



# **ENVIRONMENTAL STATEMENT – VOLUME 3 – APPENDIX 8.11**

## **Reptile Survey Report – Repower**

### **Drax Bioenergy with Carbon Capture and Storage**

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations, 2009 - Regulation 5(2)(a)

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# The Drax Power (Generating Stations) Order

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

## Supplementary Environmental Information - Reptile Survey

(Submitted for Deadline 1)



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

## Drax Power Limited

Drax Repower Project

Applicant: DRAX POWER LIMITED  
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## Glossary

Term	Definition
Above Ground Installation (AGI)	<p>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.</p> <p>The AGI is described as Work No. 6 in Schedule 1 of the draft DCO submitted with the DCO Application.</p>
Baseline	A reference level of existing environmental conditions against which a project is measured and controlled.
Biodiversity	Abbreviated form of 'biological diversity' referring to variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part.
Biodiversity Action Plan (BAP)	Plans which set specific, measurable, achievable, realistic and time bound conservation targets for species and habitats. The UK BAP is the UK Government's response to the Convention on Biological Diversity (CBD) signed in 1992. More information is available at <a href="http://www.ukbap.org.uk">www.ukbap.org.uk</a>
Chartered Institute of Ecology and Environmental Management (CIEEM)	The professional membership body representing and supporting Ecologists and Environmental professionals in the UK, Ireland and abroad. Previously known as Institute of Ecology and Environmental Management (IEEM).
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).
DCO Application	The application for a DCO in respect of the Proposed Scheme.
Development Parcels	Development areas A to K (as per the Proposed Scheme).
Drax Power Station	The existing biomass and coal fired power generation facility at the Existing Drax Power Station Complex.
Ecological Impact Assessment (EcIA)	A recommended procedure for the ecological component of Environmental Impact Assessment.
Effect	The consequence of an impact on the environment.
Environmental Impact	A systematic means of assessing a development project's likely significant environmental effects undertaken in accordance with the

Term	Definition
Assessment (EIA)	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).
European Commission (EC)	The executive body of the European Union responsible for proposing legislation, enforcing European law, setting objectives and priorities for action, negotiating trade agreements and managing implementing European Union policies and the budget.
European Protected Species (EPS)	European Protected Species are animals and plants that receive protection under the Conservation of Habitats and Species Regulations 2017, in addition to the Wildlife and Countryside Act 1981 (as amended).
European Protected Species (EPS) Derogation Licence	A licence issued to permit an activity affecting European Protected Species that would otherwise be an offence under the Habitats Regulations.
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 draft DCO submitted with the DCO Application.</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 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.

Term	Definition
	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.
Generating Station Equipment	Equipment comprising electricity generating stations, battery storage facilities and gas insulated switchgear buildings. The Generating station equipment is described as Work Nos. 1, 2, 3 and 4 in Schedule 1 of the draft DCO submitted with the DCO Application.
Geographical Information System	A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.
Habitat	The environment in which populations or individual species live or grow.
Habitats Directive	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
Habitat Regulations	The Conservation of Habitats and Species Regulations 2017, which implement the Habitats Directive.
Impact	A physical or measurable change to the environment attributable to the Proposed Scheme.
Important Ecological Features	Species and habitats present within the zone of influence of the Proposed Scheme that are of sufficiently high value that an effect upon them as a result of the Proposed Scheme could be considered to be significant.
Indirect Effects	Effects that result indirectly from the proposed project, in this case the Proposed Scheme, as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in time from the source of the effects.
Landscape	An area, as perceived by people, the character of which is a result of the action and interaction of natural and/or human factors.
Local Biodiversity Action Plan (LBAP)	A strategy and set of objectives aimed at conserving, monitoring and raising awareness of the fauna, flora and habitats- collectively referred to as biodiversity- usually along local authority boundary lines.
Local Development Plan (LDP)	The set of documents and plans that sets out the local authority's policies and proposals for the development and use of land in their area. The Local Development Plan for Selby District Council is the Selby District Core Strategy Local Plan 2013 (CS) and the Selby District Local Plan 2005 (SDLP).

