

DRAX POWER LTD

DRAX REPOWER PROJECT

ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

SEPTEMBER 2017

PUBLIC





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ENVIRONMENTAL IMPACT ASSESSMENT SCOPING REPORT

DRAX POWER LTD.

EIA SCOPING REPORT (VERSION 0)
PUBLIC

EIA SCOPING FINAL REV0 20170913
DATE: 13 SEPTEMBER 2017

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September 13, 2017

Karl-Jonas Johansson

The Planning Inspectorate
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KJ.Johansson@pins.gsi.gov.uk

Dear Mr Johansson:

WSP acts on behalf of Drax Power Ltd (the applicant) in respect of the Drax Repower Project. The applicant proposes to provide an environmental impact assessment (EIA) in respect of that development and accordingly please take this document as notice of that intention under Regulation 8(1) of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ("EIA Regulations 2017").

In addition, please accept this letter as a request for a written EIA Scoping Opinion under Regulation 10 of the EIA Regulations 2017. Enclosed is an EIA Scoping Report to assist you in providing your EIA Scoping Opinion.

The EIA Scoping Report includes the following:

- A plan sufficient to identify the land (**Figure 1**)
- A description of the proposed development, including its location and technical capacity (**Sections 3 – 5**)
- An explanation of the likely significant effects of the development on the environment (**Sections 6 – 8**)
- Such other information or representations as the person making the request may wish to provide or make.

In accordance with Regulation 10(6) of the EIA Regulations 2017, the Secretary of State has a statutory 42 days to provide an EIA Scoping Opinion. As such it is assumed that a Scoping Opinion would be available by 25 October 2017.

Yours sincerely,

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Associate Director | Environmental Planning

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QUALITY MANAGEMENT

| ISSUE/REVISION | FIRST ISSUE | REVISION 1 | REVISION 2 |
|----------------|---|------------|------------|
| Remarks | | | |
| Date | 13 September 2017 | | |
| Prepared by | Various Lead Author – Michael Browne | | |
| Signature | | | |
| Checked by | Chris Taylor | | |
| Signature | | | |
| Authorised by | Clare Hennessey | | |
| Signature | | | |
| Project number | 70037047 | | |
| Report number | EIA Scoping FINAL Rev0 20170913 | | |
| File reference | | | |

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1 INTRODUCTION

1.1 OVERVIEW

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 by the applicant to prepare an Environmental Impact Assessment (EIA) Scoping Report in support of its request to the Secretary of State for a scoping opinion as to the scope and level of detail of the information to be provided in the Environmental Statement (ES).

The Proposed Scheme includes the following:

- Upgrading up to two existing coal-fired power units to gas, generating up to 3,600 MW. The current coal-fired capacity of these units is 1,300 MW. The units will be combined cycle gas turbines (CCGT) with the ability to run in either combined cycle or open cycle mode;
- Up to four new gas turbines and up to four Heat Recovery Steam Generators (HRSG);
- Main flue and bypass exhaust stacks for each HRSG;
- A new gas pipeline of approximately 3 km. The applicant is considering whether this will form part of the application for a development consent order or form a separate standalone application under the Town and Country Planning Act 1990);
- A battery storage unit of up to 200 MW;
- An upgrade to the existing National Grid 400 kV substation on the Power Station Site. The applicant is considering, alongside National Grid, whether this would be consented through permitted development rights or will form part of the application for a development consent order;
- Demolition and relocation of existing contractors' compounds, contractors' carpark, turbine outage stores and existing station ash lagoons and such other infrastructure as may be required and necessary at the Power Station Site;
- Land safeguarded for carbon capture and storage;
- location of a mobile crane alongside the jetty, associated security lighting, fencing and storage and welfare facilities and laydown areas; and
- All such development comprising works and operations as may be necessary or expedient for the purposes of or in connection with the construction, operation and maintenance of the above

A full description of the Proposed Scheme is given in **Section 5**.

This EIA Scoping Report is based on the EIA Site Boundary defined in **Figure 1**. At this stage the Site Boundary does not denote the final application boundary (i.e. red line boundary) upon which development consent will be sought, but is currently considered the maximum extent of all potential permanent and temporary works required as part of the Proposed Scheme.

1.2 REQUIREMENTS FOR EIA

The Proposed Scheme is a nationally significant infrastructure project (NSIP), as defined within the Planning Act 2008, Section 14(1)(a) and 15(2). As such, the applicant is required to request a Development Consent Order (DCO) in order to construct and operate the Proposed Scheme. In addition, the Proposed Scheme falls under Schedule 1 paragraph 2(1) of the Infrastructure Planning (Environment Impact Assessment) Regulations 2017 (hereafter referred to as EIA Regulations 2017) – *Thermal power stations and other combustion installations with a heat output of 300 megawatts or more*. Therefore, the DCO application will be supported by an Environmental Impact Assessment (EIA).

The Proposed Scheme has not been subject to an EIA Screening Request or Opinion, as all development listed in Schedule 1 is EIA development under the EIA Regulations 2017.

The applicant intends to submit a DCO application in the spring of 2018.

1.3 EIA SCOPING REPORT OBJECTIVES

This EIA Scoping Report supports a formal request for a Scoping Opinion from the Secretary of State as to the scope, and level of detail, of the information to be provided in the ES. Accordingly, the report sets out the proposed scope of the EIA including the environmental topics, likely significant effects and methods of assessment.

In accordance with Regulations 10(3)(a) to (d) of the EIA Regulations 2017 this report contains the following:

- A plan sufficient to identify the land (**Figure 1**);
- A description of the proposed development, including its location and technical capacity (**Sections 3 – 5**);
- An explanation of the likely significant effects of the development on the environment (**Sections 6 – 8**);
and
- Such other information or representations as the person making the request may wish to provide or make.

2 APPROACH TO EIA

2.1 INTRODUCTION

The ES will be produced in accordance with Regulation 14 of the EIA Regulations 2017, including all necessary information in order to satisfy Regulation 14(2)(a)–(f).

In line with Regulation 14(4)(a) of the EIA Regulations 2017, the ES and all technical assessments will be undertaken by a suitably qualified project team. Furthermore, all technical assessments will be subject to a thorough technical review, to assure technical credibility, followed by subsequent review by the EIA coordination team and the Project Director. Such activities will ensure that all deliverables are produced to the necessary high standards. WSP will be responsible for the coordination, compilation and procedural review of the ES in line with the requirements outlined by the Institute of Environmental Management & Assessment (IEMA)¹ and further satisfy Regulation 14(4)(a). IEMA has awarded WSP the EIA Quality Mark in recognition of our commitment to excellence in EIA activities. We have continued to maintain this following ongoing, annual examination in relation to our ongoing products, staff, innovation and promotion of EIA within the industry. We continue to support and lead nationally recognised guidance for EIA in the UK.

2.2 BASELINE CONDITIONS

Likely significant environmental effects as a result of the Proposed Scheme will be described in the ES in relation to the deviation from the baseline environment. The baseline environment includes the existing environmental characteristics and conditions, based on surveys undertaken and information available at the time of the assessment. The ES will also include an outline of the likely evolution of the existing baseline without implementation of the Proposed Scheme as far as it can be assessed on the basis of available information and knowledge.

The baseline conditions for the purpose of the ES will vary dependent upon the timing of the survey or the date when data sources will have been produced / accessed. It is anticipated that the majority of information to inform the baseline environment used in the assessments will be based on data obtained or surveys completed between July 2017 and April 2018.

Some data obtained from third parties may be older. The origin of all third party data will be clearly outlined within the relevant technical components of the ES alongside any limitation and assumptions. The ES will identify any limitations to the assessment resulting from the timing of surveys or the age or availability of data.

2.3 SIGNIFICANCE CRITERIA

The ES will report on the likely significant environmental effects for the construction (including demolition) and operational (including maintenance) phases of the Proposed Scheme.

¹ IEMA (2016) EIA Quality Mark: Registrant Guide

The following criteria will be taken into account when determining significance:

- Relevant legislation and planning policy;
- International, national, regional and local standards / guidance;
- Probability of occurrence of likely effect;
- Geographical extent of likely effect;
- Magnitude and complexity of likely effect;
- Sensitivity / value / importance of the receptor / receiving environment;
- Duration (short – up to 1 year, medium – 1 to 10 years, or long-term – over 10 years), frequency and reversibility of effect (temporary / permanent);
- Inter-relationship between effects (both cumulatively and in terms of potential effect interactions); and
- The outputs of stakeholder and public engagement.

The method for assessing significance of effect will vary between environmental topics but, in principle, will be based on the environmental sensitivity (or value / importance) of a receptor and the magnitude of change from baseline conditions.

Where topic-specific guidance requires that specific criteria or scales for determining significance are to be used this will be outlined in the relevant environmental topics.

In the absence of topic-specific guidance, the magnitude of change will be assessed on a scale of large, medium, small and negligible; sensitivity (or value / importance) will be assessed on a scale of high, medium, low and negligible. The significance of each effect will be assessed against the magnitude of change and the sensitivity (or value / importance) of the receptor or receiving environment using the matrix in **Table 2.1**.

Table 2.1 Matrix for Determining Significance of Effect

| | | 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 |

Where a range has been provided in **Table 2.1**, professional judgement will be used to define the significance.

Tables that summarise the likely significance of environmental effects will be provided. These tables will outline sensitive receptors, mitigation measures and residual effects. A distinction will be made between direct and indirect; short, medium and long-term; permanent and temporary; and positive and negative effects. Cumulative effects of other existing and approved projects will be considered in a separate section as outlined in **Section 8**.

2.4 CONSULTATION

WSP and the applicant provided North Yorkshire County Council (NYCC) and Selby District Council (SDC) with an introduction to the Proposed Scheme in a briefing meeting on 23 August 2017. This included information on project background, the Proposed Scheme, options being considered for the gas pipeline, environmental constraints, programme, consultation and engagement and next steps.

In addition, WSP will continue to consult with technical specialists at NYCC and SDC and other statutory consultees including the Environment Agency and Internal Drainage Board. The purpose of this consultation will be to brief them on the Proposed Scheme, engage on the approach to assessment and obtain baseline data.

Non-statutory consultation will take place in late 2017 and statutory consultation in Quarter 1 2018. This latter consultation will be supported by a Preliminary Environmental Information Report, which will be developed such that consultees can develop an informed view of the likely significant environmental effects of the Proposed Scheme.

Throughout the EIA process technical and procedural consultation will continue. A summary of consultation will be appended to the ES and technical consultation will be summarised within the individual technical chapters.

2.5 CONSIDERATION OF ALTERNATIVES

Regulation 14(2)(d) of the EIA Regulations 2017 states that an ES should include:

‘a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment’.

As part of the iterative design process, the Proposed Scheme will continue to evolve to take account of issues including environmental constraints and opportunities. How the project has evolved and continues to evolve is to be logged as Primary Mitigation (See **Section 2.6**).

Primary mitigation will influence the final design of the Proposed Scheme; for example, the preferred pipeline route, site layout, or the height and location of stacks. The design of the Proposed Scheme will continue to be refined taking into account a consideration of environmental factors such as flood risk, sensitive habitats, ecological designations, human receptors and the status of agricultural land, as well as consultation with stakeholders. Primary mitigation will be reported within the ES.

Given the nature of the Proposed Scheme (i.e. retrofitting of existing infrastructure), alternative sites, other than pipeline route options, are not considered a viable or suitable alternative to the Proposed Scheme and will therefore not be appraised within the ES. Therefore, the assessment of alternatives will focus on alternative technologies, with a specific focus on best available technology (BAT), layouts, route options for the gas pipeline, and fuel sources. Furthermore, the ES will consider the ‘do nothing’ scenario, which will consider the missed opportunities or avoidance of likely significant environmental effects associated with the Proposed Scheme.

2.6 MITIGATION

The Institute of Environmental Management and Assessment (IEMA) issued ‘Shaping Quality Development’ in November 2015 and ‘Delivering Quality Development’ in July 2016. In accordance with these guidance documents, three types of mitigation will be identified and used within the ES:

- **Primary mitigation** – modifications to the location or design of the Proposed Scheme made during the pre-application phase that are an inherent part of the project;
- **Secondary mitigation** – actions that will require further activity in order to achieve the anticipated outcome. The effectiveness of such measures will be assessed within the ES and appropriate mitigation secured by the DCO; and
- **Tertiary mitigation** – actions that would occur with or without input from the EIA feeding into the design process. These include actions that will be undertaken to meet other existing legislative requirements, or actions that are considered to be standard practices used to manage commonly occurring environmental effects. These measures are treated as an inherent part of the project.

The primary and tertiary mitigation will be presented in **Chapter 3 – Description of the Proposed Scheme** in the ES and in the ‘Relevant Elements of the Proposed Scheme and Establishing the Pre-Mitigation Scenario’ section for each environmental topic. The assessment of the likely significant environmental effects for the pre-mitigation scenario will take such mitigation into account in determining the magnitude of change.

Following the conclusion of the effects based on the Proposed Scheme, any further mitigation measures (secondary mitigation) will be outlined within the ‘Assessment of Effects, Mitigation Measures and Residual Effects’ section of each environmental topic. These mitigation measures will further reduce a negative effect or enhance a positive one.

The primary, secondary and tertiary mitigation will be summarised in **Chapter 17 - Summary of the Environmental Statement in the ES**. In addition, a Framework Environmental Management Plan (EMP) will

also document primary, secondary and tertiary mitigation to ensure suitable identification and monitoring of mitigation beyond the submission of the DCO and through to delivery. A Construction Environmental Management Plan (CEMP) will be developed to control environmental impacts during the construction period.

2.7 CONTINUED DISCUSSIONS WITH STAKEHOLDERS

Whilst the EIA Scoping Report seeks to establish the overall framework for the EIA in relation to the environmental topics and associated likely significant environmental effects, the applicant will continue to discuss the project with stakeholders throughout the pre-submission phase, especially given that the Proposed Scheme is still undergoing final feasibility appraisal and design and consultation. As such, discussions with stakeholders will likely occur at the following key stages:

- 1 Following review of incoming baseline data (desk based and survey works);
- 2 Following outcomes of stakeholder and public engagement;
- 3 Following any required modelling/production of results, prior to the commencement of the assessment; and
- 4 Design freeze.

However, it is anticipated that the Proposed Scheme will remain materially the same as the development described in this Scoping Report and the ES will be based on the Scoping Opinion issued. The development and finalisation of the scope will be documented within the ES and will not be recorded in subsequent EIA Scoping Reports.

2.8 FORMAT OF ES

The ES will comprise of three volumes:

- Volume 1** Main Text and Figures;
- Volume 2** Technical Appendix; and
- Volume 3** Non-Technical Summary.

The proposed structure of the ES is provided in **Appendix B**.

2.9 INTERACTION BETWEEN EIA AND HRA

The Habitats Directive (92 / 43 / EEC) and transposing UK Regulations (Conservation of Habitats and Species Regulations 2010 and Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007) require consenting authorities to decide whether or not a project may have a significant effect on European Sites (as defined in the regulations). This process is known as Habitat Regulations Assessment (HRA). The overarching aim of HRA is to determine, in view of a site's conservation objectives and qualifying interests, whether a plan, either in isolation and / or in-combination with other plans or projects, would have a potentially significant effect on the integrity of a European site. Given the proximity of the Power Station Site to European Sites, including the Derwent Lowland Valley, a HRA will be undertaken for the Proposed Scheme. This will provide the consenting authority with sufficient information to decide whether the Proposed Scheme may have a significant effect on the integrity of the identified ecological designations.

Whilst the over-arching objectives of EIA and HRA are similar, their scope, level of detail and terminology vary. As such, these processes will be undertaken separately. However, the scope presented within this EIA Scoping Report has been developed to ensure that the needs of these processes have been considered to ensure a coordinated assessment.

3 PLANNING POLICY

This section sets out the planning policy relevant to the Proposed Scheme. **Section 3.1** sets out the 'Primary Policy Framework' in accordance with which the Development Consent Order (DCO) application must be examined and determined. **Section 3.2** then sets out the 'Secondary Policy Framework' which comprises other policy documents which may be taken into account in examining and determining the DCO application where those policies are important and relevant to the Secretary of State's decision. **Section 3.3** is a review of the need for the Proposed Scheme and how it complies with European and UK objectives on carbon emissions.

3.1 PRIMARY POLICY FRAMEWORK

The policy framework for examining and determining applications for Nationally Significant Infrastructure Projects (NSIPs) is provided by National Policy Statements (NPSs). Section 104 of the Planning Act 2008 requires the Secretary of State to determine applications for NSIPs in accordance with the relevant NPSs, except for where this would lead to the UK being in breach of any of its international obligations, lead to the Secretary of State being in breach of any duty imposed by or under any enactment, be unlawful by virtue of any enactment, the adverse impacts of the Proposed Scheme would outweigh its benefits, or any condition prescribed for deciding an application otherwise than in accordance with a NPS is met.

The Department for Energy and Climate Change (now the Department for Business, Energy and Industrial Strategy) published a number of NPSs in relation to energy infrastructure, which were designated by the Secretary of State for Energy and Climate Change in July 2011.

The NPSs relevant to the Proposed Scheme are listed below.

- **Overarching National Policy Statement For Energy: E-N1 (NPS EN-1):** This document sets out national policy for energy infrastructure as defined by the Planning Act 2008 and provides an umbrella document under which all other energy NPSs sit. The policies within this NPS, in combination with policies set out in relevant technology specific energy NPSs, provide the primary basis for decisions by the Secretary of State and set out the need for new energy infrastructure.
- **National Policy Statement for Fossil Fuel Generating Infrastructure: EN-2 (NPS EN-2):** This policy must be taken together with the 'Overarching NPS for Energy' (EN-1) as set out above. This NPS sets out policies specific to the determination of applications for fossil fuel electricity generating stations of over 50 MW generating capacity. The additional EN-2 policy on potential impacts of fossil fuel generating stations on air emissions, landscape and visual, noise and vibration and water quality and resource will be considered as part of the EIA.
- **National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) ('EN-4') (DECC, 2011c):** This policy must be taken together with the 'Overarching NPS for Energy' (EN-1) as set out above. It provides the primary basis for decisions by the Secretary of State on applications it receives for gas supply infrastructure and gas and oil pipelines. The proposed pipeline does not meet the thresholds in the Planning Act 2008 that would allow for it to be considered as an NSIP in its own right. However, pipelines which are not NSIPs may be granted development consent as associated development by virtue of their connection with another NSIP, such as a power station. Furthermore, the NPS is likely to be a material consideration in decision making on relevant applications that fall under the Town and Country Planning Act 1990 (as amended). Therefore EN-4 will be a material consideration in determining the gas pipeline, whether it is assessed as associated development or under a separate planning application to the Local Planning Authority.
- **National Policy Statement for Electricity Networks Infrastructure (EN-5):** This policy must be taken together with the 'Overarching NPS for Energy' (EN-1) as set out above. This NPS sets out policy specific to the determination of the transmission systems and distribution systems. It covers above ground electricity lines with a voltage of 132kV or above, it also applies to any kind of electricity infrastructure if it constitutes associated development for which consent is sought along with an NSIP, such as a power station. Therefore, the electricity infrastructure required for this development classified as associated development will be subject to policy EN-5.

