabited buildings / major roads / major railways. This minimum safe separation distance is known as the Building Proximity Distance (BPD). If normally inhabited buildings / major roads / major railways are closer than 1 BPD (i.e. the Gas Pipeline is in an area

where additional protection is required), thicker wall steel pipe (known as proximity pipe) would be used. The exact locations and lengths of where thicker wall steel pipe would be used would be confirmed throughout the assessment and detailed design stages.

4.2.5. The Gas Pipeline will be buried to a depth of cover which is in accordance with NG standards. For example, depths of cover would be:

- No less than 1.2 m in agricultural land;
- No less than 2 m under road crossings; and
- No less than 1.7 m under water crossings.

4.2.6. For the purposes of construction, the Gas Pipeline would be accessed via Wren Hall Lane, which runs across the Gas Pipeline route. Wren Hall Lane can be accessed from Carr Lane which runs alongside the Gas Pipeline.

4.3 Design of the Above Ground Gas Installations

4.3.1. The following above ground gas installations will be designed and constructed as part of the Proposed Scheme:

- National Grid MOC;
- PIG Trap Facility (PTF-L) – Launching; and
- PIG Trap Facility (PTF-R) – Receiving.

4.3.2. The Gas Pipeline connects to the NTS at the MOC.

4.3.3. The MOC is a requirement of any connection to the National Grid and is the exit point of the system as defined under the Uniform Network Code (UNC). The MOC will be designed, built, owned and operated by NGG, however the land for this facility must be acquired on behalf of NGG by the Applicant as set out in section 5 of this of this Statement. The MOC will be secured in a fenced off compound (measuring approximately 30 m x 30 m) and will contain:

- A Remotely Operated Valve (ROV) with bypass;
- A Control and Instrumentation kiosk; and
- An Electrical connection kiosk.

4.3.4. The PTF-L compound will be designed, built, owned and operated by the Applicant. The compound will be secured in a fenced off compound (measuring approximately 30 m x 40 m) adjacent to the MOC and will contain:

- Station Isolation Valve with bypass;
- ROV with bypass (possible Emergency Shutdown Valve (ESV));
- Temporary PIG Trap Base;
- Temporary PIG Trap launching flanged connection;
- Control and Instrumentation kiosk; and
- Electrical connection kiosk.

4.3.5. The PTF–R facility will be designed, built, owned and operated by the Applicant. The facility will be contained within the gas receiving station near to the Power Station Site and will contain:

- Station Isolation Valve with bypass;

- ROV with bypass (possible ESV);
- Temporary PIG Trap Base;
- Temporary PIG Trap receiving flanged connection;
- Control and Instrumentation kiosk; and
- Electrical connection kiosk.

4.4 The Gas Connection Pipeline Route Corridor

4.4.1. The Gas Pipeline route is approximately 3 km in length including three minor road crossing, three minor water crossings (e.g. field drains) and three crossings below electrical overhead lines (OHLs). There are no major road crossings or major water crossings.

4.4.2. The Gas Pipeline will exit the PTF-L and after travelling north, reaches the first minor road crossing at Rusholme Lane. The lane has a very low traffic density and so construction will be likely done by an open cut crossing.

4.4.3. After the first minor road crossing, the Gas Pipeline turns and begins to travel west and towards the first minor water crossing, a drainage ditch. An open cut crossing is the preferred technique as the crossing point is a shallow ditch, with no water flow (as indicated by environmental surveys and visual inspection). Further investigation into the local significance of the drainage ditch may require that a trenchless crossing (Auger Bore) be considered.

4.4.4. The Gas Pipeline continues west and then turns north-west where it reaches Main Road (single carriageway road) which has a field drain alongside it (minor water crossing). Due to the density of traffic along Main Road and the addition of the field drain alongside, the crossing would likely require a trenchless crossing utilising an Auger Bore.

4.4.5. The Gas Pipeline continues north-west and will cross under a set of 132 kV electrical OHLs. The crossing will be a standard open cut crossing technique in accordance with guidelines issued by NG and the Health and Safety Executive (HSE).

4.4.6. After crossing under the OHLs, the Gas Pipeline turns and heads west for approximately 100 m before dropping south to avoid a small woodland which contains trees that are protected by a Tree Preservation Order. South of the protected woodland, the Gas Pipeline turns and begins to travel west towards a drainage ditch (minor water crossing). An open cut crossing is the preferred technique for this minor water crossing. Further investigation into the local significance of the drainage ditch may require that a trenchless crossing (Auger Bore) be considered.