Term	Definition
Mitigation Hierarchy	The mitigation hierarchy is to first try to avoid, then prevent and then reduce likely significant adverse effects on the environment and, if possible, offset likely significant adverse effects on the environment.
Mitigation Measures	Actions proposed to avoid, reduce and where possible offset likely significant adverse effects arising from the whole or specific elements of a development.
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 Statements (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	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.
The Order	The DCO which, if made by the SoS, will authorise the construction and operation of the Proposed Scheme and which will be known as “The Drax Power (Generating Stations) Order”.
Ordnance Survey (OS)	Great Britain's national mapping agency.
Phase 1 Habitat Survey	An ecological survey technique that provides a standardised system to record vegetation and wildlife habitats. It enables a basic assessment of habitat type and its potential importance for nature conservation.
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.
Preliminary Ecological Appraisal (PEA)	Preliminary ecological surveys have a range of purposes; one key use is to gather data on existing conditions, often with the intention of conducting a preliminary assessment of likely impacts of development schemes or establishing the baseline for future monitoring. As a precursor to a proposed project, some evaluation is usually made within these appraisals of the ecological features present, as well as scoping for notable species or habitats, identification of potential constraints to

Term	Definition
	proposed development schemes and recommendations for mitigation.
Receptor	A component of the natural, created or built environment such as a human being, water, air, a building, or a plant that has the potential to be affected by the Proposed Scheme.
Repower	Decommissioning of existing coal-fired units and replacement with newly constructed gas-fired units utilising some of the existing infrastructure.
Selby District Core Strategy Local Plan 2013 (CS)	The first part of the replacement for the Selby District Local Plan 2005. This sets out the high level strategic policies for the District for the period 2012 - 2028. The policies in the Core Strategy replace much of the SDLP policies.
Selby District Local Plan 2005 (SDLP)	A suite of local plan policies that was implemented in 2005. Some policies have been saved for joint consideration with the Selby District Core Strategy Local Plan 2013. Others have been deleted and replaced with new policies in the Core Strategy.
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.
Species	A group of interbreeding organisms that seldom or never interbreed with individuals in other such groups, under natural conditions; most species are made up of subspecies or populations.
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, with a capability of up to 100MW. The total output from Unit X would be 1,900MW.</p> <p>Unit X is described in Work No. 1 of Schedule 1 to the draft DCO submitted with the DCO Application.</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, with a capability of up to 100MW. The total output from Unit Y would be 1,900MW.</p> <p>Unit Y is described in Work No. 2 of Schedule 1 to the draft DCO submitted with the DCO Application.</p>
Waterbody	A discrete body of water forming a physical feature.



Term	Definition
White Rose Carbon Capture Project	A proposed project to construct and operate a new 448 MW power station (super critical coal-fired with oxygen combustion technology) adjacent to the Existing Drax Power Station Complex.
Wildlife and Countryside Act 1981	The principal piece of UK legislation relating to the protection of wildlife.

## Abbreviations

Abbreviation	Description
AGI	Above Ground Installation
Application	The DCO Application
BAP	Biodiversity Action Plan
BEIS	Business, Energy and Industrial Strategy
CIEEM	Chartered Institute of Ecology and Environmental Management
CCGT	Combined Cycle Gas Turbine
CS	Selby District Core Strategy
DCO	Development Consent Order
EclA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
NSIP	Nationally Significant Infrastructure Project
EN-1	Overarching NPS for Energy
EN-2	NPS for Fossil Fuel Electricity Generating Infrastructure
EN-4	NPS for Gas Supply Infrastructure and Gas Oil Pipelines
ES	Environmental Statement
EU	European Union
GRF	Gas Receiving Facility
Ha	Hectare
LBAP	Local Biodiversity Action Plan
LPA	Local Planning Authority
m	Metres
MW	Megawatts
NE	Natural England
NERC	Natural Environment and Rural Communities
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	National Significant Infrastructure Project
OCGT	Open Cycle Gas Turbine
PEA	Preliminary Ecological Appraisal
SDC	Selby District Council

Abbreviation	Description
SDLP	Selby District Local Plan
SoS	Secretary of State
WCA	Wildlife and Countryside Act

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## EXECUTIVE SUMMARY

Drax Power Limited have now submitted a Development Consent Order (DCO) application to the Secretary of State (SoS) for Business Energy and Industrial Strategy (BEIS). The application for the Proposed Scheme includes the repowering of up to two existing coal-fired units with gas at the Existing Drax Power Station Complex, along with the construction of a battery storage facility and Gas Pipeline.