Part 4 of EN-1 sets out a number of 'assessment principles' that must be taken into account by applicants and the Secretary of State in preparing and determining applications for nationally significant energy infrastructure. General points include (paragraph 4.1.2) the requirement for the Secretary of State, given the level and urgency of need for the infrastructure covered by the energy NPSs, to start with a presumption in favour of

granting consent for applications for energy NSIPs. This presumption applies unless any more specific and relevant policies set out in the relevant NPS clearly indicate that consent should be refused or any of the considerations referred to in Section 104 of the 2008 Act (noted above) apply.

Paragraph 4.1.3 goes on to state that in considering any project, and in particular, when weighing its adverse impacts against its benefits, the Secretary of State should take into account:

- its potential benefits, including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and
- its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.

Paragraph 4.1.4 continues by stating that within this context the Secretary of State should take into account environmental, social and economic benefits and adverse impacts, at national, regional and local levels.

Part 4 of EN-1 details additional matters to be covered within the ES, which include consideration as to whether the project may have a significant effect on a European Site (in accordance with the Habitats and Species Regulations); the consideration of alternatives; criteria for 'good design' for energy infrastructure; consideration of opportunities for Combined Heat and Power Carbon Capture and Storage and Carbon Capture Readiness; climate change adaptation; and grid connection, amongst others.

Part 5 of EN-1 sets out the requirement of NSIP energy projects and applications to include consideration of generic impacts (as opposed to technology-specific impacts) on an EIA topic-by-topic basis, including specifying what is required in terms of "applicant's assessment", "decision making" and "mitigation".

The NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2) (DECC) states "Fossil fuel generating stations play a vital role in providing reliable electricity supplies and a secure and diverse energy mix as the UK makes the transition to a low carbon economy" further emphasising that fossil fuel generating stations play a vital role in providing reliable electricity supplies.

Section 2 of EN-2 states that "applicants should locate new fossil fuel generating station in the vicinity of existing transport routes wherever possible." The impacts on the existing transport infrastructure will be assessed in the ES.

Paragraph 2.5.3 states that a range of mitigation measures are required to minimize NO_x and other emissions to meet the requirements of the Large Combustion Plant Directive (LCPD) and the Industrial Emissions Directive. (IED). These emissions will be regulated through an Environmental Permit from the Environment Agency.

Section 2.19 of EN-4 covers gas and oil pipelines; paragraph 2.19.10 states that "When choosing a pipeline route, applicants should seek to avoid or minimise adverse effects from usage below the surface. Where it is not considered practicable to select a route that avoids below surface usage, applicants should demonstrate in the ES that mitigating measures will be put in place to avoid adverse effects both on other below ground works and on the pipeline. Mitigating measures may include: protection or diversion of underground services; gas detection near landfill sites; horizontal direct drilling (HDD) techniques and rerouting. Contaminated material may need to be removed and disposed of."

The ES will have due consideration to the effects associated with the specific factors as set out in EN-4 sections 2.20 – 2.23 (noise and vibration, biodiversity, landscape and visual, water quality and resources, soils and geology).

EN-5 sets out additional technology specific considerations for the assessment of electricity networks in relation to biodiversity and geological conservation, landscape and visual and noise and vibration as set out in sections 2.7 -2.9.

The ES will address the requirements set out in NPS EN-1, NPS EN-2, NPS EN-4 and NPS EN-5 and will provide information and evidence that will enable the Examining Authority to examine and Secretary of State to determine whether the Proposed Scheme complies with the relevant NPS policies.

3.2 SECONDARY POLICY FRAMEWORK

An analysis of the relevant national and local planning policies will be undertaken including National Planning Policy Framework and the Planning Practice Guide (PPG). NPS EN-1 states that consideration may be given to planning policy outside the NPSs where it is important and relevant to the Secretary of State's decision. Paragraph 4.1.5 of EN-1 confirms that these may include development plan documents or other documents in the local development framework.

3.2.1 NATIONAL PLANNING POLICY FRAMEWORK AND PLANNING PRACTICE GUIDANCE

The National Planning Policy Framework (NPPF) (Department of Communities and Local Government (DCLG), 2012) was adopted in March 2012, replacing the majority of Planning Policy Statements and Planning Policy Guidance Notes. The policies contained within the NPPF are expanded upon and supported by the 'Planning Practice Guidance', which was published in March 2014.

The NPPF sets out the Government's planning policies for England and how these are to be applied. It is a material consideration in planning decisions. Paragraph 3 of the NPPF makes it clear that the document does not contain specific policies for NSIPs and that applications in relation to NSIPs are to be determined in accordance with the decision making framework set out in the Planning Act 2008 and relevant NPSs, as well as any other matters that are considered both important and relevant. However, paragraph 3 goes on to confirm that matters that can be considered to be both important and relevant to NSIPs may include the NPPF and the policies within it.

Policies of particular relevance to the scope of the ES include promoting sustainable transport; requiring good design; promoting healthy communities; conserving and enhancing the natural and historic environment; and meeting the challenge of climate change and mitigating its effects.

3.2.2 LOCAL PLANNING POLICY FRAMEWORK

The Proposed Scheme is located within the existing Power Station Site with the associated gas pipeline options extending to the east. The Proposed Scheme is solely within Selby District and North Yorkshire County. The local district development plan policies relevant to this application include:

THE SELBY DISTRICT CORE STRATEGY LOCAL PLAN – ADOPTED OCTOBER 2013.

- SP 1 Presumption in Favour of Sustainable Development;
- SP 15 Sustainable Development and Climate Change;
- SP 16 Improving Resource Efficiency;
- SP 18 Protecting and Enhancing the Environment; and
- SP 19 Design Quality.

THE 'SAVED' POLICIES OF THE SELBY DISTRICT LOCAL PLAN – ADOPTED FEBRUARY 2005

- ENV1 Control of Development;
- ENV2 Environmental Pollution and Contamination;
- ENV3 Light Pollution;
- ENV4 Hazardous Substances;
- ENV9 Sites of Importance for Nature Conservation Importance;
- ENV27 Scheduled Monuments and Important Archaeological Sites;
- ENV28 Other Archaeological Sites;
- EMP10 Additional Industrial Development at Drax and Eggborough Power Stations;
- T 1 Development in Relation to the Highway Network;
- T2 Access to Roads; and
- T8 Public Rights of Way.

The 'North Yorkshire Minerals and Waste Plan' is a collection of emerging planning policy documents which, once adopted, will replace the 'waste local plan' and the 'Minerals Local Plan'. Until then the 'Saved Policies' will continue to form part of the statutory development plan and provide the local policy framework. Policies relevant to this application include:

THE 'SAVED' NORTH YORKSHIRE WASTE LOCAL PLAN – ADOPTED 2006

- 5/1 – Waste Minimisation

THE 'SAVED' NORTH YORKSHIRE MINERALS LOCAL PLAN 1997

- Policy 7/8 Gathering Stations

3.2.3 EMERGING POLICY

MINERALS AND WASTE JOINT PLAN

As minerals and waste planning authorities, NYCC, the City of York Council and the North York Moors National Park Authority are producing a minerals and waste joint plan.

The minerals and waste joint plan will, once finalised, set out new planning policies for minerals and waste developments across all three areas which will guide decisions on planning applications up to 31 December 2030. The proposed plan is due for submission in November 2017 and expected to be adopted in March 2018.

SITES AND POLICIES LOCAL PLAN – PLAN SELBY

PLAN Selby is the Sites and Policies Local Plan, which SDC is developing to deliver the strategic vision outlined in the Core Strategy (adopted in 2013). When PLAN Selby is adopted it will form part of the Local Plan for the District against which planning applications will be assessed.

PLAN Selby will incorporate site allocations to promote the growth needs of the District and site specific designations and policies to manage other development proposals. Consultation took place in June and August 2015.

These documents are still in the preparation stages and will not be considered further for the purposes of scoping of the EIA.

3.3 CLIMATE CHANGE AND CARBON REDUCTION

The Large Combustion Plants Directive (LCPD) was a European directive that entered into force in November 2001 and included provision for a national emission reduction plan (NERP) that achieves overall reductions in pollutants from combustion plants having thermal capacity of 50 MW or greater. The directive applied to fossil fuel power stations. In 2010 the Industrial Emissions Directive (Directive 2010/75/EU) was introduced by the European Parliament, committing European Union members to control and reduce the impact of industrial emission on the environment. The directive uses a polluter pays approach and is based on the 'best available technology' to help reach the goals of the directive.

In July 2006 the Government published 'The Energy Challenge Energy Review Report' in this report it highlighted the two challenges the country faces, energy security and climate change. The report highlights the need for a balanced approach to put the UK on a path to cut carbon dioxide emissions by some 60% by about 2050, with real progress by 2020 and to maintain reliable energy supplies².

In May 2007 the Government published 'Meeting the Energy Challenge a White Paper on Energy', which emphasized the need for cleaner large scale electricity generation and support for a diverse mix of power stations that over time move towards a low carbon mix.

The above sets a framework of policy which new energy generation must comply with to meet European and UK standards on carbon reduction and industrial emissions. The Proposed Scheme is an example of providing a balance between ensuring UK energy security whilst moving toward a more carbon efficient method of producing energy.

The UK Government introduced the Electricity Market Reform (EMR) to incentivize investment in secure, low-carbon electricity whilst improving the security of the UK's electricity supply and improving affordability to customers. The reformed electricity market is intended to transform the UK electricity sector to one in which low-carbon generation can compete with conventional, fossil-fuel generation – ensuring a cleaner, more sustainable energy mix. Nevertheless, gas generation is still required to meet demand. It also contributes to the objective of reducing national carbon dioxide (CO₂) emissions. Generating electricity from gas is more efficient and has a lower carbon intensity than coal, resulting in significantly lower CO₂ emissions per generated MW. The Proposed Scheme will be part of the mix that helps the UK energy industry to move from a coal dependent energy production industry to a more efficient, lower carbon form of energy production.

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/272376/6887.pdf, Pg10.

The NPSs include an explanation of how Government takes account of Policy relating to the mitigation of, and adaptation to climate change. NPS 1 – 5 sets out the Government’s objectives for the development of nationally significant infrastructure in the energy sector.

The Overarching NPS for Energy (EN-1) (DECC, 2011a) emphasises the importance of a diverse mix of energy generating technologies, including renewables, nuclear and fossil fuels, to avoid over-dependence on a single fuel type and thereby ensure security of supply.

Changes to the current mix of energy generating plant are occurring. A large number of existing oil, coal and nuclear power stations are expected to close over the next 10-15 years due to the requirements of the LCPD and as plants reach the end of their operational lives. NPS EN1 section 3 states that fossil fuels “will continue to play an important role in our energy mix as the UK makes the transition to a low carbon economy, and Government policy is that they must be constructed and operate, in line with increasingly demanding climate change goals.”

The overarching national policy for energy EN-1 goes on to recognise that due to the importance of security of supply and providing flexible back up for new renewable technologies, conventional generating capacity from new fossil fuel generating stations is likely to form part of the energy generation mix.

The NPS for Fossil Fuel Electricity Generating Infrastructure (EN-2) (DECC, 2011b) states “Fossil fuel generating stations play a vital role in providing reliable electricity supplies and a secure and diverse energy mix as the UK makes the transition to a low carbon economy”, further emphasising that fossil fuel generating stations play a vital role in providing reliable electricity supplies.

It is therefore recognised in National Policy that gas generation power stations align with the objectives of the UK Government to reduce carbon emissions and can contribute in assisting the UK in meeting the obligations set out in European Directives.

4 DESCRIPTION OF THE SITE

4.1 CURRENT LAND USE

The Site comprises approximately 222 ha of land within the curtilage of Drax Power Station, land within the ownership of the applicant and across agricultural land to the east of Drax Power Station near Selby, North Yorkshire (**Figure 1**). Environmental constraints in the vicinity of the Site are shown in **Figure 2**.

For the purpose of the EIA Scoping Report, the Site for the Proposed Scheme has been split into two areas, as outlined below:

- Land (circa. 60 ha) within the curtilage of the existing Drax Power Station, including the jetty, and within the ownership of the applicant (hereafter referred to as the 'Power Station Site') for all works other than the pipeline (**Figure 1**);
- Land (circa. 162 ha) along the route of the proposed new gas supply pipeline options. Two routes are currently under consideration, both of which are approximately 3 km in length and cross agricultural land to the east of Drax Power Station. These options are known as option 4 and option 5 (hereafter referred to as 'the Pipeline Study Area', or by the option names as appropriate) (**Figure 1**).

At this stage the Site Boundary does not denote the final application boundary (i.e. red line boundary) upon which development consent will be sought, but is considered the maximum extent of all potential permanent and temporary works required as part of the Proposed Scheme. The Site may be amended during the consultation, EIA and design processes. For example, the pipeline route is expected to be refined to a single option.

The land within the curtilage of Drax Power Station has been further divided into a number of development parcels, as detailed within **Table 4.1** below.

Table 4.1 Description of development parcels within the Power Station Site

| DEVELOPMENT PARCEL | DESCRIPTION |
|--------------------|--|
| A | Agricultural land owned by Drax Power Limited and leased for agricultural purposes. |
| B | Scrub land within the curtilage of Drax Power Station |
| C | Former business park and wood yard within the curtilage of Drax Power Station |
| D | Roadway from North Gate Entrance |
| E | Scrub land within the curtilage of Drax Power Station |
| F | Unit 5 and 6 (including associated infrastructure), stores, contractor facilities (including car park), ash lagoon and National Grid substation within the curtilage of Drax Power Station |
| G | Riverside jetty owned by Drax Power Limited |
| H | Hard standing, fuel oil store, grassland and other infrastructure within the curtilage of Drax Power Station |

Drax Power Station is a large coal-fired power station which includes three units already converted to biomass. Land uses within the Power Station Site are predominantly associated with operation of the power station. This includes, a coal stock yard, hard standing, contractors' compounds, car parks, access / service roads and a riverside loading / unloading jetty, which is linked to the River Ouse to the east. Other land uses within the Power Station Site not directly related to the operation of the power station comprise open grassland, scrub and farmland.

The Pipeline Study Area in which pipeline works are proposed is predominantly rural and agricultural. This includes land classified as Grade I 'Excellent' and Grade II 'Very Good' in the Agricultural Land Classification's (ALC) high level strategic dataset³. Some parts of the Pipeline Study Area have been resurveyed post-1988.

³ The Ministry of Food and Fisheries (MAFF) provisional Agricultural Land Classification mapping (Pre-1988 and Post-1988)

The road network adjacent to and within the Pipeline Study Area comprises the A645 and minor roads connecting the towns of Drax, Newland and isolated properties. Rusholme Wind Farm is located to the east of the Pipeline Study Area.

4.2 TOPOGRAPHY

The Power Station Site lies approximately 6 m Above Ordnance Datum (AOD). Lower elevations are present to the east of the Power Station Site, and within the Pipeline Study Area, associated with the floodplains of the River Aire and River Ouse. Within the wider surrounding area, the topography remains generally low-lying at a similar elevation to the Power Station Site. Within 10 km of the Power Station Site, localised areas of higher elevation consist of Brayton Barff woodland (55 m AOD) 8 km north-west of the Power Station Site and land to the east of Eggborough (15 m AOD) approximately 9 km south west of the Power Station Site.

4.3 HISTORIC LAND USE

Using North Yorkshire County Council's Online Historic Maps⁴ information, the earliest available Ordnance Survey (OS) map from 1846-63 shows the Power Station Site as enclosed agricultural land with a property titled 'Wood House' within the boundary of the current Power Station Site. Within the wider Pipeline Study Area is the settlement of Drax and other isolated properties connected by a local road network set within enclosed agricultural land.

By the 1889-99 OS map series, the Hull Barnsley and West Riding Junction Railway (later renamed to Hull and Barnsley Railway in 1905) and Drax Station are shown. The Power Station Site is still shown as enclosed agricultural land, and includes isolated parcels of woodland. Few significant changes in land use are evident in the 1907-24 OS map series. By the 1930-54 map series the Selby to Goole Railway and Drax Hales Station are shown.

Construction of Drax Power Station began in 1967, to be officially opened in 1975⁵. By 1986 the Power Station had doubled in size. Partial alignments of the now disused Hull and Barnsley Railway, and Selby to Goole Railway are now utilised for rail operations of the Power Station.

4.4 TRAFFIC AND TRANSPORTATION

The Power Station Site is currently accessed to the south from the A645 and east from New Road. The A1041 and the A645 serve to connect the Drax Power Station to the wider road network including the M62 (J32) approximately 6 km south. Staff and visitors access the Power Station via the 'South Gate' on the A645, whereas contractors, deliveries and all HGV traffic make use of the site entrances off New Road.

The site is also currently served by rail for deliveries of coal and access to the River Ouse via a jetty located off Redhouse Lane.

A single bus service (No 8) provides access to the Power Station Site, stopping at Drax Power Station four times during the day between Monday and Friday; approximately every two hours from 08:47. There are a further two bus services which operate between Goole and Selby via Camblesforth (located approximately 2 km to the south of the Site).

Drax Power Station is well connected to the local highway network, with good pedestrian links to local bus stops on the A645 and links to Drax village and Camblesforth

Snaith Railway Station is the closest station to the site, located around 5.5 km away; services operate between Leeds, Wakefield, Pontefract, Doncaster and Goole. Selby Railway Station is located approximately 9 km from the Power Station Site and provides further services to locations such as Manchester and London.

Drax Power Station is served by a railway line which connects with the Pontefract line to the south. The major roadway infrastructure is the A645, located in the south of the study area on the southern perimeter of the power station. There are no known fuel retail sites within the study area.

⁴ http://maps.northyorks.gov.uk/connect/analyst/?mapcfg=historic_maps

⁵ <https://www.drax.com/about-us/our-history/>

Public Rights of Way (PRoW), which are all footpaths, run immediately adjacent to the western and northern borders of the Power Station Site. The PRoW network extends across much of the Pipeline Study Area and surrounding area, with a high concentration between the village of Drax and the River Ouse to the north. The Trans-Pennine Trail long distance path and Sustrans Route 65 run on the eastern bank of the River Ouse.

4.5 NOISE

The Power Station Site and the Pipeline Study Area are located within the curtilage of Drax Power Station and agricultural land. Given the dominance of Drax Power Station within the environment, the noise environment is considered to be dominated by noise from the power station, traffic using the wider road network and farming machinery. The closest residential receptors are shown in **Figure 2**.

4.6 AIR QUALITY

The Power Station Site and Pipeline Study Area are located in an area where air quality is mainly influenced by existing emissions from the Drax Power Station and by traffic emissions from vehicles using the local road network, including the M62 motorway. There are a number of industrial pollution sources in the surrounding area that influence air quality, including the Eggborough Power Stations and the Ferrybridge Energy from Waste plant, currently under construction.