4.4.7. The Gas Pipeline continues west and will cross under another set of OHLs. The crossing will be a standard open cut crossing technique in accordance with guidelines issued by NG and HSE.

4.4.8. Soon after crossing underneath the OHLs, the Gas Pipeline crosses Wren Hall Lane, a minor road crossing classed as a low density track which is mainly used by farm vehicles and a single premise is located on the Lane. The crossing of the track would only require an open cut crossing technique due to the low traffic density.

4.4.9. The Gas Pipeline continues west towards the Power Station Site. The route will pass south of an existing electrical pylon and then under the associated 132 kV electrical OHLs. The

crossing under the OHLs would only require a controlled open cut crossing. Consideration will need to be given to guidelines issued by NG and the HSE for both construction underneath the OHLs and within the vicinity of electric pylons. The Gas Pipeline continues west and enters into the PTF-R Facility.

4.4.10. The Gas Pipeline route and location of the AGI (containing the MOC and the PTF-L compound) and the GRF (containing the PTF-R Facility) are shown on the Works Plans (document reference 2.3).

4.5 Construction

4.5.1. The Applicant will be responsible for the construction of the Gas Pipeline that is part of the AGI containing the PTF-L compound and the GRF (containing the PTF-R Facility). Construction of that part of the AGI containing the MOC will be carried out under NGG's instruction by a NG approved contractor.

4.5.2. Construction of the Gas Pipeline will be undertaken within a temporarily fenced-off strip of land, which is referred to as the "working width". The working width can be up to 30 m wide, with the Gas Pipeline offset from the centre line to allow for construction access. A 30m working width is typical for constructing large diameter pipelines greater than 900 mm, however, it is highly likely that the working width required by the Gas Pipeline will be less. To accommodate the "working width", the Applicant is seeking the necessary land and rights for an area called the Pipeline Construction Area.

4.5.3. A detailed design and construction programme has not yet been finalised, therefore a degree of flexibility has been included within the Pipeline Construction Area. To ensure that there is sufficient flexibility for any unforeseen impediments once intrusive site surveys are undertaken following any grant of the DCO, the Pipeline Construction Area incorporates a 50 m width for the Gas Pipeline (expanded at the crossing locations detailed above) for the temporary construction laydown associated with the Gas Pipeline.

4.5.4. Where possible and practicable, access to the “working width” will be agreed with the Local Planning Authority (LPA), land owners and land occupiers (including existing service / utility owners) at defined points. The points of access will be carefully controlled and signposted. However, in the event that voluntary access cannot be agreed, the Applicant is seeking the necessary powers within the DCO Application.

4.5.5. A trench will be excavated to a depth that will allow the Gas Pipeline to be buried with a minimum depth of cover which is in accordance with IGE/TD/1.

4.5.6. Utilisation of standard factory applied coatings will generally ensure the Gas Pipeline is protected from stone and flints. However, where field pipe coatings have been applied or aggressive ground conditions have been identified, a bed of sand may be used to provide additional padding. The trench will be backfilled with the excavated subsoil following construction.

4.5.7. The Gas Pipeline is likely to be constructed from pre-coated lengths of steel pipe which are circa 12 m long.

4.5.8. Once required, the steel pipes would be transported from a temporary pipeline storage yard near to the site to the working width and laid on wooden sleepers (skids) running parallel to the trench.

4.5.9. The steel pipes will be welded together to form a continuous steel pipeline. Each weld could be inspected using either X-Radiography or Automatic Ultrasonic Testing (AUT). Any faults detected will be repaired or cut out and replaced and then re-inspected.

4.5.10. The steel pipes arrive on site usually 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.

4.5.11. The pipe coating will then be tested along the whole of its length to detect any damage or other defects. Any defects would then be repaired and re-tested immediately prior to ditching.

4.5.12. For a pipeline of this nature a permanent easement width of approximately 15 m (centred on the pipeline) would be typical.

4.6 Pipeline Safety

4.6.1. Construction of the Gas Pipeline will adhere to the following documents:

- HSE guidance document HS(G) 47 – Avoiding Danger from Underground Services (Ref. 1.3);
- HSE guidance document HS(GS) 6 – Avoiding danger from overhead power lines (Ref. 1.4); and
- NG standard T/SP/SSW/22 – Specification for Safe Working in the Vicinity of NG High Pressure Gas Pipelines and Associated Installations – Requirements for Third Parties (Ref. 1.5).