Records of grass snake (*Natrix helvetica*) were identified in the desk study and suitable habitat for reptiles was identified during the extended Phase 1 habitat survey. Suitable reptile habitat recorded included a mosaic of structurally varied vegetation. Arable farmland and grazed field edges were also identified as suitable habitat for reptile as reported in the Environmental Statement submitted with the Application. As a result, WSP were commissioned to carry out targeted reptile surveys.

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.

# 1 INTRODUCTION

## 1.1 Project Background

- 1.1.1. 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.
- 1.1.2. 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).
- 1.1.3. 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".
- 1.1.4. 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 battery energy storage facilities may be contained within a single structure.
- 1.1.5. 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.
- 1.1.6. 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.
- 1.1.7. 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 maximum size of the battery storage cells and any structure built to protect them would not change, as the battery storage cells for one Unit could have 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.

- 1.1.8. 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 may be included within the structure, should one be constructed, protecting the battery for Unit X.
- 1.1.9. 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 whether Unit X was constructed or whether Unit X and Unit Y was constructed.
- 1.1.10. 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.
- 1.1.1 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 National Grid.
- 1.1.2 This report was prepared to accompany Chapter 9 (Biodiversity) of the Environmental Statement (Ref 1) (Examination Library Reference APP-077) and should be read in conjunction with it.

## 1.2 Ecological Background

- 1.2.1 WSP conducted a Preliminary Ecological Appraisal (PEA) (Ref 2) of land within and adjacent to Drax Power Station, Yorkshire (approximate central National Ordnance grid reference SE 661 272) including the land required to install a Gas Pipeline.
- 1.2.2 Twenty-one records of grass snake were identified within 1 km of the Site from the desk study element of the PEA. Suitable habitat for reptiles was identified during the extended Phase 1 habitat survey element of the PEA, including a mosaic of structurally varied vegetation including tall, tussocky grass, arable crop and scrub as well as arable and grazed field edges. Twenty-one records of grass snake (*Natrix helvetica*) were also identified as part of the Preliminary Ecological Appraisal desk study. Targeted reptile surveys were subsequently commissioned by Drax Power Limited.
- 1.2.3 The purpose of these surveys was to confirm whether reptiles were present or likely to be absent from the Site and to provide appropriate mitigation, avoidance and compensation measures if presence was confirmed.
- 1.2.4 Previous surveys conducted by Whitcher Wildlife Ltd. in 2012 to inform the White Rose Carbon Capture and Storage Project (Ref 3) recorded one grass snake in the grassland to the north of Drax Power Station.
- 1.2.5 Small populations of grass snake have also been recorded at Barlow Mound (AB Ecology, 2017) (Ref 4) to the north west of the Site. Aerial imagery also indicates habitat connectivity between Barlow Mound and the Site Boundary.

## 1.3 Legislation and Planning Policy Context

- 1.3.1 Native, widespread reptile species (common or viviparous lizard (*Zootoca vivipara*), adder (*Vipera berus*), grass snake and slow worm (*Anguis fragilis*)) are partially protected via their inclusion on Schedule 5 of The Wildlife and Countryside Act 1981 (as amended (Ref 5), under part of Section 9(1) and all of Section 9(5). As such it is an offence to:
  - 'Intentionally or recklessly kill or injure' an individual of these species; or
  - 'Sell, offer or expose for sale, or [have in] possession or transport for the purpose of sale, any live or dead [individual] or any part of, or anything derived from' an individual of these species'.
- 1.3.2 All species of native reptile are also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref 6). Under Section 40 of the NERC Act (2006) public bodies, including local planning authorities have a duty to have regard for SPI when carrying out their functions, including determining planning applications.
- 1.3.3 The United Kingdom Biodiversity Action Plan (UKBAP) (Ref 7) was a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The priority species generally correlate with those listed in accordance with Section 41 of the NERC Act. The UKBAP has now been replaced by the UK Post-2010 Biodiversity Framework (Ref 8). The UKBAP does however contain useful information on how to characterise important species assemblages and habitats, which is still relevant.