The Proposed Scheme lies within Selby District and according to SDC's latest Air Quality Annual Status Report⁶, the air quality objectives are met throughout the District, apart from exceedances of the annual mean NO₂ objective in Selby Town "related to traffic emissions"⁷. Local traffic and the presence of street canyons (narrow streets with poor dispersion of pollutants) have been identified as issues contributing to these exceedances⁸. As a result of these exceedances, SDC designated an Air Quality Management Area (AQMA) in 2016. SDC is currently preparing a draft Air Quality Action Plan (AQAP) to address air quality issues within its area of jurisdiction. The Proposed Scheme lies approximately 6 km to the southeast of the AQMA.

SDC does not monitor air quality in the vicinity of the Proposed Scheme but monitoring was undertaken by the Aire Valley power stations – Drax, Eggborough and Ferrybridge. Data for these stations have been obtained from the White Rose Carbon Capture and Storage (CCS) Project ES. In addition, background pollutant concentrations are available from the national maps provided on the Department for Environment, Food & Rural Affairs (Defra) website⁹. Background concentrations of pollutants included in the Air Quality Strategy (AQS) have been mapped at a grid resolution of 1x1 km for the whole of the UK. **Table 4.2** summarises the relevant background pollutant concentrations in the vicinity of the Site in 2017.

Table 4.2 Pollutant Concentrations (µg/m³)

| SOURCE | NO ₂ | PM ₁₀ | PM _{2.5} |
|---|-----------------|------------------|-------------------|
| Defra Background maps 2017 ^{9,T} | 10.2 – 12.3 | 14.1 – 16.3 | 9.7 -11.1 |
| JEP - Hemmingbrough Landing [*] | 16.9 | n/a | n/a |
| JEP - Downes Ground Farm [*] | 16.2 | n/a | n/a |
| JEP - West Farm [*] | 16.4 | n/a | n/a |
| JEP - Smeathalls Farm [*] | 20.4 | n/a | n/a |

^TThe range covers concentrations at grid squares within 2 km from the Site

^{*}2007-2013 average taken from the White Rose Carbon Capture and Storage (CCS) Project ES Volume 2 Chapter A¹⁰

⁶ SDC (2016) Air Quality Annual Status Report, June 2016

⁷ <http://www.selby.gov.uk/local-air-quality-management> (accessed 9 September 2017)

⁸ SDC (2015) Detailed Assessment of Nitrogen Dioxide (NO₂) on New Street, Selby, March 2015

⁹ <https://uk-air.defra.gov.uk/data/laqm-background-home>

¹⁰ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010048/EN010048-000459-6.3.1%20ES%20Volume%20%20Chapter%20A%20-%20Emissions%20to%20Atmosphere%20Technical%20Report.pdf>

4.7 LANDSCAPE AND VISUAL

The Proposed Scheme is not located within or near to any nationally or regionally designated landscapes.

The Proposed Scheme is located entirely within National Landscape Character Area 39: Humberhead Levels¹¹. This area is described as a “flat, low lying and large scale agricultural landscape” and Natural England’s assessment finds that “The whole area is characterised by long views and big open skies”.

A regional landscape character assessment has been undertaken by North Yorkshire County Council¹², which states that the Proposed Scheme sits within the Levels Farmland Landscape Character Type (LCT) and the River Floodplain LCT. The key characteristics of both are outlined in **Table 4.3**.

At the local level¹³, the Proposed Scheme falls within the Camblesforth Lowlands Local Landscape Character Area (LLCA). This is described as follows:

“...where small blocks of woodland are an important feature of arable farmland on lighter sandy soils, with significant areas of semi-natural scrub. The Drax power station is visually very prominent in an otherwise rural landscape”

Table 4.3 Key characteristics of regional landscape character types

| LANDSCAPE CHARACTER AREA | KEY CHARACTERISTICS |
|--------------------------|--|
| Levels Farmland | <ul style="list-style-type: none"> – Predominantly flat, low-lying landscape which encompasses a patchwork of arable fields; – Large scale, open and rectilinear field pattern; – Dykes or ditches often form field boundaries, with a general absence of hedgerows; – Industrial scale farm buildings, large embankments and drains, and major energy and transport infrastructure contribute human elements; and – Historical features, such as windmills, recording past attempts to drain the landscape are key features |
| River Floodplain | <ul style="list-style-type: none"> – A series of flat, low lying, relatively narrow river corridors which flow through the different types of Vale Farmland Landscape Character Types within the Study Area; – The ‘Ings’ flood meadows maintained by traditional hay making activities; – Landscape pattern comprises a mixture of flood meadows, neutral grasslands and floodplain mires; – Halls and manor houses are key landscape features; – River engineering features such as Levees assert a human influence over the landscape; – Power stations, pylons and former collieries are present in parts of this Landscape Character Type; and – The A1 (M) introduces a source of noise and visual intrusion in several places. |

The existing landscape is one of an intensive agriculture with large fields, sometimes bounded by hedgerows with trees (more so to the south of the Proposed Scheme, less so to the north) with a number of villages and a broad scatter of isolated residential properties. There is a relatively dense road network including the main A645 and A1041 roads. National Cycle Network Route 65 crosses the area, along with the Trans-Pennine Trail long distance path, and there is a dense network of local public rights of way. As noted in the National

¹¹ Natural England, *National Character Area Profile: 39. Humberhead Levels*, 2014

¹² Chris Blandford Associates (on behalf of North Yorkshire County Council), *North Yorkshire and York Landscape Character Assessment*, 2011

¹³ Woolerton Dodwell Associates (on behalf of Selby District Council), *Selby District Council Landscape Character Assessment*, 1999

Landscape Character Area description, the area is generally flat and low lying, and the open nature of the landscape and surrounding area, resulting in extensive views within the landscape.

4.8 HISTORIC ENVIRONMENT

The historic environment comprises World Heritage Sites (WHS), Scheduled Monuments (SM), Listed Buildings (all grades), Locally Listed Buildings and Structures (LLBs), Registered Parks and Gardens (all grades), battlefields, Conservation Areas, the Historic Landscape (HLC), Archaeological Areas (AAs) and archaeological remains both buried and above ground (earthworks) and their settings.

There are no WHS, Registered Park and Gardens, Historic Battlefields, Historic Conservation Area or Archaeological Areas within the Site or 5 km of the Site.

Within the Site boundary there is a single SM, *Scurff Hall moated site*¹⁴, with a further three SMs within 2 km of the Site. There are two listed buildings within 500 m of the Site, comprising Grade I *Church of St Peter and St Paul*¹⁵ and Grade II *Cross base and shaft in churchyard of St Peter and St Paul*¹⁶, with a further 11 Grade II listed buildings within 1 km of the Site within the villages of Newland and Barmby on the Marsh.

Non-designated heritage assets included within the Historic Environment Record (HER) within 300m of the Site includes monuments, buildings and find spots from various time periods including early Iron Age, Roman, Medieval, 19th and 20th centuries. Drax Abbey Farm (12th Century Priory) borders the Power Station Site to the north, and several HER records are recorded within the Pipeline Study Area including a Roman Landing Point. Within the available Historic Landscape Character data, the Power Station Site is recorded as 'Industrial', and the Pipeline Study Area as 'Enclosed Land'.

It is considered that the Site and surrounding environment, lying with in the Humberhead Levels, has a rich historic environment dating from the early prehistoric periods (500,000 BC to AD43) to the modern period (1901 onwards), which reflect the region's varied social and economic history. Known prehistoric period assets are predominantly burial mounds and parts of linear dyke systems, with known settlements from the Romano-British period (ADF43 to 410). Known assets dating to the medieval period (410 to 1540) include rural sites such as moated sites, the remains of monasteries and mills, and areas of ridge and furrow cultivation. Many of the villages and towns originate from the early medieval period (410 to 1066), and they retain some medieval structures such as churches as well as elements of their original plan forms. In addition, the Humberhead Levels is considered to have a considerable palaeo-environmental resource, and the study of the wetland deposits such as the peats, silts and clays provides important information on past environments and climatic conditions.

Archaeological investigative works were undertaken in support of the 2015 White Rose Carbon Capture and Storage Project^{17,18} immediately north and east of the Site. The most significant result was the discovery of an extensive area of probable Roman activity in a field immediately north of the Power Station where ditch remains and associated pottery were recovered. In addition, the work supported the likelihood of a medieval fish pond and moat associated with Drax Priory. The results indicate the potential for remains of both the Romano-British and Medieval Periods to be present within the Site and the wider area. Auger survey revealed a substantial deposit of organic-rich material and peat preserved within the confines of the former channel of the Carr Dyke. This material has the potential to produce a significant palaeo-environmental data-set.

4.9 BIODIVERSITY

Statutory nature conservation sites of European and international importance within 10 km and statutory nature conservation sites of national or local importance within 5 km are detailed within **Table 4.4**.

¹⁴ List Entry Number 1017485

¹⁵ Legacy UID 326465

¹⁶ Legacy UID 326466

¹⁷ Capture Power Limited, *The White Rose CCS (Generating Station) Order, ES Volume 2 Chapter G – Archaeology Technical Report*, November 2014

¹⁸ Headland Archaeology on behalf of Capture Power Limited, *The White Rose CCS (Generating Station) Order, ES Volume 2 Chapter G.1 – Geophysical Survey Results*. November 2014

Table 4.4 Statutory Nature Conservation Sites

| DESIGNATED SITE | DESIGNATION(S) | DISTANCE FROM PROPOSED SCHEME |
|----------------------|-------------------|-------------------------------|
| River Derwent | SAC | 0.7 km to the north |
| Humber Estuary | SAC, SPA, RAMSAR | 3.3 km to the east |
| Lower Derwent Valley | SPA, RAMSAR, SSSI | 4.5 km to the north-east |
| Skipwith Common | SAC, NNR | 8.6 km to the north |
| Thorne Moor | SAC, SPA | 7.1 km to the south |
| Eskamhorn Meadows | SSSI | 1.1 km to the south |
| Barn Hill Meadows | SSSI | 3.4 km to the east |
| Barlow Common | LNR | 2.8 km to the north west |
| Sugar Mill Ponds | LNR | 4.4 km to the south |
| Howden Marsh | LNR | 4.5 km to the east |

The baseline has been informed by an extended Phase 1 habitat survey of the Power Station Site and Pipeline Study Area, which was completed in August 2017. This supported the identification of habitats and features of potential ecological interest across the Site. During the survey an assessment of the Site's potential to support protected and otherwise notable species was also carried out.

The Site consists of a mosaic of habitats, ranging from arable farmland and semi-improved grassland to the bankside habitats of the River Ouse. Small woodland copses, tree lines, hedgerows, areas of scrub and grassland margins along field edges provide potential corridors for the movement of wildlife through the local landscape. The proposed routes for the gas supply pipeline also pass near several water bodies. Much of the land within the Power Station Site is dominated by areas of hard standing and existing buildings and power station infrastructure, although some limited extents of semi-natural and farmland habitats also occur.

4.10 GROUND CONDITIONS AND CONTAMINATION

A review of British Geological Mapping indicates that the Site is underlain principally by the Hemingbrough Glaciolacustrine Formation (silty clay) and the Brighton Sand Formation (sand), as well as in some locations warp (clay and silt) over Sherwood Sandstone Group (SSG) bedrock. Alluvium (clay, silt, sand and gravel) superficial deposits are present to the north of Drax Power Station in association with a tributary of the River Ouse.

No known artificial ground is identified in the BGS 'Onshore GeoIndex'. However, it is likely and it should be assumed that Made Ground is present within the Site associated with the construction/demolition activities associated with all current and historical development.

It is assumed that Made Ground is present within the Power Station Site associated with current and previous construction and demolition activity. Made Ground is a potential source of contamination.

The current and former railway land is considered a potential source of contaminants including hydrocarbons, polychlorinated biphenyls (PCBs), poly-aromatic hydrocarbons (PAHs), solvents, ethylene glycol, creosote, herbicides, metals, asbestos, and ash and fill material potentially containing metals, phenols and sulphates.

The A645 roadway is a potential diffuse source of contamination. Any contaminative substances are likely to be hydrocarbon based, associated with discharges from vehicles.

The agricultural industry is considered a potential source of diffuse contaminants arising from the use of fertilisers, pesticides and herbicides.

Drax Power Station is considered a potential source of contamination. Potential contaminants include metals, metalloids and their compounds, coal, fuel oils, lubricating oils, water and timber treatment chemicals, solvents, PCBs and other transformer oils, and asbestos.

4.11 WATER QUALITY, RESOURCE AND HYDROLOGY

The nearest major surface water feature is the River Ouse, located approximately 1.5 km northeast of Drax Power Station. This flows eastwards into the Humber Estuary. The River Ouse is a 'main river' (a river which the EA has powers to carry out maintenance, improvement or construction work to manage flood risk).

OS mapping indicates the Power Station Site is located within 0.5 km of five ponds and 13 ordinary watercourses or field drains. The Carr Dyke flows through the Power Station Site in an approximate south-west to north-east direction. All identified watercourses are classified as ordinary watercourses under the jurisdiction of the Selby Area Internal Drainage Board (IDB) as Lead Local Flood Authority (LLFA) for this area.

OS mapping indicates the proposed pipeline route options cross or are located within 0.5 km of four ponds and 17 ordinary watercourses or field drains. With the exception of the River Ouse, the features have no known designations, and the use, quality and ecological value of these features is currently unclear. Watercourses crossed by the proposed pipeline route options include the Willow Road Drain and Dickon Field Drain. Route Option 4 also passes within 0.1 km to the south of the River Ouse; this is the closest aspect of the Proposed Scheme to the River Ouse.

All watercourses are understood to drain to the River Ouse.

The quality of the River Ouse closest to the Site (River Ouse from River Wharfe to Upper Humber) has an overall status of moderate, with failing chemical status and moderate ecological status.

Approximately 3.5 km downstream of the Power Station Site, the River Ouse forms part of the Humber Estuary Ramsar site, Special Area of Conservation (SAC), Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI). Natural England undertook an assessment of the SSSI in 2017, which determined the unit to be of variable condition, although the section closest to the Site was described as 'Unfavourable – Recovering'.

The Site is located within a groundwater Source Protection Zone 3 (total catchment). The protected groundwater sources are located to the south at Carlton.

It is understood that there are three water abstractions and 46 discharge consents within 0.5 km of the Site; the groundwater abstractions licenses are for industry, agriculture and potable uses.

4.12 FLOOD RISK

Review of the Environment Agency's (EA's) Flood Map for Planning (Rivers and Sea)¹⁹ indicates that the Site is located in an area of complex flood risk comprising Flood Zones 1, 2 and 3, with some areas understood to benefit from flood defences along the banks of the River Ouse (**Figure 2**).

The source of flood risk is the River Ouse which is tidally influenced at this location, and the ordinary watercourses located within the study area such as the Carr Dyke.

The EA's Flood Risk from Surface Water map indicates that areas of the Site are at risk of flooding from surface water sources. In addition to overland flow routes, the Flood Risk from Surface Water map also indicates fluvial flood risk from watercourses with a catchment of less than c. 3 km² (that are too small to be mapped on the EA's Flood Map for Planning). Flooding from surface water is typically associated with natural overland flow paths and local depressions in topography where surface water runoff can accumulate during or following heavy rainfall events. The areas across the Site at risk of surface water flooding are predominantly found along field boundaries and in local depressions.

4.13 SOCIO-ECONOMICS

Within close proximity of the Site, there are the villages of Drax, Long Drax, Carlton, Barlow and Barmby-on-the-Marsh and Camblesforth with the larger settlements at Snaith, Goole and Selby. The 2015 Office for National Statistics population estimates for East Riding of Yorkshire was 336,700, whilst Hull is 259,000. The

¹⁹ Environment Agency, *Flood Map for Planning [Online]*, Accessed August 2017 via <https://flood-map-for-planning.service.gov.uk/>

2015 estimate for the Humber Local Enterprise Partnership was 925,100. There is a lower proportion of individuals aged 16-64 in Selby (62.2%) compared with the averages across Yorkshire and the Humber (62.0%) and Great Britain (63.3%).

The Indices of Multiple Deprivation 2015 use a combination of information relating to income, employment, education, health, skills and training, barrier to housing and services, and crime to create an overall score of deprivation. These scores are then used to rank specific geographical extents. A low rank indicates greater relative deprivation; hence the most deprived area is ranked 1. Selby District was ranked 254 in England out of 326 local authorities and, as such, was in the 50% least deprived areas. In the vicinity of the Site, there are limited pockets of deprivation to the south-east at Goole and to the north in Selby.

The Local Economic Assessment identified that the Site falls within the Selby and Goole Functional Economic Area but has strong economic linkages with the wider surrounding area. In Selby District, the proportion of individuals aged 16-64 who are estimated to be economically active is 82.2% in 2015, with 79.8% classed as 'in employment'. The job density levels (i.e. the ratio of total jobs to the population aged 16-64) in Selby is 0.73. This is lower than the averages across the Yorkshire and Humber Region (0.79) and Great Britain (0.83). This indicates less availability of employment opportunities within Selby.

At present, there are significant employment opportunities associated with the operation of Drax Power Station. In Selby District, there were estimated to be 35,000 jobs in 2015, with 68.6% full-time and 31.4% part-time. Services (Industry Sectors G-S) is the largest employment sector, accounting for 69.5%. However, in Selby there are a greater proportion of jobs in the Manufacturing sector at 20.0%, compared with 11.5% across the Yorkshire and Humber Region and 8.5% across Great Britain.

5 DESCRIPTION OF PROPOSED SCHEME

5.1 OVERVIEW OF PROPOSED SCHEME

Drax Power Ltd is seeking development consent to convert up to two existing coal fired units to gas, capable of generating up to 3,600MW. Drax Power Ltd is also seeking development consent to construct a battery storage facility with capacity of up to 200MW. The project includes associated development. This section of the Scoping Report describes the proposed development in detail.

5.2 NATIONALLY SIGNIFICANT DEVELOPMENT

5.2.1 GAS TURBINE GENERATING UNITS

It is proposed to repower up to two existing coal-powered generating units (units 5 and 6, shown in **Figure 3**) at Drax Power Station with new combined cycle gas turbines. The repowered units would have a new combined capacity of up to 3,600 MW, replacing existing units with a combined capacity to generate up to 1,300 MW. The infrastructure would comprise up to four combined cycle gas turbines (CCGT), each powering a dedicated generator of up to 600 MW in capacity. The new CCGT gas turbines will provide steam to the existing steam turbines which will generate up to 1200 MW.

At present there are three potential options under consideration:

- Repowering of unit 5
- Repowering of unit 6
- Repowering of both units 5 and 6

In the event that a single unit is converted i.e. either unit 5 or 6, up to two gas turbines and up to two HRSGs would be constructed. If both units are converted then this would be undertaken consecutively rather than concurrently.

The gas turbine generating units will be designed to operate in either open cycle or combined cycle mode. When operating in open cycle, the exhaust gas from the gas turbine will be sent direct to the atmosphere through a bypass stack. When operating in combined cycle, the exhaust gas from the gas turbine will pass through the HRSG to generate steam that will be used to power the existing steam turbines.