4.7 Operation and Maintenance

4.7.1. The Applicant will be responsible for the operation and maintenance of the Gas Pipeline that is part of the AGI containing the PTF-L compound and the GRF (containing the PTF-R Facility). NG will be responsible for the operation and maintenance of that part of the AGI containing the MOC compound.

4.7.2. To enable this split in responsibility, the draft DCO submitted with the DCO Application provides for NG to have the benefit of these works. Article 6 of the draft DCO provides that both the undertaker and NGG will have the benefit of work no. 6A, being the AGI.

4.7.3. The AGI and the GRF will be unmanned but with an interface with the Proposed Scheme's control room. The AGI and the GRF will be equipped to allow inspections and maintenance during plant operation. Access during operation to the AGI will be from newly built access road from Rusholme Lane, which will provide shared access for the Applicant to access the PTF-R Facility and NG to access the MOC. Access during operation to the GRF will be from a new access from New Road.

5 ACQUISITION OF LAND AND RIGHTS

5.1.1. Whilst the Applicant's preference is to seek all necessary land and rights through voluntary negotiation, it is recognised that this may not be possible. Accordingly, the draft DCO for the Proposed Scheme (document reference 3.1) includes powers to compulsorily acquire land and create new rights to allow the Applicant and persons authorised on its behalf to enter on to the land within the Pipeline Construction Area and the Pipeline Operational Area for all purposes connected with the construction, use and maintenance of the Gas Pipeline and its connections.

5.1.2. Regarding the AGI (containing the MOC and PFT–L Facility), the Applicant requires the power to acquire the freehold ownership of the land on which the AGI is to be constructed together with the freehold of the land, and right to create a new access, for the new access road leading from Rusholme Lane to the AGI. To assist in the construction of the AGI, temporary use powers are also required over land.

5.1.3. Regarding the GRF, the Applicant requires the power to acquire the freehold ownership of the land on which the GRF is to be constructed together with the freehold of the land, and right to create a new access, from New Road to the GRF. To assist in the construction of the GRF, temporary use powers are also required over land.

5.1.4. Regarding the Gas Pipeline; the Applicant requires the power to acquire new rights to install, retain, use and maintain the Gas Pipeline along the full route of the Gas Pipeline. To facilitate this, a permanent easement of approximately 15 m width will be required along the full length of the Gas Pipeline. Temporary possession powers are also sought to enable the construction of the Gas Pipeline.

5.1.5. The land and rights required are described in more detail in the draft DCO (document reference 3.1), Book of Reference (document reference 4.3), shown on the Land Plans (document reference 2.2) and are justified in the Statement of Reasons (document reference 4.1).

6 DEVELOPMENT CONSENT FOR THE CONNECTION WORKS

6.1.1. The Gas Pipeline and its connections are classed as Associated Development and as such can be included within the DCO Application. No separate planning permission is required.

7 CONCLUSION

7.1.1. This Gas Connection Statement has demonstrated that:

- There is no reason why a gas connection would not be possible for the Proposed Scheme.

- The Gas Pipeline, the AGI and the GRF are included within the DCO Application (and assessed as part of the associated Environmental Impact Assessment (EIA)) and are technically and environmentally feasible.
- The necessary agreements are being secured through the PARCA process and a connection agreement for the MOC will be concluded between the Applicant and NGG
- Appropriate powers are included in the draft DCO to facilitate the delivery of the Gas Pipeline, the AGI and the GRF.

REFERENCES

- Ref.1.1 The Infrastructure Planning (Applications: Prescribed Forms and Procedures) 2009.
- Ref. 1.2 Institute of Gas Engineers' Recommendations on Transmission and Distribution Practice – IGE/TD/1: Edition 5, 2009 – Steel Pipelines and Associated Installations for High Pressure Gas Transmission (IGE/TD/1).
- Re. 1.3 Health and Safety Executive guidance document HS(G) 47 – Avoiding Danger from Underground Services.
- Ref. 1.4 Health and Safety Executive guidance document HS(GS) 6 – Avoiding danger from overhead power lines.
- Ref. 1.5 National Grid standard T/SP/SSW/22 – Specification for Safe Working in the Vicinity of National Grid High Pressure Gas Pipelines and Associated Installations – Requirements for Third Parties.