- 1.3.4 The UK BAP was supplemented by Local Biodiversity Action Plans (LBAP), which are still in existence and are used to identify habitats and species of ecological value or concern at the local level.
- 1.3.5 The overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 9), specifically section 5.3, details the approach a project must take in regard to biodiversity. It states that the Applicant should clearly set out any effects of the development on internationally, nationally and locally designated sites of nature conservation importance, on protected species and habitats and other species identified as being of principal importance for the conservation of biodiversity. The Applicant should also demonstrate how the development has taken measures to conserve and enhance biodiversity.
- 1.3.6 The NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Ref 10), specifically section 2.21, refers to biodiversity, landscape and visual impacts from the construction of a pipeline. This policy statement provides additional considerations to the general principles outlined in EN-1. These considerations comprise the effect on components valuable to biodiversity typically grasslands, hedgerows/hedgebanks, trees, woodlands, waterbodies and watercourses that are located within and/or adjacent to the pipeline route.
- 1.3.7 EN-4 relates primarily to the Pipeline Area and provides a set of assessment and mitigation measures to combat pipeline construction related impacts on biodiversity.
- 1.3.8 At the national level the National Planning Policy Framework (2018) (Ref 11) forms the basis for planning development decisions with respect to conserving and enhancing the natural environment, including reptiles; the ODPM circular 06/05 (Ref 12) also provides supplementary guidance, including confirmation that:
- *“the presence of a protected species is a material consideration when a planning authority is considering a development proposal.”*
- 1.3.9 The NPPF sets out, amongst other points how at an overview level the “planning system should contribute to and enhance the natural and local environment by:
- *Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...”*
- 1.3.10 The NPPF also sets out how planning policies should “*minimise impacts on biodiversity by the:*
- *[promotion of] the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity ...”*
- 1.3.11 At a local level the Selby District Local Plan (2005) (Ref 13) states that:
- *“Development and other land use changes which may harm species protected by Schedules 1, 5 and 8 of the Wildlife and Countryside Act 198, as amended...will not be permitted.”*

1.3.12 The Selby District Core Strategy Local Plan (2013) (Ref 14) adds to this by:

- *“Ensuring developments retain, protect and enhance features of biological and geological interest and provide appropriate management of these features and that unavoidable impacts are appropriately mitigated and compensated for, on or off-site. And ‘Ensuring development seeks to produce a net gain in biodiversity by designing-in wildlife and retaining the natural interest of a site where appropriate.’”*

## 2 METHODS

### 2.1 Reptile Survey

- 2.1.1 The survey comprised seven survey visits to the Site, each incorporating two survey elements. These included a survey of artificial refugia and visual observation of habitats and natural refugia carried out as per good practice guidance Froglife, 1999 (Ref 15) and Gent & Gibson, 1998 (Ref 16).
- 2.1.2 One hundred artificial refugia were installed within suitable habitat for reptiles within development parcels A, B, D and E (see Figure 2) within the Site Boundary. Suitable habitat included tall grassland with tussocks, arable crop field margins, dense and scattered scrub and well grazed field edges. Refugia were deployed on 20th March 2018 and allowed to 'bed down' for two weeks prior to the beginning of the survey programme as per best practice guidance (Ref 15 & Ref 16).
- 2.1.3 A mixture of materials sized approximately 0.5 m x 0.5 m or 0.5 m x 1 m were used as artificial refugia, these included bitumen felt and corrugated metal. Refugia were deployed in suitable basking spots close to cover, within habitat parcels identified to provide suitable conditions for reptiles. The locations of the refugia are displayed on Figure 2.
- 2.1.4 Approximately 15.8 hectares of suitable reptile habitat was identified on Site (see Figure 2). By using 100 pieces of refugia, the minimum density expected for refugia deployment on a given reptile survey was exceeded (Ref 15 & Ref 16). This guidance states the number of tins used 'will depend on many factors, such as likelihood of disturbance, size of site and what the survey is attempting to achieve' and recommends a minimum of 5-10 refugia per hectare.
- 2.1.5 Reptiles are ectothermic animals, deriving their body heat from the external environment. Therefore, the timing of the survey visits was dictated by weather conditions. All surveys were completed within the optimal survey period for reptiles (April to May) and within the appropriate ambient air temperature range (10-18°C). Where possible, surveys were undertaken on sunny days with low cloud cover and little wind. These conditions maximise the probability of recording reptiles, should they be present. Where ambient air temperatures were towards the upper end of the temperature range, surveys were completed during periods of greater cloud cover.