The plant will be designed to operate for up to 25 years after which the infrastructure will be reviewed. If it is not appropriate to continue operation, the plant will be decommissioned.

The main buildings and elements of the gas turbine generating units are described below.

5.2.2 GAS TURBINES

It is proposed to construct up to four separate gas turbines. Air will be drawn into the compressor of the gas turbine and compressed. Fuel is injected into the combustion chamber. The mixture of fuel and compressed air is ignited, producing gases at a high temperatures. As the gas expands, it rotates the turbine to produce electricity.

5.2.3 HEAT RECOVERY STEAM GENERATORS

It is proposed to construct up to four Heat Recovery Steam Generators (HRSGs). The HRSGs recover the hot flue gases from the gas turbines. The heat is used to produce steam that will drive the existing steam turbines. Each HRSG will have a main stack, expected to be up to 70 m in height. Bypass stacks will also be required, which may be shared between units in some configurations. The height and number of stacks will be confirmed during the EIA process.

5.2.4 NOX ABATEMENT TECHNOLOGY

NOx abatement technology will be built into the facility if necessary to reduce emissions of nitrogen oxides from the plant and ensure compliance with Best Available Technology (BAT) Reference (BREF) standards.

5.2.5 COOLING SOLUTION

Cooling for the new CCGT will be provided by the existing condenser of the steam turbines and cooling water infrastructure including reuse of the existing northern group of cooling towers, cooling water make-up intake and cooling water outfall and other associated infrastructure.

It is proposed to utilise the existing cooling infrastructure at the Drax Power Station. Drax currently uses hyperbolic (natural draught) cooling towers to transfer heat and condense steam from the existing units; heat is expelled to the atmosphere. River water is abstracted from the River Ouse and pumped to the station where it is treated to remove solids and other material. The treated river water is then be used in the cooling water circuit to remove heat from the steam cycle and condense the pure water generated in the steam cycle, so it can be re-used.

5.2.6 OPERATION/MAINTENANCE AND CONTROL

The gas turbine generating units would be operated and controlled from the current Drax control room, which is situated onsite. The proposed generating equipment would be capable of responding to requests from National Grid to provide short-term additional generating capacity, as well as selling electricity into the market and other ancillary grid services. Gas generation allows the new units to respond rapidly to changing demands of the electricity market.

5.2.7 BATTERY STORAGE

It is proposed to construct a battery storage facility with capacity of up to 200 MW. The battery storage is proposed to be constructed within Area E, as shown on Figure 1.

The battery storage facility will either be housed in multiple 'shipping' type containers or housed in a dedicated stand-alone building.

As well as the containers housing the battery storage cells, other ancillary equipment will be required. This comprises cooling systems and electrical control and switchgear containers or cabinets in addition to step-up transformers.

If the battery storage cells are housed inside a building all ancillary equipment except cooling systems and transformers will also be housed inside the building.

5.3 ASSOCIATED DEVELOPMENT

5.3.1 GAS PIPELINE

The gas turbine generating units will require a new gas connection from the Gas Transmission Network. The connection will comprise a new pipeline approximately 3 km in length extending eastwards with a diameter of up to 600 millimetres nominal bore, a Minimum Offtake Connection (MOC) and Pipeline Inspection Gauge (PIG) Trap Facility (PTF) and on site Pressure Reduction and Metering Station (PRMS).

The two pipeline route options under consideration are shown in **Figure 1**. Ultimately, only one pipeline route will be required and the choice of route will follow a detailed route selection exercise, taking into account environmental and engineering issues.

The applicant is considering whether this will form part of the application for a development consent order or form a separate standalone application under the Town and Country Planning Act 1990).

5.3.2 ELECTRICAL CONNECTION

It is proposed that the gas turbine generating units, existing steam turbines and battery energy storage facility(s) will be connected (or banked) using underground cables to a new common sub-station. The substation will use Gas Insulated Switchgear (GIS) and be housed in a new building to be located close to the gas turbine generating units. The likely location for the GIS sub-station is in Area F (**Figure 1**).

The new substation will then connect to the existing National Grid 400 kV substation, situated to the south of the gas turbine generating units and immediately adjacent the existing power station development. The connection into the 400 kV substation will be via either overhead lines or underground cables.

5.3.3 CARBON CAPTURE READINESS

The gas turbine generating units will be designed to be carbon capture ready and a suitable area of land has been identified for the installation of carbon capture equipment (**Figure 1**) in the future if required. In addition, suitable connection corridors for exhaust gas ductwork from the gas turbine generating units have been identified if necessary.

5.3.4 DEVELOPMENT OF SWITCHYARD AND TRANSMISSION PLANT WORKS IN EXISTING 400KV NATIONAL GRID SWITCHYARD

The electrical connection from the new GIS Substation will connect to the existing 400 KV switchyard which is owned and operated by National Grid. Works will be required within the existing switchyard in order to accommodate the new connection.

It is assumed that additional works beyond the boundary of National Grid's 400KV switchyard and/or re-stringing of external power lines are outside the scope of this project and will, if required, be consented by National Grid under a separate project.

5.3.5 CONSTRUCTION LAYDOWN

Several areas of the Drax site and land owned by Drax adjacent to the site have been identified for use as construction laydown. These areas will be used during construction for the locating of construction offices, warehouses, workshops, open air storage areas and car parking.

5.3.6 TEMPORARY BRIDGE

An area of land owned by Drax has been identified for use as construction laydown and/or contractor car parking (Area A and B as shown in **Figure 1**). This area is separated from the main Drax site by New Road, which is a public highway. In order to avoid staff crossing this road on foot a new, temporary pedestrian bridge will be constructed linking the contractor laydown/car parking area with the main Drax site.

5.3.7 TEMPORARY CRANE ON JETTY

The existing Drax Jetty on the River Ouse may be used for loading and unloading of large plant and equipment up to the Jetty's current rating of 200 tonnes. Some works may be required to enable the transfer of large plant and equipment from river barges to land transport. These works may comprise: location of a mobile crane landside of the jetty, associated security lighting, fencing and storage and welfare facilities and laydown areas. It is not anticipated that jetty works or capital dredging will be required.

5.3.8 DEMOLITION AND RELOCATION OF EXISTING FACILITIES

In order to construct the gas turbine generating units and associated facilities, it is proposed to demolish and relocate existing facilities at the Drax site. This will include the Turbine Outage Stores, Learning centre, contractors compounds and welfare facilities (temporary), ash lagoons, leisure facilities (squash courts).

5.3.9 OTHER WORKS

Other works which may be incorporated in the proposal include:

- Provision of security infrastructure, including cameras and, perimeter fencing
- site lighting infrastructure, including lighting columns;
- site drainage;
- electricity, water, wastewater and telecommunications and other services;
- boundary treatments such as landscaping and ecological mitigation as necessary; and
- construction compound (s) (assuming that there will be more than one).

5.4 CONSTRUCTION

The gas turbine generating units will be constructed in phases, with construction of each taking approximately 34 months. The overall construction programme if two units are built is, therefore, anticipated to last approximately 68 months. The battery storage facility and gas pipeline will be constructed within this programme.

A summary of the construction programme for a single generating unit, battery storage facility and gas pipeline is set out below:

| | Yr1 | | | | Yr2 | | | | Yr3 | | | | Yr4 |
|-----------------------------|-----|----|----|----|-----|----|----|----|-----|----|----|----|-----|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 |
| Mobilisation & Soil Removal | ■ | ■ | | | | | | | | | | | |
| Earthworks | | ■ | ■ | ■ | | | | | | | | | |
| Civil Works | | | | ■ | ■ | ■ | ■ | | | | | | |
| Structural Steel | | | | | ■ | ■ | ■ | ■ | ■ | | | | |
| Installation | | | | | | | ■ | ■ | ■ | ■ | ■ | | |
| Commissioning | | | | | | | | | | ■ | ■ | ■ | ■ |

The peak construction period is anticipated to be between months 18 (Q2 of Year 2) and 22 (Q4 of Year 4) with up to 700 construction works at the site.

A CEMP will be prepared for the Proposed Scheme. The CEMP will detail the environmental controls / protection measures and safety procedures that would be adopted during the demolition and construction of the Proposed Scheme. This will provide a tool to ensure the successful management of the likely environmental effect as a result of construction activities. The implementation of the CEMP is a form of tertiary mitigation and has therefore been assumed as an inherent part of the project in the assessment of environmental effects.

The Environmental Statement will provide further information regarding the proposed construction activities of the proposed development and their duration.

5.4.1 DECOMMISSIONING

The proposed development is expected to operate for 25 years. At the end of the operation, the facility may have some residual life remaining and an investment decision may be made as to whether the operating life will be extended.

At the end of its operating life, the generating unit, battery storage facility and gas pipeline will be shut down and decommissioned.

6 INSIGNIFICANT EFFECTS

6.1 INTRODUCTION

As part of the EIA process and based on the information available to date, there are a number of topics for which an environmental assessment is not justified; these have, therefore, been scoped out and are not intended to be included in the ES.

The topic areas for which no likely significant environmental effects have been identified are:

- Climate
- Health;
- Agricultural Land; and
- Lighting.

The topic areas scoped in to the EIA will only report on likely significant effects. For topics that will be assessed in the ES, **Section 7** also identifies some insignificant effects that will not be considered in the ES.

6.1.1 CLIMATE

The key impact of the Proposed Scheme on climate is through the emission of CO₂, a greenhouse gas. There will be a change in emissions of CO₂ resulting from the repowering of coal fired units to gas power, but a lower overall emissions intensity in terms of CO₂ emitted per unit of power generated.

NPS EN-1 states with respect to fossil fuel energy generation projects that “Government has determined that CO₂ emissions are not reasons to prohibit the consenting of projects which use these technologies or to impose more restrictions on them in the planning policy framework than are set out in the energy NPSs”.

The change in CO₂ emissions will be quantified in Chapter 8 – Air Quality but, in line with NPS EN-1, the ES will not assess project carbon emissions against carbon budgets; similarly, the ES will not attempt to quantify the effect of the Proposed Scheme on climate change.

The effects of the project on natural resources, vulnerability of the project to climate change and potential environmental effects of major accidents or natural disasters will be discussed in ES **Chapter 3 – Description of the Proposed Scheme**.

6.1.2 HEALTH

Health is not clearly defined with the EIA Regulations 2017 but is comprised by many ‘determinates’ which can, in isolation or combination, influence the health of individuals and / or communities. The health determinants influenced by the Proposed Scheme are considered to be limited to the natural environment (i.e. air quality, noise, etc). With respect to the Proposed Scheme, potential human health determinants will be assessed as part of individual technical topics, using applied limits / thresholds determined within legislation, guidance and standards, driven by an understanding of the effects on human receptors. A separate Health chapter is not required within the ES. In the absence of a Health chapter, the ES will include a reference table within Chapter 5 – Approach to EIA indicating where within the ES health effects have been assessed.

6.1.3 AGRICULTURAL LAND

The ‘best and most versatile agricultural land’ is defined as Grades 1, 2 and 3a by the National Planning Policy Framework (NPPF) and PPG. This is the land which is determined to be most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non-food uses such as biomass, fibres and pharmaceuticals. Grades 3b, 4, and 5 are used to classify land that is of moderate quality to very poor quality. The Agricultural Land Classification (ALC) is based on the long term physical limitations of land for agricultural use. There are a number of factors that affect the grade and the main ones are climate, site and soil characteristics, and the interactions between them.

The Proposed Scheme is split between land that falls within the curtilage of Drax Power Station and agricultural land to the east of the power station required for the gas supply pipeline. As detailed with **Section 4** the Site includes agricultural land that is determined to be 'best and most versatile'.

As detailed within **Section 5**, in order to construct the gas supply pipeline there will be a requirement to temporarily occupy land either side of the pipeline route, resulting in a continuous strip approximately 30 m in total width for the entirety of the pipeline route. Depending on the final route there may be a requirement to increase the width of working areas depending on localised constraints such as at crossing with roads or waterways or other utilities.

As such, there will be a temporary loss or severance of best and most versatile agricultural land to facilitate the construction of the gas supply pipeline. Nevertheless, as detailed within **Section 5**, following construction of the pipeline, agricultural land will be reinstated to the existing ALC Grade. Furthermore, throughout the construction phase a Soil Management Plan (SMP) will be implemented in order to maintain the integrity of the soil. Therefore, there will not be significant loss of best and most versatile agricultural land or other significant impact on the viability of farm practices.

It is expected that any temporary and permanent effects on agricultural land will be insignificant due to the duration of activities and the limited area of permanent land take required. If, during the design process, potentially significant effects are identified, then these impacts will be discussed in ES **Chapter 15 – Socio-economics**. These effects might include:

- The quality and quantity of agricultural land to be temporarily affected and permanently lost;
- The effect of that loss and effects such as severance on agricultural holdings;
- The likely effect of major accommodation works for access, drainage and water supply;
- The potential loss of agricultural buildings or other fixed farm capital;
- Loss of access to agricultural farmsteads/ fields;
- Construction effects (e.g. nuisance from dust, traffic, noise or temporary effects on drainage)

6.1.4 LIGHTING

There are a number of lighting installations within the curtilage of Drax Power Station that have been installed in order to facilitate operations within Site and meet necessary health and safety requirements for a safe working environment. Lighting is also present along the A645 and a small extent of Main Road and New Road at the approaches to Drax roundabout. In addition, lighting is present within the village of Drax. There are limited lighting installations within the agricultural landscape associated with farm holdings and residential properties (i.e. façade mounted luminaires).

The Proposed Scheme is not anticipated to contribute significantly to sky glow as it is assumed that all temporary / permanent lighting installations will be designed / installed in line with best practice and relevant standards (e.g. CIE (1997) 126: Guidelines for Minimising Sky Glow, which includes the requirements to minimise upward light emitted and contributions toward sky glow. Therefore, there are unlikely to be significant effects in relation to a change in sky glow.

It is assumed additional temporary lighting required within the curtilage of Drax Power Station will not alter the existing lighting environment within the curtilage of the Drax Power Station or that experienced by surrounding receptors. As such, there will be no significant effects with regards to temporary construction lighting within Drax Power Station. Therefore, potential effects arising from temporary construction lighting would be limited to works associated with the gas supply pipeline. However, it is assumed that all construction works would be subject to a CEMP that would include best practice measures to limit potential impacts as a result of artificial lighting, including post-installation checks and restrictions of working hours to ensure that temporary lighting is suitably controlled.

There is no requirement for permanent operational lighting associated with the gas supply pipeline and as such new lighting would be limited to within the boundary of Drax Power Station. It is anticipated that the operational lighting would be designed in line with best practice guidance, including but not limited to BS EN12464-2:2014 Lighting - Lighting of Work Places, Outdoor Works and Chartered Institution Building Service Engineers (CIBSE) Lighting Guide 6 - The Exterior Environment. Adherence to relevant guidance and standards will ensure that any nuisance or disturbance associated with operational lighting installations would be minimal.

Temporary and permanent lighting is not considered to give rise to significant changes to the night time scene experienced by surrounding residential receptors. All temporary and permanent lighting required within the

existing Power Station would be viewed within the context of the existing lighting. Temporary construction lighting associated with the gas supply pipeline would be effectively controlled as part of a CEMP. As such, there is unlikely to be significant effect in relation to changes in night time scene.

As such, effects associated with lighting will not be considered within the ES.

7 TECHNICAL ES COMPONENTS

7.1 TRAFFIC AND TRANSPORT

7.1.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Motorised users of local roads, including vehicle drivers and public transport users;
- Non-motorised users of local roads and PRow, including pedestrians, cyclists and equestrians; and
- Residents within the settlements of Camblesforth, Drax, Long Drax, Barlow, Barmby on the Marsh, Carlton and Hemingbrough.

7.1.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- The Proposed Scheme is not anticipated to result in an increase in operational workforce at Drax Power Station post construction, nor require additional trips to facilitate the operation and maintenance of the Proposed Scheme. Therefore, no additional trips are expected during operation phase. As such operational related traffic effects will not be considered as part of the ES.
- Use of the existing Jetty and waterways for the delivery of abnormal loads/plant equipment is not considered significant in highway and transportation terms.

7.1.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE † |
|--|--|--------------------------------|
| <i>Nuisance and disruption to users of the local road network caused by demolition and construction traffic (including HGVs).</i> | <i>Users of the local road network including vehicles, pedestrians, equestrians and cyclists.</i> | D/C |
| <i>Fear and intimidation, increased traffic delay, severance and road safety impacts on residents as a result of Construction phase traffic (consisting of HGVs, Abnormal Loads, cars and LGVs) travelling to and from the Project Site.</i> | <i>Residents of Camblesforth, Drax, Long Drax, Barlow, Barmby on the Marsh, Carlton and Hemingbrough</i> | D/C |
| † D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE † |
|--|---|--------------------------------|
| <i>Nuisance and disruption to users of the local road network and PROW caused by demolition and construction traffic (including HGVs).</i> | <i>Users of the local road network including vehicles, pedestrians, equestrians and cyclists.</i> | C |
| † D – Demolition, C – Construction and O – Operational | | |

7.1.4 ASSESSMENT METHODOLOGY

The following methodology for assessment is proposed:

- Desk-study to identify the existing local and strategic road network and PROW routes within the vicinity of the Site (i.e. within a suitably defined Study Area);
- Nuisance and disruption caused by construction traffic and activities on motorised and non-motorised users will be considered qualitatively using the information presented within a Transport Assessment. This will specifically consider the increases of traffic on the network during the construction phase and associated changes to motorised and non-motorised users in terms of severance, delay, safety, fear and driver stress. The assessment will be in line with the principles outlined in Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 Part 8²⁰ and Part 9²¹, Guidelines for the Environmental Assessment of Road Traffic²² and Planning for the Future: a guide to working with Highways England on planning matters (paragraphs 48-53)²³.

7.1.5 LIMITATIONS AND ASSUMPTIONS

The assessment is based on the assumption that additional staff, deliveries or trips to Drax Power Station will be negligible during the operational phase of the Proposed Scheme and thus deemed insignificant in terms of Traffic and Transport.

7.2 AIR QUALITY

7.2.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified using applicable EA²⁴ and Institute of Air Quality Management (IAQM)²⁵ guidance, and include the following:

- Human receptors: Wren Hall, Old Lodge, Drax Abbey Farm, Foreman's Cottage and Grange Cottages, East Yorkshire Caravan Salvage and Drax Sports and Social Club; and
- Ecological receptors: Designations including, Humber Estuary (SPA and SAC); Lower Derwent Valley – (SPA and SAC); River Derwent (SAC and SSSI); Skipwith Common (SAC and NNR) Thorne & Hatfield Moors (SPA); Thorne Moor (SAC and SSSI); and Meadow East of Orchard Farm (LWS).