### 2.2 Dates of Survey and Personnel

- 2.2.1 The reptile survey was completed by competent surveyors with extensive reptile survey experience.
- 2.2.2 Surveys were completed on the following dates:
- 17/04/2018
  - 19/04/2018
  - 24/04/2018
  - 02/05/2018
  - 04/05/2018
  - 09/05/2018
  - 14/05/2018

## 2.3 Notes and Limitations

- 2.3.1 During the interval between the deployment of the refugia and the first survey, livestock were relocated into a field containing 30 of the reptile refugia. Surveyors moved the refugia to the field edges during the first survey, to minimise the risk of damage by livestock. Approximately 30% of the refugia in this field were damaged during one of the subsequent surveys. As this was a small proportion of the refugia deployed, this was not considered a significant limitation to the survey.



## 3 RESULTS AND EVALUATION

### 3.1 Results of the Reptile Survey

- 3.1.1 No reptiles or evidence of reptiles were recorded on the Site. A small number of field vole (*Microtus agrestis*) and common shrew (*Sorex araneus*) were recorded as incidental records during the survey visits. As no reptiles were recorded on any survey visit under refugia or by direct observation, it is likely that reptiles are absent from the Site, or present in very low numbers. Table 1 below summarises the survey notes and weather conditions during each survey.
- 3.1.2 Although the Site is unlikely to support reptiles, it cannot be ruled out that low numbers of reptiles may colonise areas within the Site Boundary in the future.

Table 1 - Survey Summary, Weather Conditions and Results

Survey Visit		1	2	3	4	5	6	7
Number								
Date		17/04/18	19/04/18	24/04/18	02/05/18	04/05/18	09/05/18	14/05/18
Start	Time	9:20	08:40	08:49	14:00	8:59	9:20	8:42
	Air Temp. (°C) (shade)	12	18	10	13	12	17	12
	Cloud Cover (oktas)	8	1	8	3	4	0	0
	Wind Speed (Beaufort)	2	1	3	3	0	2	2
Finish	Time	12:20	11:32	11:30	16:30	11:14	11:50	10:46
	Air Temp. (°C) (shade)	14	23	13	13	15	22	16
	Cloud Cover (oktas)	8	1	8	3		0	0

Survey Number	Visit	1	2	3	4	5	6	7
Date		17/04/18	19/04/18	24/04/18	02/05/18	04/05/18	09/05/18	14/05/18
	Wind Speed (Beaufort)	4	1	0	3	8	2	1
	Description / Notes	Mat 99 not checked due to works to pylon restricting access. 30 mats moved due to livestock being moved into a field.	1x common shrew	3x field voles	Spells of rain earlier in the day	3x field voles 1x common shrew	6x common shrews	2 x field voles

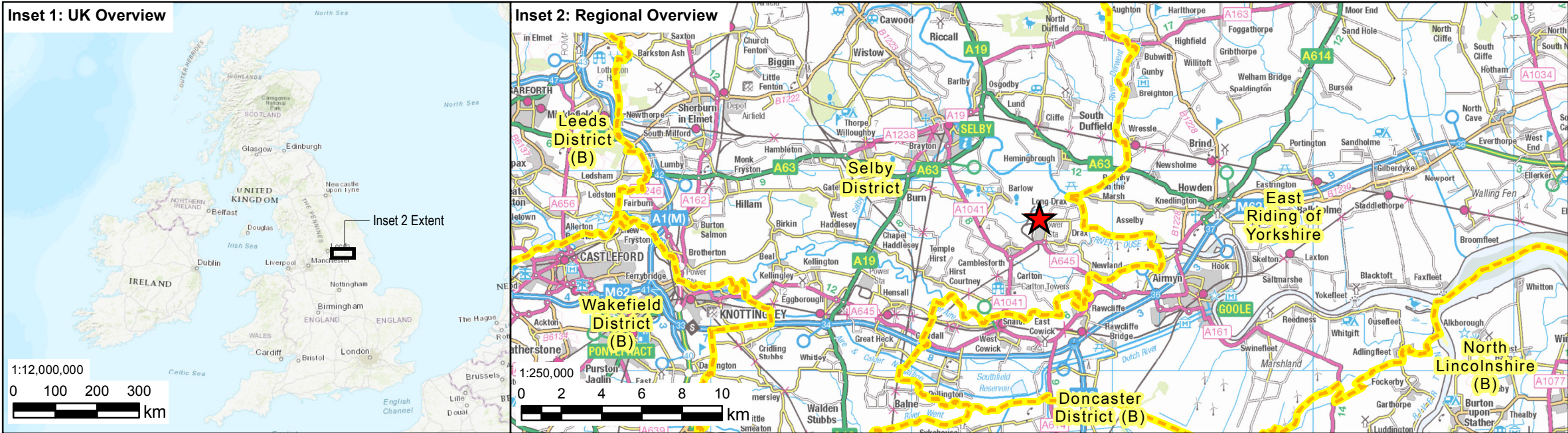
## 4 CONCLUSION

- 4.1.1 No reptiles were recorded during the seven survey visits of the Site. Connecting habitat suitable for reptiles was present between the Site Boundary and Barlow Mound, where small populations of grass snake have been recorded previously.
- 4.1.2 The survey results indicate that reptiles are likely present only in very small numbers of non-important populations or absent from the Site completely. The outcome of the reptile survey indicates that reptiles are present in fewer numbers than assumed for the purpose of the ES assessment. The likelihood of reptiles being present in future remains as assumed within the ES assessment. The significance of impacts on reptiles as a result of the Proposed Scheme as reported in the ES are conservative relative to the findings of the completed surveys, with the precautionary assessment in the ES covering the worst possible impacts to reptiles that could arise from the Proposed Scheme.
- 4.1.3 This report should be read in conjunction with Chapter 9 (Biodiversity) of the ES (Ref 1) (Examination Library Reference: APP-077) which details both direct and indirect effects of the Proposed Scheme on reptile populations within the Site. Mitigation, avoidance and compensation measures for reptiles (where appropriate) are detailed in the ES. These measures are considered to remain appropriate in light of the results of the reptile surveys and the interpretation made in the ES.

## 5 REFERENCES

- Ref 1: WSP (2018). Drax Repower Project. Environmental Statement, Chapter 9 – Biodiversity. Document Ref. 6.1.9. Examination Library Reference: APP-077.
- Ref 2: WSP (2018). Drax Repower Project Preliminary Ecological Appraisal.
- Ref 3: Capture Power (2014). White Rose Carbon Capture and Storage Project. Drax Power Station.
- Ref 4: AB Ecology (2017). Ecological Monitoring Report – 2017, Drax Power Station, Barlow Ash Mound.
- Ref 5: Her Majesty's Stationary Office (HMSO) (1981). Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000).
- Ref 6: HMSO (2006). Natural Environment and Rural Communities (NERC) Act.
- Ref 7: The UK Biodiversity Action Plan; available online at: <http://jncc.defra.gov.uk/page-5155>. [Accessed: September 2018].
- Ref 8: The UK Post-2010 Biodiversity Framework; available online at: <http://jncc.defra.gov.uk/page-6189>. [Accessed: September 2018].
- Ref 9: Department for Energy and Climate Change (DECC), (2011a). National Policy Statement for Energy EN-1, HMSO.
- Ref 10: Department for Energy and Climate Change (DECC), (2011b). National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4), HMSO.
- Ref 11: Department for Communities and Local Government (2018). National Planning Policy Framework (NPPF).
- Ref 12: Office of the Deputy Prime Minister (ODPM) (2005). Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impacts within the Planning System.
- Ref 13: Selby District Local Plan (SDLP) (2005).
- Ref 14: The Selby District Core Strategy Local Plan (2013).
- Ref 15: Froglife (1999). Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice sheet 10. Froglife, Halesworth.
- Ref 16: Gent, A and Gibson, S. (1998). Herpetofauna Workers Manual, Joint Nature Conservation Committee, Peterborough.





**Key**

Site Boundary

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Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009  
- Regulation 5(2)(a)

A	23/04/2018	RMCC	FIRST ISSUE	CS	CT
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: **FINAL**

**wsp**

Three White Rose Office Park, Millshaw Park Lane, Leeds, LS11 0DL, UK  
Tel: +44 113 395 6200 Fax: +44 113 395 6201  
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CLIENT: **drax**