²⁰ Highways England, *DMRB Volume 11 Section 3 Part 8 Pedestrian, Cyclists, Equestrians and Community Effect*, 1993

²¹ Highways England, *DMRB Volume 11 Section 3 Part 9 Vehicle Travellers*, 1993

²² Institute of Environmental Management and Assessment (IEMA), *Guidelines for the Environmental Assessment of Road Traffic*, 1993

²³ Highways England, *Planning for the future: a guide to working with Highways England on planning*, September 2015 [Online], Accessed via https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461023/N150227_-_Highways_England_Planning_Document_FINAL-lo.pdf, August 2017.

²⁴ Environment Agency. Air emissions risk assessment for your environmental permit. Available at: <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>

²⁵ Institute of Air Quality Management (Version 1.1 Updated June 2016). Guidance on the Assessment of Dust from Demolition and Construction.

7.2.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- There are no emissions to air associated with the operational phase of the gas pipeline and therefore this element will not be considered in the ES; and
- It is assumed that the Proposed Scheme will not result in additional vehicle trips to and from the Site, as detailed within **Section 7.1.2**. As such, changes in emissions to air due to operational traffic will not be considered within the ES.

7.2.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE † |
|--|---|--------------------------------|
| <i>Nuisance impacts from dust generated during demolition/construction and increase in emissions to air from construction mobile plant equipment</i> | <i>Human receptors within 350 m from Site boundary and 50 m from construction routes Ecological receptors within 50 m from Site boundary and 50 m construction routes</i> | D/C |
| <i>Increase in emissions to air due to change in traffic flows during construction and demolition</i> | <i>Human and Ecological receptors along proposed construction routes</i> | D/C |
| <i>Change in emissions to air (including CO₂) from operation of new CCGT and the repowering of the existing units</i> | <i>Human and Ecological receptors in the vicinity of the power works; climate impact of CO₂</i> | O |
| <i>Change in emissions to air due to operational traffic</i> | <i>Human and Ecological receptors in the vicinity of the power works</i> | O |
| † D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE † |
|--|---|--------------------------------|
| <i>Nuisance impacts from dust generated during demolition/construction and increase in emissions to air from construction mobile plant equipment</i> | <i>Human receptors within 350 m from Site boundary and 50 m from construction routes Ecological receptors within 50 m from Site boundary and 50 m construction routes</i> | D/C |
| † D – Demolition, C – Construction and O – Operational | | |

7.2.4 ASSESSMENT METHODOLOGY

The approach to the assessment of the current proposals for the Site will be agreed with SDC and the EA. Based on the likely environmental effects detailed in **Section 7.2.3**, the scope of the assessment will include the following:

- 1 Quantitative assessment of emissions to air (nitrogen oxides (NO_x) and carbon monoxide (CO)) from the Combined Cycle Gas Turbine (CCGT) stacks and the repowering of the existing units during operation;
- 2 Quantification of the change in CO₂ emissions resulting from the repowering of units;

- 3 Qualitative assessment of emissions to air from traffic associated with construction, operation and decommissioning; and
- 4 Qualitative assessment of construction dust and emissions from mobile plant from construction and decommissioning activities.

In order to assess potential traffic impacts during construction, operation and decommissioning the DMRB²⁶ guidance will be used to firstly identify whether there is a need for a quantitative assessment. The guidance details a set of criteria stating whether a road is “affected” which are based primarily on the traffic flow increase associated with the different elements of the proposed works.

The IAQM²⁷ / EPUK²⁸ guidance on the assessment of construction impacts provides distance-based criteria for qualitatively assessing dust / particulate matter impacts from construction activities and impacts from mobile plant emissions. This guidance recommends that the potential for dust emissions from four different types of construction activities are assessed: Demolition, Earthworks, Construction and Trackout (the movement of dust/mud offsite on haulage vehicles wheels and bodies onto the public road network where it may be resuspended by other vehicles). This approach will also be used in the assessment of similar effects from the construction of the pipeline works.

The air quality assessment for the operational phase will utilise the ADMS 5.2 model. The air dispersion model will consider the effects of terrain and buildings (as appropriate to the location of the power works), together with the most recent available meteorological data covering a consecutive five year period in accordance with current EA guidance²⁹. In addition a stack sensitivity assessment will be undertaken to ensure that the height of the new stacks ensures adequate dispersion. The emission data used in the dispersion model will be based on the Industrial Emissions Directive (IED) Emissions Limit Values. A worst case operational profile will be developed based on the proposed changes to the Site activities and the overall assessment will be undertaken based on the LAQM TG(16)³⁰ guidance, including supplementary guidance published by Defra through its website.

The assessment will also consider potential impacts on the ecological receptors due to nitrogen and acid deposition. The deposition of nitrogen will be modelled using a deposition velocity approach, where the surface flux of pollutants is calculated by multiplying the ground level concentration by a pollutant specific deposition velocity. The velocity used in the assessment of nitrogen deposition from nitrogen dioxide will be 1.5 mm/s for short vegetation and 3 mm/s for long vegetation. Acid deposition will be calculated using the critical function tool available at the Air Pollution Information System (APIS) website³¹.

Background levels of acid and nitrogen deposition at ecological receptors will be taken from the Air Pollution Information System (APIS) website, which includes indicative critical load values and background nitrogen and acid deposition values and recommended values within nutrient nitrogen critical load ranges and background deposition values for use in air pollution impact assessments. The available local and background air quality data are considered appropriate for use in this assessment and no site specific air quality monitoring will be undertaken

7.2.5 LIMITATIONS AND ASSUMPTIONS

An atmospheric dispersion model is a tool which can be used to aid the design process, or predict a potential impact from an existing or proposed facility. It should be noted that the accuracy of the model will be limited by both the quality of the input data and the accuracy of the model itself. Even advanced dispersion models are likely to have a significant error component at distances of less than 50 metres.

Model outputs should therefore be used as a guide only, and should not be regarded as being 100% accurate under all atmospheric and operational conditions. However, dispersion models remain the most appropriate tool for determination of pollutant impact against an average short-term (percentile) or annual limit criteria.

²⁶ Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 Part 1, Air Quality (HA207/07)

²⁷ IAQM Guidance on the assessment of dust from demolition and construction, (Version 1.1 Updated June 2016)

²⁸ IAQM/Environment Protection UK (EPUK) Land Use Planning & Development Control :Planning for Air Quality, January 2017 Update

²⁹ Environment Agency Air emissions risk assessment for your environmental permit (<https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>; last updated 2 August 2016)

³⁰ Local Air Quality Management Technical Guidance LAQM TG(16) (Defra, 2016)

³¹ <http://www.apis.ac.uk/>

7.3 NOISE AND VIBRATION

7.3.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Existing residential dwellings including those in Barlow, Camblesforth, Drax and individual properties with the Study Area, including adjacent to haulage routes; and
- Existing non-residential dwellings, including schools, hospitals and places of worship in Barlow, Camblesforth and Drax.

7.3.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- All power generating equipment and associated infrastructure, such as rotating and reciprocating plant will be vibration isolated at source to manufacturers' specifications. As such, ground borne vibration due to the operation of the power plant will be imperceptible at sensitive receptor locations and will not be considered within the ES; and
- With the exception of occasional maintenance of the above ground installations, it is anticipated that there will be no operational noise and vibration effects following the construction and commissioning testing of the gas pipeline. As such noise and vibration effects from the operation of the underground gas pipeline will not be considered within the ES.

7.3.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|---|---|---|
| <i>Disturbance and nuisance to sensitive receptors from noise generated by on-site demolition and construction activities, including construction related traffic</i> | <i>Existing residential and non-residential dwellings within the Study Area</i> | <i>D/C</i> |
| <i>Disturbance and nuisance to sensitive receptors from noise generated by fixed plant and operational activities within the Proposed Scheme</i> | <i>Existing residential and non-residential dwellings within the Study Area</i> | <i>O</i> |
| <i>Disturbance and nuisance to sensitive receptors from vibration generated by on-site construction activities</i> | <i>Existing residential and non-residential dwellings within the Study Area</i> | <i>D/C</i> |
| [†] D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|---|---|---|
| <i>Disturbance and nuisance to sensitive receptors from noise generated by on-site demolition and construction activities, including construction related traffic</i> | <i>Existing residential and non-residential dwellings within the Study Area</i> | C |
| <i>Disturbance and nuisance to sensitive receptors from vibration generated by on-site construction activities</i> | <i>Existing residential and non-residential dwellings within the Study Area</i> | C |
| [†] D – Demolition, C – Construction and O – Operational | | |

7.3.4 ASSESSMENT METHODOLOGY

The following methodology for assessment is proposed:

- All noise and vibration assessment will be undertaken in line with recommendations with NPS EN-1 and EN-2, which are outline **Section 5**;
- A baseline noise survey will be undertaken to establish the background noise environment. Existing baseline information from previous reports will also be reviewed and used where appropriate. The survey will include representative sensitive receptor locations for both of the gas pipeline options and the repowering development with the site boundary. The general methodology used for measurement of environmental noise will be in accordance with BS 5228-1:2014³², BS 4142-1:2014³³, and BS 7445-1:2003³⁴;
- A prediction of the impact during construction / demolition will be undertaken following the methodology of BS 5228, and information regarding the noise output of specific items of plant will be taken from the BS 5228 database. Construction noise will be considered qualitatively in line with BS 5228:2009+A1:2014 Code of practice on noise and vibration control on construction and open sites: Part 1 Noise³⁵. Suitable assessment criteria will be derived, based on the guidance contained within BS 5228-1. The magnitude of change will be determined through a comparison of the predicted levels of construction noise with the adopted criteria. Construction vibration will be considered qualitatively utilising the historic ground-borne vibration data presented within BS 5228:2009+A1:2014 Code of practice on noise and vibration control on construction and open sites: Part 2 Vibration³⁶ and drawing on the acceptable guidance criteria also presented in this document for human exposure and building damage; and
- The noise and vibration assessment will focus on the noise sensitive receptor (NSR) locations to be agreed with SDC and NYCC. The existing baseline conditions at representative NSR locations will be determined by the baseline noise survey. The noise impacts during operation will be predicted using CadnaA noise propagation modelling software, using typical values for the proposed plant items, and considering directional and screening effects. The significance of the predicted operational impact is assessed against the semantics of BS 4142. The method set out in BS 4142 compares a rating of the noise from the specific source being assessed with the background sound climate existing at relevant NSR locations in the absence of the source operation. The difference in levels established is taken as an indication of the magnitude of the noise impact, subject to contextual considerations [from BS 4142]. The framework for the significance of noise and vibration effects will be based around the approach set out in **Section 2.3**.

³² BS 5228 'Noise and vibration control on construction and open sites'

³³ BS 4142:2014 'Methods for rating and assessing industrial and commercial sound'

³⁴ BS 7445 'Description and Measurement of Environmental Noise'

³⁵ BS 5228:2009+A1:2014 Code of practice on noise and vibration control on construction and open sites: Part 1 Noise

³⁶ BS 5228:2009+A1:2014 Code of practice on noise and vibration control on construction and open sites: Part 2 Vibration

7.3.5 LIMITATIONS AND ASSUMPTIONS

There is the potential for accuracy tolerances as a result the measurement procedure, mainly due to environmental and weather conditions. To minimise this, as far as reasonably practicable, any data measured by the long term noise meters during unsuitable weather conditions will be removed from the data set.

7.4 HISTORIC ENVIRONMENT

7.4.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Designated heritage assets including the scheduled Castle Hill moated site (SM1017455), the scheduled medieval settlement and early post-medieval garden earthworks around Barlow Hall (1018403); the scheduled Drax Augustinian Priory (1016857); the Grade I listed Church of St Peter and St Paul (1148397); and associated Grade II listed cross base and shaft (1174116) and the Grade II listed Newland Hall (1174128) and Pigeoncote at Manor Farm (1316359);
 - Known non-designated heritage assets include the outer moat of Scurff Hall (MNY10088), a Ha Ha feature associated with Scurff Hall, earthwork banks of unknown date (MNY1009) and Hawday Lane, a relic water channel of the River Aire and the suggested site of a Romano-British landing stage (MNY10103); and
 - Due to the lack or previous ground disturbance outside the curtilage of Drax Power Station, there is potential for below-ground remains associated with the Prehistoric Period onwards to survive within the footprint of the proposed pipeline options.
-

7.4.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- There is limited archaeological potential within the curtilage of Drax Power Station and large areas of the curtilage have undergone previous ground disturbance, and therefore ground disturbance caused either through demolition, re-location or construction within the curtilage is likely to have an insignificant effect on the archaeological resource; and
- There are unlikely to insignificant effects on the setting of designated heritage assets during the operation of the gas pipeline as the infrastructure will mostly be underground and will not be seen or heard.

7.4.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|---|---|---|
| <i>Loss or disturbance to known and unknown archaeological assets / remains</i> | <i>Previously unrecorded potential archaeological remains</i> | C |
| <i>Changes to the setting of designated and non-designated heritage assets.</i> | <i>The scheduled Castle Hill moated site (SM1017455), the scheduled medieval settlement and early post-medieval garden earthworks around Barlow Hall (1018403); the scheduled Drax Augustinian Priory (1016857); the Grade I listed Church of St Peter and St Paul (1148397); and associated Grade II listed cross base and shaft (1174116), the Grade II listed Newland Hall (1174128) and Pigeoncote at Manor Farm (1316359) and non-designated heritage assets</i> | C / O |
| [†] D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|---|---|---|
| <i>Loss or disturbance to known and unknown archaeological assets / remains</i> | <i>Known and unknown archaeological assets / remains from all periods</i> | C |
| [†] D – Demolition, C – Construction and O – Operational | | |

7.4.4 ASSESSMENT METHODOLOGY

The following methodology for assessment is proposed:

- Production of a desk-based assessment (DBA) in accordance with Standards and Guidance for Historic Environment Desk-based Assessment³⁷. The DBA will include a narrative of the historical and archaeological context of the Site and immediate environ within a 300 m study area. The DBA will include a site visit, which will be undertaken for the purposes of identifying any previously unrecorded archaeological assets, and for assessing the effect of the Proposed Scheme on the settings of designated assets. The DBA will present the significance of assets on which there is a predicted impact from the Proposed Scheme using the prescribed NPPF values (aesthetic, archaeological, architectural and historical);
- Loss or disturbance of known and unknown archaeology assets / remains will be considered qualitatively in line with the principles set out in DMRB³⁸ and NPPF³⁹, based on the combination of the potential value

³⁷ Chartered Institute for Archaeologists (CIfA 2014) Standards and Guidance for Desk-based Assessment.

³⁸ Highways England (2007) DMRB Volume 11 Section 3 Part 2 Cultural Heritage

³⁹ Department of Communities and Local Government (DCLG) (2012) National Planning Policy Framework (NPPF), Paragraphs 133 and 134

of any assets identified and the magnitude of harm associated with the demolition and construction phase of the Proposed Scheme;

- Consideration of changes in fabric of non-designated heritage assets will be undertaken qualitatively using the principles outlined in the DMRB³⁸ and based on the value of the assets evaluated against the likely magnitude of harm due to the Proposed Scheme; and
- The qualitative evaluation of potential effects upon the setting of designated and non-designated heritage assets will be undertaken in accordance with Historic England's The Setting of Heritage Assets⁴⁰ and the requirements set out by the NPPF⁴¹.

7.4.5 LIMITATION AND ASSUMPTIONS

As indicated within **Section 2.7**, iterative scoping will be undertaken following receipt of baseline information (i.e. DBA), the results of which will be included within the ES.

7.5 BIODIVERSITY

7.5.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified having regard to CIEEM Guidelines⁴² and will be considered within the ES:

- International and nationally designated ecological sites within 10 km and 5 km (respectively) of the Site;
- Locally important designated nature conservation sites within 5 km of the Site;
- Priority habitats within 2km of the Site; and
- Protected and notable species within the 100m of the Site.

A listed of sensitive receptors is given in **Table 4.4**.

7.5.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered in detail within the ES:

- Loss or disturbance of common and widespread habitats of negligible nature conservation importance
- Temporary disturbance of common and widespread species of negligible nature conservation importance
- Construction phase air quality impacts on statutory designated sites will be assessed as part of ES **Chapter 8 – Air Quality**. At this time it is assumed that construction-phase works are unlikely to generate significant air quality impacts in excess of 2 km from the Site and there are no statutory designated sites within such radius.

⁴⁰ Historic England (2015) The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning, 3

⁴¹ DCLG (2012) NPPF, Chapter 12 Conserving and Enhancing the Historic Environment.

⁴² CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester

7.5.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|---|---|
| <i>Alteration or degradation of habitats within designated sites as a result of emissions to air and accidental release of hazardous materials</i> | <i>Designated Sites (international, national and local)</i> | <i>D/C/O</i> |
| <i>Permanent or temporary removal or disturbance of habitats within and adjacent to the Proposed Scheme leading to destruction or damage</i> | <i>Priority Habitats or habitats otherwise of ecological importance</i> | <i>D/C/O</i> |
| <i>Loss and/or disturbance of protected species and their habitats due to demolition and construction activities, including construction traffic</i> | <i>Protected and/or otherwise notable species</i> | <i>D/C</i> |
| <i>Loss and/or disturbance of protected species and their habitats due to operation of the Proposed Scheme</i> | <i>Protected and/or otherwise notable species</i> | <i>O</i> |
| [†] D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|---|---|
| <i>Alteration or degradation of habitats within designated sites as a result of emissions to air and accidental release of hazardous materials</i> | <i>Designated Sites (international, national and local)</i> | <i>D/C</i> |
| <i>Permanent or temporary removal or disturbance of habitats within and adjacent to the Proposed Scheme leading to destruction or damage</i> | <i>Priority Habitats or habitats otherwise of ecological importance</i> | <i>D/C</i> |
| <i>Loss and/or disturbance of protected species and their habitats due to demolition and construction activities, including construction traffic</i> | <i>Protected and/or otherwise notable species</i> | <i>D/C</i> |
| [†] D – Demolition, C – Construction and O – Operational | | |

7.5.4 ASSESSMENT METHODOLOGY

A Preliminary Ecological Appraisal (PEA), supported by a desk study and extended Phase 1 habitat survey, is being produced. This is being produced with regards to best practice CIEEM guidance⁴³ and will be finalised following completion of the extended Phase 1 habitat survey (once full land access is available).

Given the potential for the habitats within the Site to support a number of protected species, additional targeted protected species surveys will be required prior to any assessment of effects as part of the ES. Dependent on final Scheme and which route is chosen for the Pipeline Works, this may include surveys for the following:

- Bats (foraging and commuting activity and roost assessment surveys);
- Badgers;
- Otter;
- Water vole;
- Breeding birds; and
- Amphibians.

Any additional survey works will be completed with regard to relevant standard practice and guidance, which will be outlined within the relevant survey reports. It is intended that the survey results and reports will be appended to the ES, to inform the assessment.

In addition, screening exercise to assess the potential for Likely Significant Effects (LSE) on internationally designated sites is considered necessary. This will be carried out in accordance with the requirements of the Conservation of Habitats and Species Regulations (2010, as amended) and NSIP Advice Note 10⁴⁴. The findings of this will be reported concurrently with the ES (**Section 4.9**). The findings and assessments will be used to inform the assessment within the ES where relevant.

The ecological impact assessment (EclA) will be carried out in accordance with relevant legislation, planning policy and guidance, including the CIEEM Guidelines for EclA, as identified above. In accordance with the CIEEM EclA Guidelines (2016), a comprehensive assessment will be carried out that collates relevant baseline information in order to predict the effects of the Proposed Scheme on important ecological features. A significant effect is defined as an effect that could have an impact upon the integrity or conservation status of a designated site, habitat/eco-system or species population where these are defined as important ecological features. The relative importance of important ecological features will be valued against a geographic frame of reference in accordance with the CIEEM Guidelines for EclA¹.

The assessment will assess the potential effects arising from the demolition, construction and operation of the Proposed Scheme on important ecological features, both with and without consideration of assumed mitigation measures.

7.5.5 LIMITATIONS AND ASSUMPTIONS

Requirements for species specific surveys will be determined completion of the PEA and confirmation of Scheme design. At this stage it is not fully clear which surveys will be deemed necessary and required to inform the assessment within the ES. Previous ecological survey results will also be used to supplement the results of any further ecological surveys carried out. The progress of ecological surveys and any measures to address potential data deficiencies at the time of the DCO application submission will also be reviewed with NE and the LPA ecologist during the planned consultation exercise. If necessary, measures to address any data deficiencies are likely to include a combination of Scheme design amendments, inclusion of embedded / precautionary mitigation measures, and the continuation of ecological surveys beyond the DCO submission to provide additional information during the Examination process.

⁴³ Chartered Institute for Ecology and Environmental management (2008). Guidelines for Preliminary Ecological Appraisal.

⁴⁴ The Planning Inspectorate (2016). Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects.

7.6 LANDSCAPE AND VISUAL

7.6.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- National and local landscape character areas and types, including Levels Farmland LCT and River Floodplain LCT, and features within the Study Area;
- Residential properties and users of long distance recreational trails, PRoW and road network within the Study Area; and
- Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to the appreciation or experience with the Study Area.

7.6.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- Aside from the siting of a PTF, MOC facility and PRMS, which could generate significant effects, land associated with the proposed gas supply pipeline which would cross large open fields of intensive agriculture would be reinstated and thus returned to its previous use. There would be no permanent visible sign of the works beyond pipeline location markers at field boundaries and probably the loss of a small number of individual hedgerow trees. As such changes to landscape character and visual amenity associated with the operation of the gas supply pipeline would not be considered with the ES.
- The assessment of effects on designed landscapes and the setting of cultural heritage assets will be addressed within **Chapter 10 – Cultural Heritage**.

7.6.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|---|---|
| <i>Changes to landscape character within and surrounding the Study Area due to on-site demolition and construction activities and plant</i> | <i>National and local landscape character areas and types, including Levels Farmland LCT and River Floodplain LCT, and features within the Study Area.</i> | D/C |
| <i>Changes to landscape character within and surrounding the Study Area due to new built form and landscaping</i> | <i>National and local landscape character areas and types, including Levels Farmland LCT and River Floodplain LCT, and features within the Study Area.</i> | O |
| <i>Changes in existing visual amenity of surrounding sensitive receptors due to on-site demolition and construction activities and plant</i> | <i>Residential properties and users of long distance recreational trails, PRoW and road network within the Study Area; and</i> <i>Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to the appreciation or experience with the Study Area.</i> | D/C |

| | | |
|--|---|---|
| <i>Changes in existing visual amenity of surrounding sensitive receptors due to new built form and landscaping</i> | <i>Residential properties and users of long distance recreational trails, PRow and road network within the Study Area; and</i> <i>Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to the appreciation or experience with the Study Area.</i> | O |
|--|---|---|

[†] D – Demolition, C – Construction and O – Operational

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|---|---|
| <i>Changes to landscape character within and surrounding the Study Area due to on-site demolition and construction activities and plant</i> | <i>National and local landscape character areas and types, including Levels Farmland LCT and Fiver Floodplain LCT, and features within the Study Area.</i> | C |
| <i>Changes to landscape character within and surrounding the Study Area due to new built form and landscaping</i> | <i>National and local landscape character areas and types, including Levels Farmland LCT and River Floodplain LCT, and features within the Study Area.</i> | O |
| <i>Changes in existing visual amenity of surrounding sensitive receptors due to on-site demolition and construction activities and plant</i> | <i>Residential properties and users of long distance recreational trails, PRow and road network within the Study Area; and</i> <i>Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to the appreciation or experience with the Study Area.</i> | C |
| <i>Changes in existing visual amenity of surrounding sensitive receptors due to new built form and landscaping</i> | <i>Residential properties and users of long distance recreational trails, PRow and road network within the Study Area</i> <i>Visitors to landscape and heritage resources and other attractions where views of the surroundings are an important contributor to the appreciation or experience with the Study Area.</i> | O |

[†] D – Demolition, C – Construction and O – Operational

7.6.4 ASSESSMENT METHODOLOGY

The following methodology for assessment is proposed:

- The assessment of landscape and visual effects (LVIA) would follow guidance described in ‘The Guidelines for Landscape and Visual Assessment’ (GLVIA) published by the Landscape Institute (LI) and the Institute of Environmental Management and Assessment (IEMA), 3rd Edition (2013). Additionally, guidance in ‘An Approach to Landscape Character Assessment’, Natural England (2014) would be followed. Reference would also be made to relevant local planning policy documents, and regional and local guidance including landscape character assessments as well as aerial photographs and OS data;
- Baseline information gathered will inform the extent of the study area for both landscape character and visual amenity. A Zone of Theoretical Visibility (ZTV) will be produced by computer modelling, based on the Ordnance Survey digital terrain model (DTM) or the Environment Agency LIDAR digital surface model. The extent of the study area for both landscape character and visual amenity and selection of representative viewpoints will be informed by data referred to above and in consultation with NYCC, SDC and other relevant bodies. The nature of visual and landscape receptors and the likely effects of the Proposed Scheme would be verified in the field through site visits, and a Zone of Visual Influence defined. In consultation with NYC and SDC, and based on field verified viewpoints the necessity for photomontages from agreed viewpoints will be determined. All photographs will be produced in line with Landscape Institute Advice Note 01/11 (2011); ‘Photography and Photomontage in Landscape and Visual Impact Assessment’. In terms of landscape character, baseline data would be used to identify which key landscape receptors should be verified in the field and which should be assessed against the effects of the Proposed Scheme;
- Landscape effects are direct physical changes to the landscape caused by the Proposed Scheme, or indirect changes to landscape character and how the landscape is perceived following the Proposed Scheme. Landscape impact assessment considers these effects both in terms of the individual components of the landscape and on the structure, coherence and character of the landscape as a whole;
- Visual effects are changes in the composition and character of views available in the area affected by the Proposed Scheme. Visual impact assessment considers the response of the people who experience these effects, who may be living or working in the area, enjoying recreational activities or simply passing through. The assessment considers the overall consequence of the effects on the visual amenity - the pleasantness of the view or outlook – that the people affected enjoy; and
- The significance of effect would be determined by combining the assessed sensitivity of the landscape or visual receptor with the anticipated scale, duration and incongruity of impacts from the Proposed Scheme. Effects would be assessed for the construction phase, operational phase (year 1 or when changes are most obvious), and 15 years after commencement of operations when any mitigation planting if required would be considered to have matured to maximum effectiveness. Landscape mitigation proposals would identify potential effects that could reasonably be mitigated through landscape design, and an assessment undertaken of the predicted significant of residual effects with reference to policy compliance.

7.6.5 LIMITATIONS AND ASSUMPTIONS

The assessment of the views from private properties will be based on representative viewpoints based in publically accessible locations and professional judgement. A residential amenity survey is not proposed. Photography used to inform the assessment will be taken during the summer and professional judgement will determine the need for winter photography to appropriately assess potential effects.

The visual envelope for the Proposed Scheme will be prepared on the basis of desk based review and production of a ZVI (using bare earth data only) followed by survey work and the application of professional judgement. It is considered that qualitative analysis of existing viewpoints is sufficient to inform the assessment. The necessity for photomontages will be determined through discussions with relevant LPAs.

7.7 GROUND CONDITIONS AND CONTAMINATION

7.7.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Agricultural land within the study area to the north and south of Drax power station;
- Operatives at power station and land users near development;
- Sherwood Sandstone Group (Principal aquifer); Brighton Sand Formation, Alluvium and Warp (Secondary A aquifers); River Ouse (a Main River as defined by the Environment Agency); and
- Buildings, services and foundations.

There are no geological SSSIs and no known Regionally Important Geological Sites within the study area. These statutory attributes will therefore not be considered when reviewing the sensitivity of geological receptors at the site.

7.7.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- Adverse effects to the health of construction workers associated with exposure to contaminative substances potentially present in the ground (e.g. from historical land use). It is assumed that construction will be undertaken in accordance with all relevant legislation, guidance and best practice published by HSE and CIRIA^{45,46}. It is therefore assumed that protective measures such as dust suppression and appropriate PPE will be in place to prevent the exposure of construction workers to contaminants.
- Sediment loading of nearby surface waters following soil erosion associated with ground works. Contamination of nearby surface waters if soils are affected by contamination. It is assumed that a CEMP will be in place to manage the erosion and transport of soils potentially affected by contamination (e.g. through requirements to protect vegetation and for the provision of hardstanding for construction plant).
- Adverse effects to any sensitive receptor following the introduction of contaminative substances during construction (e.g. due to inappropriate storage of fuel). It is assumed that a CEMP will be in place to control storage and use of potentially contaminative substances (including, e.g. requirements for the provision of bunds and spill kits).
- Adverse effects to the built environment from the potential presence of aggressive chemical agents in the ground which may be destructive to concrete (e.g. foundations). It is assumed that a ground investigation will generate the necessary data to evaluate potential risks from aggressive chemical agents and that suitable construction materials will be selected for use at the detailed design stage.
- Physical damage to soil (e.g. sealing and compaction) with potential secondary impacts to surface water runoff. It is assumed that demolition and construction works will be carried out in accordance with Defra's Construction Code of Practice⁴⁷ and that a Materials Management Plan (forming part of the CEMP) will be in place to prevent physical damage to soil.
- Adverse effects to any sensitive receptor associated with the demolition of existing infrastructure (at the construction phase) resulting in contaminant release. It is assumed that a CEMP will be in place and include procedures for the identification and mitigation of contaminant risks associated with the demolition of existing infrastructure.
- Adverse effects to any sensitive receptor following the introduction of contaminative substances during operation of the power station and pipeline (e.g. due to the release of oils from the new transformers). The operation of Drax power station will be in accordance with pollution prevention industry guidance and controls in relevant permits issued by the Environment Agency.

⁴⁵ Protection of Workers and the General Public during the Development of Contaminated Land, HSE, 1991.

⁴⁶ A Guide to Safe Working on Contaminated Sites, R132, CIRIA, 1996.

⁴⁷ Construction Code of Practice for the Sustainable Use of Soil on Construction Sites. Defra, 2009.

7.7.3 LIKELY SIGNIFICANT EFFECTS

The assessment will also consider the potential for developmental constraints relating designated sites and existing land contamination, including potential aggressive chemical agents in the ground which are destructive to concrete.

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|--|---|
| <i>Creation of new migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. piling, drilling and excavation).</i> | <i>Sherwood Sandstone Group (Principal aquifer); Brighton Sand Formation, Alluvium and Warp (Secondary A aquifers).</i> | C |
| <i>Presence of migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. piling, drilling and excavation).</i> | <i>Controlled waters receptors; human health receptors (if groundwater or surface water abstractions are present within the theoretical sphere of influence of the project); the built environment (including foundations are water supply).</i> | O |
| [†] D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|--|---|
| <i>Creation of new migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. excavation).</i> | <i>Sherwood Sandstone Group (Principal aquifer); Brighton Sand Formation, Alluvium and Warp (Secondary A aquifers).</i> | C |
| <i>Presence of migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. piling, drilling and excavation).</i> | <i>Controlled waters receptors; human health receptors (if groundwater or surface water abstractions are present within the theoretical sphere of influence of the project); the built environment (including foundations are water supply).</i> | O |
| [†] D – Demolition, C – Construction and O – Operational | | |

7.7.4 ASSESSMENT METHODOLOGY

The following methodology for assessment is proposed:

- A Phase 1 Preliminary Risk Assessment (PRA) will be undertaken to establish baseline conditions within the study area. The PRA will include a desk-based review of all relevant information including historical mapping and any available historical ground investigation or monitoring data (including the limited analytical data available from the groundwater abstraction borehole located within the study area). If necessary the PRA will include a walkover survey.

- The information from the PRA will be used to develop a preliminary Conceptual Site Model identifying potentially significant contaminant linkages. Associated risks will be evaluated in accordance with CIRIA C55248. The PRA will consider risks to human health receptors, controlled waters receptors and the built environment; and will identify any requirements for further ground investigation.
- The PRA will form part of a wider 'Ground Conditions and Contamination' chapter which will be completed in accordance with the Design Manual for Roads and Bridges (DMRB)^{49,50}. The assessment will consider land take and the protection of BMV agricultural land (as a proxy for soil quality) in accordance with the objectives of the NPPF51. The assessment will identify potentially significant effects and recommend appropriate and proportional mitigatory measures.
- The conclusions of the Ground Conditions and Contamination will provide the necessary information to evaluate and mitigate potentially significant environmental effects associated with the power station and pipeline works, aid selection of a pipeline route, and identify potential design constraints thereby informing detailed design and the Environmental Statement.

7.7.5 LIMITATIONS AND ASSUMPTIONS

All information used to inform the determination of potentially significant effects and sensitive receptors is based on publically available information and has been reviewed at a large-scale and therefore some inaccuracies may exist. A robust, site-specific environmental datasheet has not been reviewed at this stage.

7.8 WATER RESOURCE, QUALITY AND HYDROLOGY

7.8.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Carr Dyke, Willow Road Drain, Dickon Field Drain and other ordinary watercourses and water features within the Study Area;
 - The River Ouse;
 - The Sherwood Sandstone Aquifer underneath the Proposed Scheme that is designated as a SPZ,
 - The Humber Estuary SSSI/SPA/SAC/Ramsar; and
 - Residential properties, agricultural land, the existing power station and the proposed power station that could be affected by increased flood risk.
-

7.8.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- Surface water runoff from the operational pipeline will not be assessed as the pipeline will be buried underground with existing ground surface reinstated. The pipeline is therefore not considered to change the rate, volume or quality of surface water runoff that would impact flood risk, groundwater quality or surface water quality.
- Changes to fluvial and tidal flood risk during the operation of the pipeline as the existing ground surface will be reinstated to current levels and therefore the fluvial and tidal flood risk will not change from the current status.

⁴⁸ Contaminated Land Risk Assessment: A Guide to Good Practice. CIRIA C552. CIRIA, 2001.

⁴⁹ DMRB Volume 11 Section 2 Part 5: Assessment and Management of Environmental Effects. Highways Agency, 2008.

⁵⁰ DMRB Volume 11 Section 3 Part 11: Geology and Soils. Highways Agency, 1993.

⁵¹ National Planning Policy Framework. Department for Communities and Local Government, 2012.

7.8.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES:

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|---|---|
| <i>Increased sedimentation caused by surface water runoff from areas of bare earth, construction materials such as aggregate and stockpiles of topsoil</i> | <i>Watercourses, field drains and other surface water features identified within the study area</i> | D/C |
| <i>Increased pollution risks from spillage of fuels and other harmful substances that may migrate to local surface water and groundwater receptors</i> | <i>Watercourses, field drains, other surface water features and groundwater features identified within the study area</i> | D/C |
| <i>Disturbance to hydromorphology and sedimentation of watercourses and water features as a result of sediment deposition from construction site traffic</i> | <i>Watercourses and surface water features in the study area, and features receiving runoff discharged through the site drainage system</i> | D/C |
| <i>Increased pollution risks associated with increased operational traffic</i> | <i>Watercourses, field drains, other surface water features and groundwater features identified within the study area</i> | O |
| <i>Increased flood risk associated with an increase in the rate and volume of surface water runoff from an increase in impermeable areas</i> | <i>Residential properties, agricultural land and the power station</i> | C/O |
| <i>Flood risk to the site and users of the site from fluvial, tidal, reservoirs and surface water sources</i> | <i>People and property at the power station site</i> | D/C/O |
| <i>Potential loss of fluvial floodplain storage if temporary works or the proposed scheme are located in Flood Zone 3</i> | <i>Residential properties and agricultural land</i> | D/C/O |
| [†] D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES:

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--|--|---|
| <i>Increased sedimentation caused by surface water runoff from areas of bare earth, construction materials such as aggregate, stockpiles of topsoil, and works in water features</i> | <i>Watercourses, field drains and other surface water features identified within the study area, as well as the River Ouse depending on the proximity of the works to the main river</i> | C |
| <i>Increased pollution risks from spillage of fuels or other harmful substances that may migrate to local surface water and groundwater receptors</i> | <i>Watercourses, field drains, other surface water features and groundwater features identified within the study area</i> | C |
| <i>Impacts to the hydromorphological, chemical and ecological quality of the watercourses through modifications of the watercourses, temporary diversions, and construction close to water features.</i> | <i>Watercourses, field drains and other surface water features identified within the study area</i> | C/O |
| <i>Impacts to catchment hydrology caused by the introduction of a barrier to subsurface water flow within the superficial deposits and the aquifer due to the pipeline</i> | <i>Watercourses identified within the study area reliant on base flow</i> | C/O |
| <i>Potential deterioration of WFD status of groundwater resources</i> | <i>Groundwater within the Principal Aquifer</i> | C |
| <i>Increased flood risk associated with temporary works within areas of fluvial flood storage</i> | <i>Residential properties and agricultural land in close proximity to the site</i> | C |
| [†] D – Demolition, C – Construction and O – Operational | | |

7.8.4 ASSESSMENT METHODOLOGY

The assessment will be undertaken following the principles of the Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3, Part 10 (HD 45/09) as this provides a good basis for assessing effects of schemes on the water environment.

The assessment will be informed by a desk study using available information, such as data on flood defences, a review of the Envirocheck Report prepared for an adjacent site in 2014, literature review, site walkover, consultation with the relevant authorities and Flood Risk Assessment (FRA) to be prepared in support of the planning application.

The study will comprise a qualitative assessment of the potential effects of the project on the water environment. The aspects of the water environment that will be considered within this section include the ecological, chemical and hydromorphological quality of the surface water features, flood risk and groundwater quality in so far that groundwater may be affected by surface-borne pollutants.

Potential impacts to groundwater associated with impacts to groundwater quantity, groundwater flows and the release of contaminants contained in the ground will be assessed in the Ground Conditions chapter. Similarly, potential impacts to ecology, including sensitive and/or important aquatic species and habitats, will be assessed in the Biodiversity chapter.