PROJECT: **The Drax Power (Generating Stations) Order**

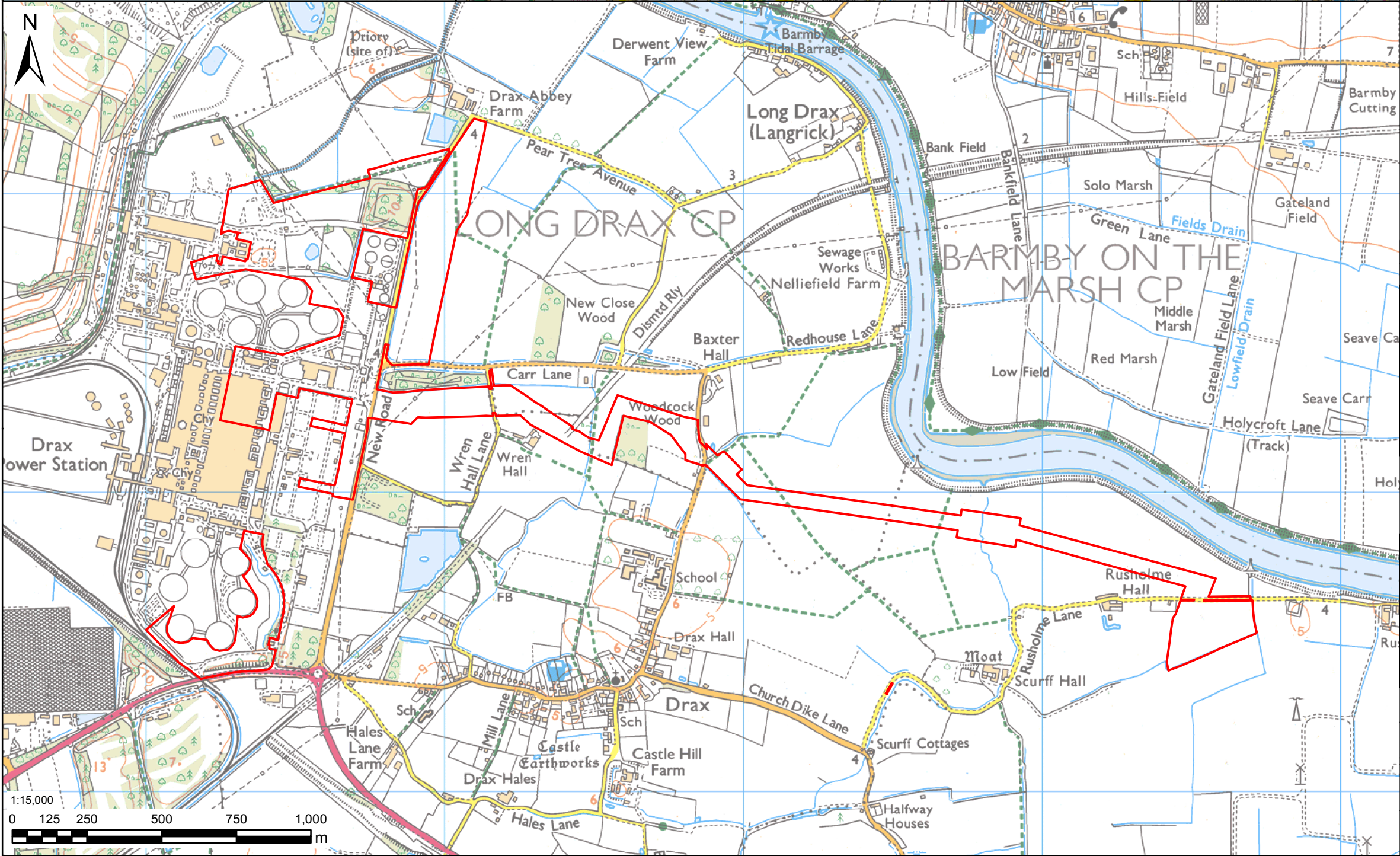
TITLE: **Figure 1  
Site Location**

SCALE @ A3:	CHECKED:	APPROVED:
See map @ A3	CS	CT

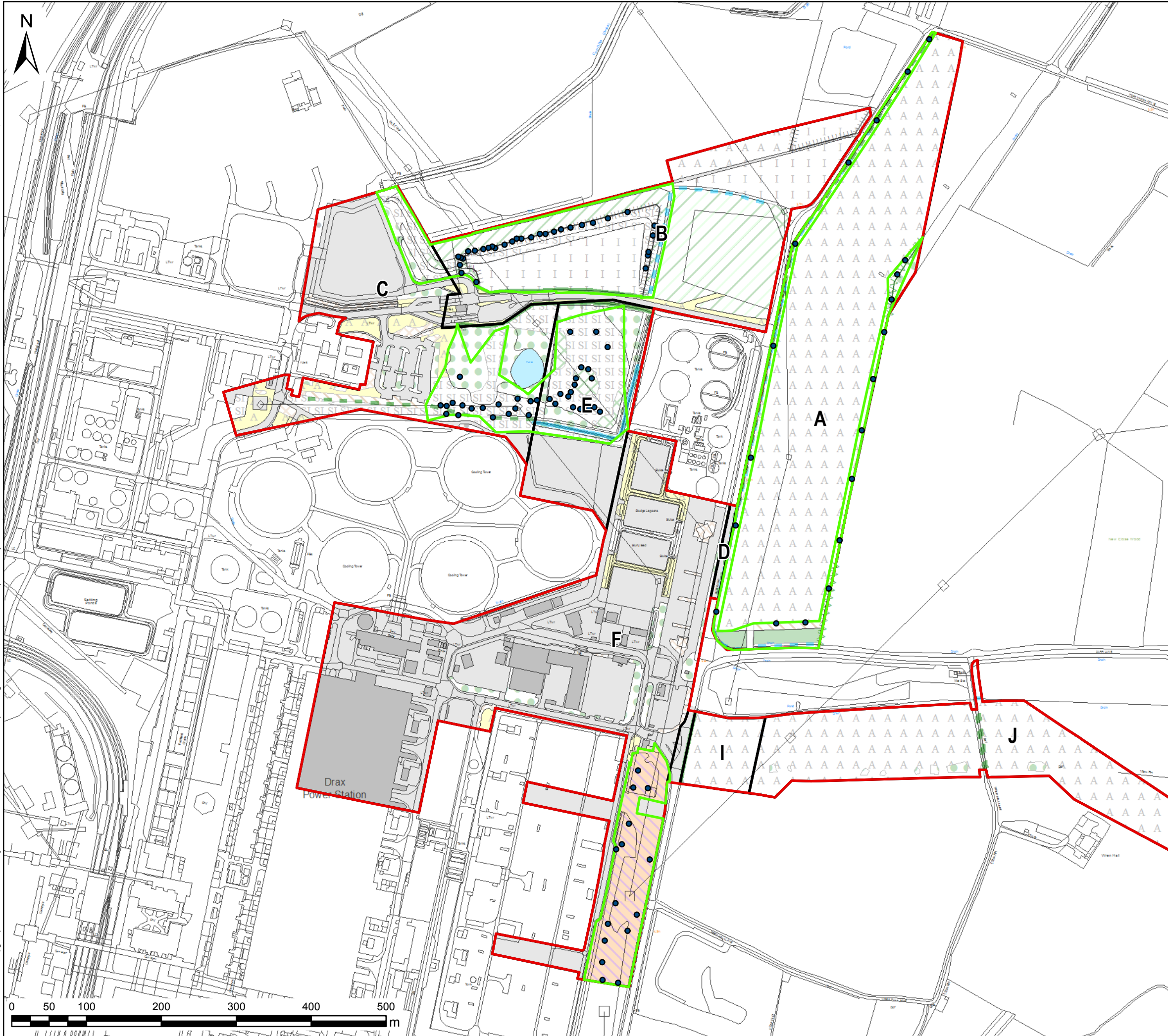
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70037047	RMCC	RMCC	23/04/2018

DRAWING No:	REV:
70037047-1.1	A

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**Key**

- Site Boundary
- Development Parcels
- Reptile Survey Refugia Location
- Optimal Reptile Habitat

**Phase 1 Habitats**

- Bare ground
- Introduced shrub
- Buildings
- Broadleaved woodland - semi-natural
- Other tall herb and fern - ruderal
- Standing water
- Scrub - dense/continuous
- Broadleaved woodland - plantation
- Cultivated/disturbed land - amenity grassland
- Improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Marsh/marshy grassland
- Mixed woodland - plantation
- Broadleaved Parkland/scattered trees
- Semi-improved grassland
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water

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CLIENT:

PROJECT:  
**The Drax Power (Generating Stations) Order**

TITLE:  
**Figure 2  
Survey Area and Artificial Refugia Locations**

SCALE @ A3: <b>5,000 @ A3</b>	CHECKED: <b>PD</b>	APPROVED: <b>CT</b>
PROJECT No: <b>70037047</b>	DESIGNED: <b>PD</b>	DRAWN: <b>RMcC</b>
DATE: <b>03/08/2018</b>		REV: <b>A</b>

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