The study area will encompass surface water features up to a minimum of 0.5 km from the Proposed Scheme for the assessment of direct effects (i.e. associated with overland migration of pollutants directly to a surface feature and works within a river channel). Features that are further than 0.5 km from the Proposed Scheme but are in hydraulic connectivity with the study area will also be considered, including surface water abstractions and downstream watercourses. Based on the professional judgement of the assessor and current knowledge of the area, features located up to a distance of approximately 1 km from the Proposed Scheme will be considered.

The study area will encompass groundwater features within approximately 0.5 km of the Proposed Scheme and groundwater abstractions up to a minimum of 1 km from the Proposed Scheme. This distance is considered appropriate for the assessment of surface-borne pollutants migrating to groundwater features.

A standalone Flood Risk Assessment (FRA) will be prepared to support the EIA. It will assess potential impacts to the Proposed Scheme and to people and property elsewhere associated with flood risk from all sources of flooding.

A standalone Flood Risk Assessment (FRA) will be undertaken in accordance with NPPF to assess the potential implications of the Proposed Scheme on flood risk to people and property elsewhere, as well as assess the potential risk of flooding to the Proposed Scheme. It is proposed that the following aspects will be considered:

- Potential impacts to flood flow conveyance in watercourses crossed by the Proposed Scheme for both temporary diversions and permanent amendments to water features,
- Potential impacts to the Proposed Scheme from all sources of flooding, including fluvial, tidal, surface water, groundwater, drainage systems and artificial sources,
- Potential impacts to the Proposed Scheme from a breach or overtopping of defences,
- Potential impacts of the Proposed Scheme to people and property elsewhere, notable through a loss of fluvial floodplain storage,
- Potential impacts to fluvial and surface water flooding associated with an increase in impermeable surfacing within the power station site associated with the proposed surface water drainage system.

The FRA will consider climate change allowances in accordance with current policy. It is proposed that the assessment of future risks and the design of any required mitigation will be informed by the recommended increases for river flow in the Humber river basin district using the High Central increase of 30% for the 2080s, and using allowances for sea level rise for the East of England of 1.21m to 2115. It is proposed that the assessment of site runoff will consider an increase in rainfall intensity of 20%, with the resilience of mitigation features tested for 40%.

At this stage it is not proposed to undertake hydraulic modelling to inform the assessment of flood risk to the Proposed Scheme or elsewhere as a result of the Proposed Scheme. The need for hydraulic modelling will be discussed with the Environment Agency, North Yorkshire County Council and Selby Internal Drainage Board when more is known regarding the location and nature of the Proposed Scheme.

It is not proposed to undertake water quality sampling to inform the assessment of the impacts of the Proposed Scheme on the quality of the water features nearby.

7.8.5 LIMITATIONS AND ASSUMPTIONS

The assessment of potential effects will be based on scheme layout drawings. This is of particular importance when considering the impacts associated with the quality of surface water runoff, impacts to hydromorphology and channel hydraulics, and the potential effects of the Proposed Scheme on flood risk. Further information will be required regarding the existing and proposed drainage systems for the power station site.

7.9 WASTE

7.9.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Local waste treatment and disposal facilities; this includes waste treatment and recycling facilities, inert, non-hazardous and hazardous landfill sites.

7.9.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- Due to the nature of the Proposed Scheme, it is not envisaged that significant levels of waste will be generated during its operational life. Therefore, there will not be significant effects relating to operational waste and this will not be considered further within the ES;
- The gas pipeline does not require the demolition of any above ground features. In addition, excavated soil generated during construction of the gas pipeline is to be retained on Site and reinstated following construction of the pipeline. As such, there is not considered to be any waste generated during the construction of the gas pipeline and will not be considered within the ES; and
- It is understood that there are some areas of made ground which, prior to intrusive surveys being undertaken, have the potential for contamination. This will be assessed appropriately within **Chapter 13 - Ground Conditions and Contamination**. The extent of earthworks is considered to be limited to excavation for foundations as demolition does not include below ground works. It is assumed that all hazardous waste will be handled by and appropriate licenses contractor and in line with relevant legislation and guidance. As such, generation of hazardous waste will not be considered further within the ES.

7.9.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|--------|----------|---|
|--------|----------|---|

| | | |
|--|---|---|
| <i>Increase in waste generation from demolition and construction materials and increase in demand for local waste treatment and disposal facilities.</i> | <i>Local waste treatment and disposal facilities.</i> | C |
|--|---|---|

[†] D – Demolition, C – Construction and O – Operational

7.9.4 ASSESSMENT METHODOLOGY

An assessment of the waste streams generated during the demolition and construction phase will be undertaken using applicable construction waste arising benchmark data from the Building Research Establishment (BRE). Opportunities for reducing, reusing, segregation and recycling of waste materials, together with an assessment of any residual construction waste streams, will be identified.

Consideration will be given to the potential demand on local waste management facilities i.e. landfill sites, materials recovery facilities and other waste treatment facilities for construction waste materials generated.

The magnitude of change and sensitivity of the affected receptor/receiving environment are both assessed on a scale of high, medium, low and negligible. Determination of magnitude will reflect judgements to the scale of the predicted change and deviation from the established baseline conditions. The significance of effects reflects judgements as to the magnitude of effect against the sensitivity of the affected receptor(s).

7.9.5 LIMITATIONS AND ASSUMPTIONS

The volume and type of demolition and construction waste can only be estimated at this stage as the final methodology to be used by the Principal Contractor (and their sub-contractors) is not yet known. Waste benchmarking information obtained from the BRE is dependent on the accuracy of existing input data and thus the assessment will be based dependant on the input data.

7.10 SOCIO-ECONOMICS

7.10.1 SENSITIVE RECEPTORS

The following sensitive receptors have been identified and will be considered within the ES:

- Local economic receptors (i.e. individuals aged 16-64 within the local and regional level study areas and local businesses).
-

7.10.2 INSIGNIFICANT EFFECTS

The following insignificant effects have been identified and will not be considered within the ES:

- Whilst limited elements of the construction phase will require the employment of specialist contractors, it is assumed that the majority of direct, indirect and induced employment opportunities will be made available to employees in Selby District and the wider region (Yorkshire and the Humber). Given the majority of construction workers will reside within their current locations, there is unlikely to be a significant increase in demand for educational and healthcare services, community facilities and accommodation local to the Site due to construction workers. Therefore, this will not be considered further within the ES;
- It is assumed that site security arrangements for the Proposed Scheme will be in line with the requirements set out the Construction (Design and Management) Regulations 2015 and appropriate levels of security (personnel / CCTV) will be provided. In addition, it is anticipated that the Proposed Scheme will be designed to incorporate the 'Secured by Design' principles and liaison will be undertaken with the Police Architectural Liaison Officer at the detailed design stage. Furthermore, appropriate levels of security (personnel / CCTV) will be implemented during the operational phase. Therefore, there is unlikely to be significant effects in relation to crime and will not be considered further within the ES;
- The Proposed Scheme is commercial / industrial in nature. Once operational, there is unlikely to be a significant increase in the number of employees at the Drax Power Station. Therefore, there is unlikely to be a significant increase in the demand for community infrastructure (education and healthcare facilities) or the availability open space and this is will not considered further within the ES;
- Whilst temporary closure of the roads surrounding the Site may be required for health and safety purposes during the demolition and construction period, there is not anticipated to be a significant reduction in footfall due to the location of the Site (i.e. situated away from settlements) and continuing access across the surrounding area via other routes. As such, it is not considered that disruption to local businesses due to a reduction in footfall in the locality during construction would result from the Proposed Scheme and therefore will not be considered further within the ES;
- Given the Site is adjacent and within the existing Drax Power Station complex, there is unlikely to be a significant effect in relation to a reduction in amenity value, leisure uses or tourism in the local area (such as Drax Club). As such, this will not be considered further within the ES;
- It is assumed that all works will be undertaken in accordance with relevant health and safety legislation (e.g. the Health and Safety at Work Act 1974). Given this, there is unlikely to be any significant effects in relation to health and safety and this will not be considered further within the ES;
- During the operational phase, there is not anticipated to be a significant change in the number of employees on-site. Therefore, employment related effects during operation are not considered to be significant and will not be considered further within the ES;
- The potential for disturbance, disruption and reduction in amenity of residents during construction will be considered in **Chapter 6 - Traffic and Transport**, **Chapter 7 - Noise and Vibration**, **Chapter 8 - Air Quality** and **Chapter 9 - Landscape and Visual**, as appropriate;

- Effects in relation to health will be considered, as appropriate, within **Chapter 6 – Noise and Vibration**, **Chapter 8 – Air Quality**, **Chapter 12 – Water Quality, Resource and Hydrology** and **Chapter 13 - Ground Conditions and Contamination**;
- Effects in relation to quality of surroundings and sense of place will be considered, where appropriate within **Chapter 9 – Landscape and Visual** and **Chapter 10 – Cultural Heritage**; and
- Effects in relation to severance and delay will be addressed, where appropriate, with **Chapter 6 – Traffic and Transport**.

7.10.3 LIKELY SIGNIFICANT EFFECTS

The following effects have been identified for **power station works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|---|---|---|
| Generation of direct employment opportunities. | Local economic receptors (i.e. individuals aged 16-64 within the local and regional level study areas and local businesses) | D/C |
| Generation of indirect and induced employment opportunities associated with spending in the local economy by contractors and contracts placed with suppliers. | Local economic receptors (i.e. individuals aged 16-64 within the local and regional level study areas and local businesses) | D/C |
| Change in provision of formal recreational space | Users (employees of Drax) of existing recreational facilities (i.e. squash courts) | D |
| [†] D – Demolition, C – Construction and O – Operational | | |

The following effects have been identified for **pipeline works** and will be assessed within the ES.

| EFFECT | RECEPTOR | APPLICABLE DEVELOPMENT PHASE [†] |
|---|---|---|
| Generation of direct employment opportunities. | Local economic receptors (i.e. individuals aged 16-64 within the local and regional level study areas and local businesses) | C |
| Generation of indirect and induced employment opportunities associated with spending in the local economy by contractors and contracts placed with suppliers. | Local economic receptors (i.e. individuals aged 16-64 within the local and regional level study areas and local businesses) | C |
| [†] D – Demolition, C – Construction and O – Operational | | |

7.10.4 ASSESSMENT METHODOLOGY

The assessment of likely significant effects relating to employment opportunities during the demolition, construction and operational phases will be undertaken using Excel based analysis. All of the data sources used are publicly available.

The local level will be set as ‘Selby’ and the regional level as ‘Yorkshire and the Humber’.

At this stage it has been assumed there will be a gross number of 200 demolition jobs and 1,200 construction jobs generated by the Proposed Scheme each year. The numbers of demolition and construction jobs figure will be evaluated against the total number of employees in Industry Sector F (Construction) at the local and regional levels to determine the magnitude of change.

Generation of indirect and induced employment opportunities associated with the demolition phase will be calculated using an assumed multiplier of 1.5 on the basis that the level of multiplier effects is considered to be 'medium' as there are anticipated to be 'average linkages' associated with the Proposed Scheme. At this stage, it is not possible to isolate the Industry Sector where the impact may occur. Therefore, these figures will be evaluated against the total number of employees in all Industry Sectors within the local and regional levels to determine the magnitude of change.

The change in the provision of formal recreational space for users of the existing facilities (e.g. employees of Drax) will be undertaken qualitatively based on a review of existing levels of recreation in line with the principles set out in Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 Part 8 and the Peoples and Communities Interim Advice Note. The magnitude of change will be determined by considering the change from the existing baseline conditions identified.

7.10.5 LIMITATIONS AND ASSUMPTIONS

The assessment will rely upon secondary data within the calculations and assumptions in order to generate an understanding of the potential effects resulting from the Proposed Scheme at this stage. The assessment will seek to utilise the latest data and guidance available at the time of writing.

8 CUMULATIVE EFFECTS

8.1 INTRODUCTION

ES **Chapter 16 – Cumulative Effects** will assess the potential for significant cumulative environmental effects as a result of the Proposed Scheme.

To accord with the EIA Regulations 2017 and best practice guidance, the following types of cumulative effects will be considered within the ES:

- Effect interactions – the interaction and combination of environmental effects of the Proposed Scheme affecting the same receptor; and
- In-combination interactions – the interaction and combination of environmental effects of the Proposed Scheme with a committed project (or projects) affecting the same receptor.

It is anticipated that a qualitative cumulative effects assessment will be undertaken for the majority of environmental topics considered. However, partially quantitative assessments may be undertaken for traffic-related effects for air quality and noise.

8.2 ASSESSMENT METHODOLOGY

At present, there is no widely accepted methodology or best practice for the assessment of cumulative effects although there are a number of guidance documents available. The approach that will be adopted is based on previous experience at WSP, the types of receptors being assessed and the nature of the Proposed Scheme.

The assessment will be qualitative and based on the available information. Where information is not available, assumptions will be made based on professional judgement and clearly stated alongside any uncertainty as part of the assessment.

8.2.1 EFFECT INTERACTIONS

The assessment of effect interactions will be approached from the perspective of changes in baseline conditions at specific sensitive receptors based on information within the individual technical assessments presented within the ES. A matrix of effect interactions will be formulated for the Proposed Scheme corresponding to the construction and operational phases.

The common sensitive receptors will be identified throughout the ES and will be outlined alongside their residual effect per technical discipline. This will enable the identification of interactions and a qualitative assessment of the overall significance of the interactions of effects to the common sensitive receptors.

8.2.2 IN-COMBINATION EFFECTS

Assessment of potential in-combination effects will be undertaken using the methodology outlined below.

STEP 1 – IDENTIFICATION AND EVALUATION OF PROJECTS FOR CONSIDERATION

WSP will undertake a high level review of planning applications submitted to Selby District Council (SDC) and the Planning Inspectorate as part of the National Infrastructure Planning in the last 10 years. This will identify potential projects that could give rise to in-combination interactions with the Proposed Scheme.

Applicable projects for consideration of in-combination effects will be determined using the following criteria:

- Projects that are under construction;
- Permitted application(s) not yet implemented;
- Submitted applications(s) not yet determined;
- All refusals subject to appeal procedures not yet determined; and
- Projects identified in the relevant development plan (and emerging development plans).

Each of the projects identified will then be evaluated to determine whether the following criteria are met:

- Is there a concurrent construction or operational phase with the Proposed Scheme?
- Is the project within a relevant geographical boundary to the Proposed Scheme?
- Is there potential that the Proposed Scheme shares common sensitive receptors with the project(s)?

Results will be filtered in order to find suitable consented schemes based on the following:

- Application decision, including decision pending, approved / granted (with or without conditions), reserved matters application and decisions appealed but undetermined;
- Applications that are of a suitable equivalent (i.e. applications for residential development of 10 or more homes; industrial, commercial or retail based applications over 500sqm; and significant infrastructure based applications); and
- Common receptors, only those applications with identifiable common receptors.

All available documentation submitted in support of the projects will be reviewed to identify programmes, sensitive receptors and relevant effects to determine the projects that should be considered further.

STEP 2 – IDENTIFICATION OF COMMON RECEPTORS

In the first instance, common receptors will be evaluated in terms of their broad receptor category in accordance with Schedule 5(2) of the EIA Regulations 2017 (i.e. population and human health). The specific receptors will then be identified and evaluated, ensuring that in-combination effects are duly considered at the receptor level and a more detailed level of assessment is only undertaken where there is a common receptor and likely effect.

STEP 3 – ASSESSMENT OF IN-COMBINATION EFFECTS

Once the receptors for assessment have been defined, consideration, where possible will be given to their tolerance to effects.

The sources of construction or/and operational activities in-combination with the Proposed Scheme will then be assessed. In order for there to be a potential in-combination effect, there needs to be a potential effect on the same receptor for a similar duration within the overall programmes. There may be effects at the project level which require due consideration and management but these effects will not be reconsidered as part of the assessment.

The qualitative evaluation at the receptor level will consider the following:

- Combined magnitude of change;
- Sensitivity / value / importance of the receptor / receiving environment to change; or / and
- Duration and reversibility of effect.

Through a combination of the qualitative evaluation and mitigation presented in the ES, conclusions will be drawn as to the likelihood for significant in-combination environmental effects.

8.3 LIMITATIONS AND ASSUMPTIONS

The assessment of effects interactions resulting from the Proposed Scheme will be focused on the residual effects from the demolition, construction and operational phases following the implementation of mitigation measures. It will be assumed that identification of mitigation measures would be incorporated or adopted to mitigate negative effects resulting from the Proposed Scheme.

The assessment of in-combination effects will be based on the interpretation and assessment of data provided by third parties. In instances where no information is available the assessment will be based on assumptions, which will be detailed within the assessment.

9 SUMMARY

Table 9.1 provides a summary of all the insignificant environmental effects to be scoped out of the ES and likely significant environment effects identified that will be assessed within the ES. Key sensitive receptors identified within **Chapter 8** are illustrated on **Figure 2**.

Table 9.1 Summary of insignificant and significant environmental effects

| TECHNICAL TOPIC AREA | INSIGNIFICANT ENVIRONMENTAL EFFECTS | LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS – POWER STATION SITE | LIKELY SIGNIFICANT ENVIRONMENTAL EFFECTS – PIPELINE |
|-----------------------|--|--|--|
| Traffic and Transport | <p>The Proposed Scheme is not anticipated to result in an increase in operational workforce at Drax Power Station post construction, nor require additional trips to facilitate the operation and maintenance of the Proposed Scheme. Therefore, no additional trips are expected during operation phase. As such operational related traffic effects will not be considered as part of the ES.</p> <p>Use of the existing Jetty and waterways for the delivery of abnormal loads/plant equipment is not considered significant in highway and transportation terms.</p> | <p>Nuisance and disruption to users of the local road network caused by demolition and construction traffic (including HGVs).</p> <p>Fear and intimidation, increased traffic delay, severance and road safety impacts on residents as a result of Construction phase traffic (consisting of HGVs, Abnormal Loads, cars and LGVs) travelling to and from the Project Site.</p> | <p>Nuisance and disruption to users of the local road network and PROW caused by demolition and construction traffic (including HGVs).</p> |
| Air Quality | <p>There are no emissions to air associated with the operational phase of the gas pipeline and therefore this element will not be considered in the ES; and</p> <p>It is assumed that the Proposed Scheme will not result in additional vehicle trips to and from the Site, as detailed within Section 7.1.2. As such, changes in emissions to air due to operational traffic will not be considered within the ES.</p> | <p>Nuisance impacts from dust generated during demolition/construction and increase in emissions to air from construction mobile plant equipment</p> <p>Increase in emissions to air due to change in traffic flows during construction and demolition</p> <p>Change in emissions to air (including CO₂) from operation of new CCGT and the repowering of the existing units</p> <p>Change in emissions to air due to operational traffic</p> | <p>Nuisance impacts from dust generated during demolition/construction and increase in emissions to air from construction mobile plant equipment</p> |
| Noise and Vibration | <p>All power generating equipment and associated infrastructure, such as rotating and reciprocating plant will be vibration isolated at source to manufacturers' specifications. As such, ground borne vibration due to the operation of the power plant will be imperceptible at</p> | <p>Disturbance and nuisance to sensitive receptors from noise generated by on-site demolition and construction activities, including construction related traffic</p> <p>Disturbance and nuisance to sensitive receptors from noise generated by fixed</p> | <p>Disturbance and nuisance to sensitive receptors from noise generated by on-site demolition and construction activities, including construction related traffic</p> <p>Disturbance and nuisance to sensitive receptors from vibration generated by on-</p> |

| | | | |
|----------------------|--|---|--|
| | <p>sensitive receptor locations and will not be considered within the ES; and</p> <p>With the exception of occasional maintenance of the above ground installations, it is anticipated that there will be no operational noise and vibration effects following the construction and commissioning testing of the gas pipeline. As such noise and vibration effects from the operation of the underground gas pipeline will not be considered within the ES.</p> | <p>plant and operational activities within the Proposed Scheme</p> <p>Disturbance and nuisance to sensitive receptors from vibration generated by on-site construction activities</p> | <p>site construction activities</p> |
| Historic Environment | <p>There is limited archaeological potential within the curtilage of Drax Power Station and large areas of the curtilage have undergone previous ground disturbance, and therefore ground disturbance caused either through demolition, re-location or construction within the curtilage is likely to have an insignificant effect on the archaeological resource; and</p> <p>There are likely to insignificant effects on the setting of designated heritage assets during the operation of the gas pipeline as the infrastructure will be underground and will not be seen or heard.</p> | <p>Loss or disturbance to known and unknown archaeological assets / remains</p> <p>Changes to the setting of designated and non-designated heritage assets.</p> | <p>Loss or disturbance to known and unknown archaeological assets / remains</p> |
| Biodiversity | <p>Loss or disturbance of common and widespread habitats of negligible nature conservation importance</p> <p>Temporary disturbance of common and widespread species of negligible nature conservation importance</p> <p>Construction phase air quality impacts on statutory designated sites will be assessed as part of ES Chapter 8 – Air Quality. At this time it is assumed that construction-phase works are unlikely to generate significant air quality impacts in excess of 2 km from the Site and there are no statutory designated sites within such radius.</p> | <p>Alteration or degradation of habitats within designated sites as a result of emissions to air and accidental release of hazardous materials</p> <p>Permanent or temporary removal or disturbance of habitats within and adjacent to the Proposed Scheme leading to destruction or damage</p> <p>Loss and/or disturbance of protected species and their habitats due to demolition and construction activities, including construction traffic</p> <p>Loss and/or disturbance of protected species and their habitats due to operation of the Proposed Scheme</p> | <p>Alteration or degradation of habitats within designated sites as a result of emissions to air and accidental release of hazardous materials</p> <p>Permanent or temporary removal or disturbance of habitats within and adjacent to the Proposed Scheme leading to destruction or damage</p> <p>Loss and/or disturbance of protected species and their habitats due to demolition and construction activities, including construction traffic</p> |
| Landscape and Visual | <p>Aside from the siting of a PTF, MOC facility and</p> | <p>Changes to landscape character within and</p> | <p>Changes to landscape character within and</p> |

| | | | |
|--|---|---|---|
| | <p>PRMS, which could generate significant effects, land associated with the proposed gas supply pipeline which would cross large open fields of intensive agriculture would be reinstated and thus returned to its previous use. There would be no permanent visible sign of the works beyond pipeline location markers at field boundaries and probably the loss of a small number of individual hedgerow trees. As such changes to landscape character and visual amenity associated with the operation of the gas supply pipeline would not be considered with the ES.</p> <p>The assessment of effects on designed landscapes and the setting of cultural heritage assets will be addressed within Chapter 10 – Cultural Heritage.</p> | <p>surrounding the Study Area due to on-site demolition and construction activities and plant</p> <p>Changes to landscape character within and surrounding the Study Area due to new built form and landscaping</p> <p>Changes in existing visual amenity of surrounding sensitive receptors due to on-site demolition and construction activities and plant</p> <p>Changes in existing visual amenity of surrounding sensitive receptors due to new built form and landscaping</p> | <p>surrounding the Study Area due to on-site demolition and construction activities and plant</p> <p>Changes to landscape character within and surrounding the Study Area due to new built form and landscaping</p> <p>Changes in existing visual amenity of surrounding sensitive receptors due to on-site demolition and construction activities and plant</p> <p>Changes in existing visual amenity of surrounding sensitive receptors due to new built form and landscaping</p> |
| <p>Ground Conditions and Contamination</p> | <p>Adverse effects to the health of construction workers associated with exposure to contaminative substances potentially present in the ground (e.g. from historical land use). It is assumed that construction will be undertaken in accordance with all relevant legislation, guidance and best practice published by HSE and CIRIA. It is therefore assumed that protective measures such as dust suppression and appropriate PPE will be in place to prevent the exposure of construction workers to contaminants.</p> <p>Sediment loading of nearby surface waters following soil erosion associated with ground works. Contamination of nearby surface waters if soils are affected by contamination. It is assumed that a CEMP will be in place to manage the erosion and transport of soils potentially affected by contamination (e.g. through requirements to protect vegetation and for the provision of hardstanding for construction plant).</p> <p>Adverse effects to any sensitive receptor following the introduction of</p> | <p>Creation of new migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. piling, drilling and excavation).</p> <p>Presence of migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. piling, drilling and excavation).</p> | <p>Creation of new migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. excavation).</p> <p>Presence of migratory pathways between potentially contaminated soils and underlying aquifers as a result of ground works (e.g. piling, drilling and excavation).</p> |

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| | <p>contaminative substances during construction (e.g. due to inappropriate storage of fuel). It is assumed that a CEMP will be in place to control storage and use of potentially contaminative substances (including, e.g. requirements for the provision of bunds and spill kits).</p> <p>Adverse effects to the built environment from the potential presence of aggressive chemical agents in the ground which may be destructive to concrete (e.g. foundations). It is assumed that a ground investigation will generate the necessary data to evaluate potential risks from aggressive chemical agents and that suitable construction materials will be selected for use at the detailed design stage.</p> <p>Physical damage to soil (e.g. sealing and compaction) with potential secondary impacts to surface water runoff. It is assumed that demolition and construction works will be carried out in accordance with Defra's Construction Code of Practice and that a Materials Management Plan (forming part of the CEMP) will be in place to prevent physical damage to soil.</p> <p>Adverse effects to any sensitive receptor associated with the demolition of existing infrastructure (at the construction phase) resulting in contaminant release. It is assumed that a CEMP will be in place and include procedures for the identification and mitigation of contaminant risks associated with the demolition of existing infrastructure.</p> <p>Adverse effects to any sensitive receptor following the introduction of contaminative substances during operation of the power station and pipeline (e.g. due to the release of oils from the new transformers). The operation of Drax power station will be in accordance with pollution prevention industry guidance and</p> | | |
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| | controls in relevant permits issued by the Environment Agency. | | |
| Water Quality, Resource and Hydrology | <p>Surface water runoff from the operational pipeline will not be assessed as the pipeline will be buried underground with existing ground surface reinstated. The pipeline is therefore not considered to change the rate, volume or quality of surface water runoff that would impact flood risk, groundwater quality or surface water quality.</p> <p>Changes to fluvial and tidal flood risk during the operation of the pipeline as the existing ground surface will be reinstated to current levels and therefore the fluvial and tidal flood risk will not change from the current status.</p> | <p>Increased sedimentation caused by surface water runoff from areas of bare earth, construction materials such as aggregate and stockpiles of topsoil</p> <p>Increased pollution risks from spillage of fuels and other harmful substances that may migrate to local surface water and groundwater receptors</p> <p>Disturbance to hydromorphology and sedimentation of watercourses and water features as a result of sediment deposition from construction site traffic</p> <p>Increased pollution risks associated with increased operational traffic</p> <p>Increased flood risk associated with an increase in the rate and volume of surface water runoff from an increase in impermeable areas</p> <p>Flood risk to the site and users of the site from fluvial, tidal, reservoirs and surface water sources</p> <p>Potential loss of fluvial floodplain storage if temporary works or the proposed scheme are located in Flood Zone 3</p> | <p>Increased sedimentation caused by surface water runoff from areas of bare earth, construction materials such as aggregate, stockpiles of topsoil, and works in water features</p> <p>Increased pollution risks from spillage of fuels or other harmful substances that may migrate to local surface water and groundwater receptors</p> <p>Impacts to the hydromorphological, chemical and ecological quality of the watercourses through modifications of the watercourses, temporary diversions, and construction close to water features.</p> <p>Impacts to catchment hydrology caused by the introduction of a barrier to subsurface water flow within the superficial deposits and the aquifer due to the pipeline</p> <p>Potential deterioration of WFD status of groundwater resources</p> <p>Increased flood risk associated with temporary works within areas of fluvial flood storage</p> |
| Waste | <p>Due to the nature of the Proposed Scheme, it is not envisaged that significant levels of waste will be generated during its operational life. Therefore, there will not be significant effects relating to operational waste and this will not be considered further within the ES;</p> <p>The gas pipeline does not require the demolition of any above ground features. In addition, excavated soil generated during construction of the gas pipeline is to be retained on Site and reinstated following construction of the pipeline. As such, there is not considered to be any waste</p> | <p>Increase in waste generation from demolition and construction materials and increase in demand for local waste treatment and disposal facilities.</p> | |

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| | <p>generated during the construction of the gas pipeline and will not be considered within the ES; and</p> <p>It is understood that there are some areas of made ground which, prior to intrusive surveys being undertaken, have the potential for contamination. This will be assessed appropriately within Chapter 13 - Ground Conditions and Contamination. The extent of earthworks is considered to be limited to excavation for foundations as demolition does not include below ground works. It is assumed that all hazardous waste will be handled by and appropriate licenses contractor and in line with relevant legislation and guidance. As such, generation of hazardous waste will not be considered further within the ES.</p> | | |
| Socio-Economics | <p>Whilst limited elements of the construction phase will require the employment of specialist contractors, it is assumed that the majority of direct, indirect and induced employment opportunities will be made available to employees in Selby District and the wider region (Yorkshire and the Humber). Given the majority of construction workers will reside within their current locations, there is unlikely to be a significant increase in demand for educational and healthcare services, community facilities and accommodation local to the Site due to construction workers. Therefore, this will not be considered further within the ES;</p> <p>It is assumed that site security arrangements for the Proposed Scheme will be in line with the requirements set out the Construction (Design and Management) Regulations 2015 and appropriate levels of security (personnel / CCTV) will be provided. In addition, it is anticipated that the Proposed Scheme will be designed to</p> | <p>Generation of direct employment opportunities.</p> <p>Generation of indirect and induced employment opportunities associated with spending in the local economy by contractors and contracts placed with suppliers.</p> <p>Change in provision of formal recreational space</p> | <p>Generation of direct employment opportunities.</p> <p>Generation of indirect and induced employment opportunities associated with spending in the local economy by contractors and contracts placed with suppliers.</p> |

incorporate the 'Secured by Design' principles and liaison will be undertaken with the Police Architectural Liaison Officer at the detailed design stage. Furthermore, appropriate levels of security (personnel / CCTV) will be implemented during the operational phase. Therefore, there is unlikely to be significant effects in relation to crime and will not be considered further within the ES;

The Proposed Scheme is commercial / industrial in nature. Once operational, there is unlikely to be a significant increase in the number of employees at the Drax Power Station. Therefore, there is unlikely to be a significant increase in the demand for community infrastructure (education and healthcare facilities) or the availability open space and this is will not considered further within the ES;

Whilst temporary closure of the roads surrounding the Site may be required for health and safety purposes during the demolition and construction period, there is not anticipated to be a significant reduction in footfall due to the location of the Site (i.e. situated away from settlements) and continuing access across the surrounding area via other routes. As such, it is not considered that disruption to local businesses due to a reduction in footfall in the locality during construction would result from the Proposed Scheme and therefore will not be considered further within the ES;

Given the Site is adjacent and within the existing Drax Power Station complex, there is unlikely to be a significant effect in relation to a reduction in amenity value, leisure uses or tourism in the local area (such as Drax Club). As such, this will not be considered further within the ES;

It is assumed that all works

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| | <p>will be undertaken in accordance with relevant health and safety legislation (e.g. the Health and Safety at Work Act 1974). Given this, there is unlikely to be any significant effects in relation to health and safety and this will not be considered further within the ES;</p> <p>During the operational phase, there is not anticipated to be a significant change in the number of employees on-site. Therefore, employment related effects during operation are not considered to be significant and will not be considered further within the ES;</p> <p>The potential for disturbance, disruption and reduction in amenity of residents during construction will be considered in Chapter 6 - Traffic and Transport, Chapter 7 - Noise and Vibration, Chapter 8 - Air Quality and Chapter 9 - Landscape and Visual, as appropriate;</p> <p>Effects in relation to health will be considered, as appropriate, within Chapter 6 – Noise and Vibration, Chapter 8 – Air Quality, Chapter 12 – Water Quality, Resource and Hydrology and Chapter 13 - Ground Conditions and Contamination;</p> <p>Effects in relation to quality of surroundings and sense of place will be considered, where appropriate within Chapter 9 – Landscape and Visual and Chapter 10 – Cultural Heritage; and</p> <p>Effects in relation to severance and delay will be addressed, where appropriate, with Chapter 6 – Traffic and Transport.</p> | | |
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ACRONYMS

| | |
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| AA | Archaeological Areas |
| ALC | Agricultural Land Classification |
| AOD | Above Ordnance Datum |
| APIS | Air Pollution Information System |
| AQAP | Air Quality Action Plan |
| AQMA | Air Quality Management Area |
| AQS | Air Quality Strategy |
| BAT | Best Available Technology |
| BGS | British Geological Society |
| BRE | Building Research Establishment |
| BREF | Best Available Technology (BAT) Reference |
| CCGT | Combined Cycle Gas Turbines |
| CCS | Carbon Capture and Storage |
| CEMP | Construction Environmental Management Plan |
| CIBSE | Chartered Institution Building Service Engineers |
| DBA | Desk-Based Assessment |
| DCLG | Department of Communities and Local Government |
| DCO | Development Consent Order |
| DECC | Department for Energy and Climate Change |
| DMRB | Design Manual for Roads and Bridges |
| EA | Environment Agency |
| EcIA | Ecological Impact Assessment |
| EIA | Environmental Impact Assessment |
| EMP | Environmental Management Plan |
| EMR | Electricity Market Reform |
| ES | Environmental Statement |
| FRA | Flood Risk Assessment |
| GIS | Gas Insulated Switchgear |
| GLVIA | Guidelines for Landscape and Visual Assessment |
| HDD | horizontal direct drilling |
| HER | Historic Environment Record |
| HLC | Historic Landscape |
| HRA | Habitat Regulations Assessment |
| HRSG | Heat Recovery Steam Generators |
| IDB | Internal Drainage Board |
| IED | Industrial Emissions Directive |
| IEMA | Institute of Environmental Management and Assessment |
| LCPD | Large Combustion Plant Directive |
| LCT | Landscape Character Type |
| LLB | Locally Listed Buildings and Structures |
| LLCA | Local Landscape Character Area |
| LLFA | Lead Local Flood Authority |
| LNR | Local Nature Reserve |
| LSE | Likely Significant Effects |
| LVIA | Landscape and Visual Impact Assessment |

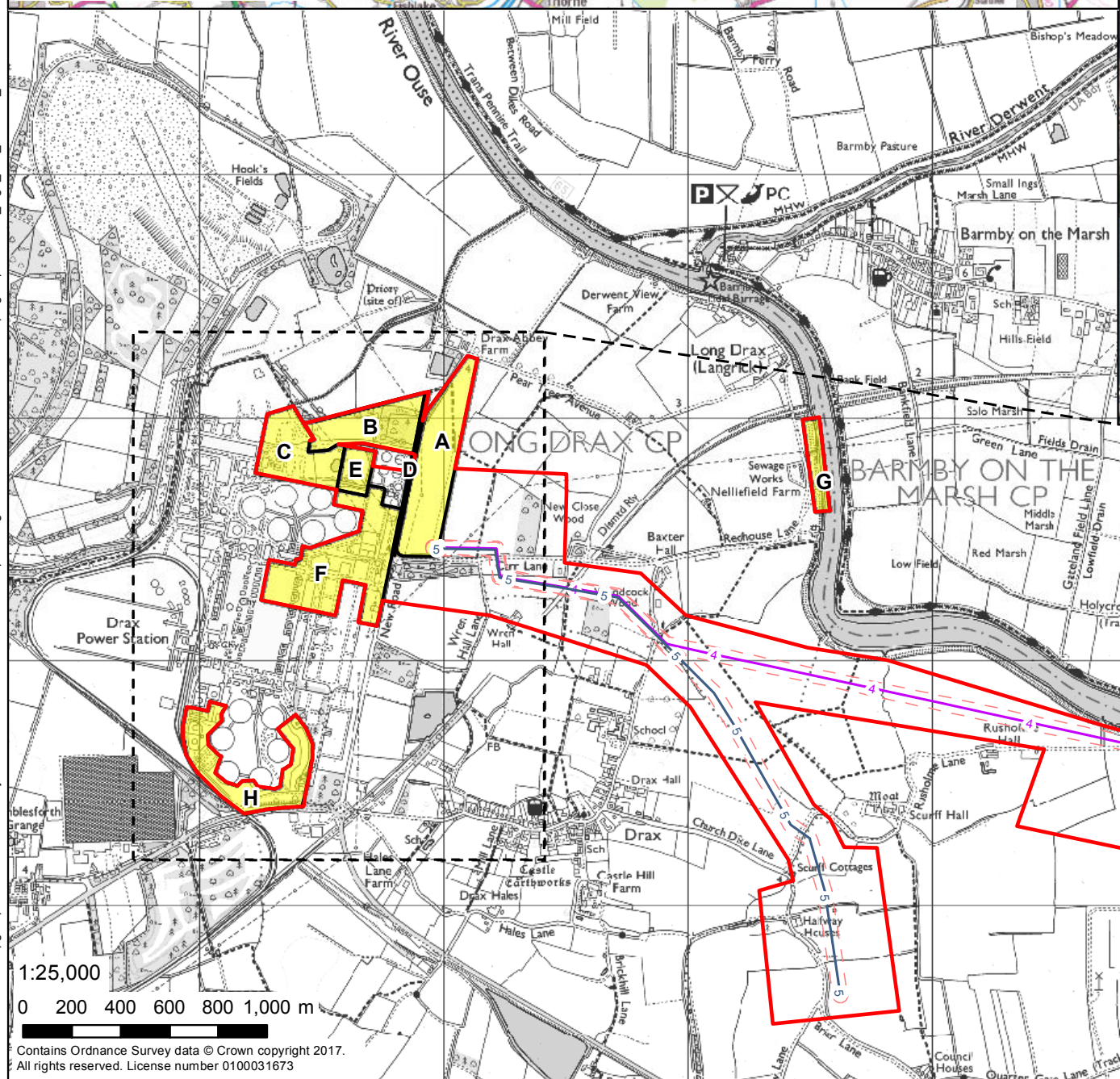
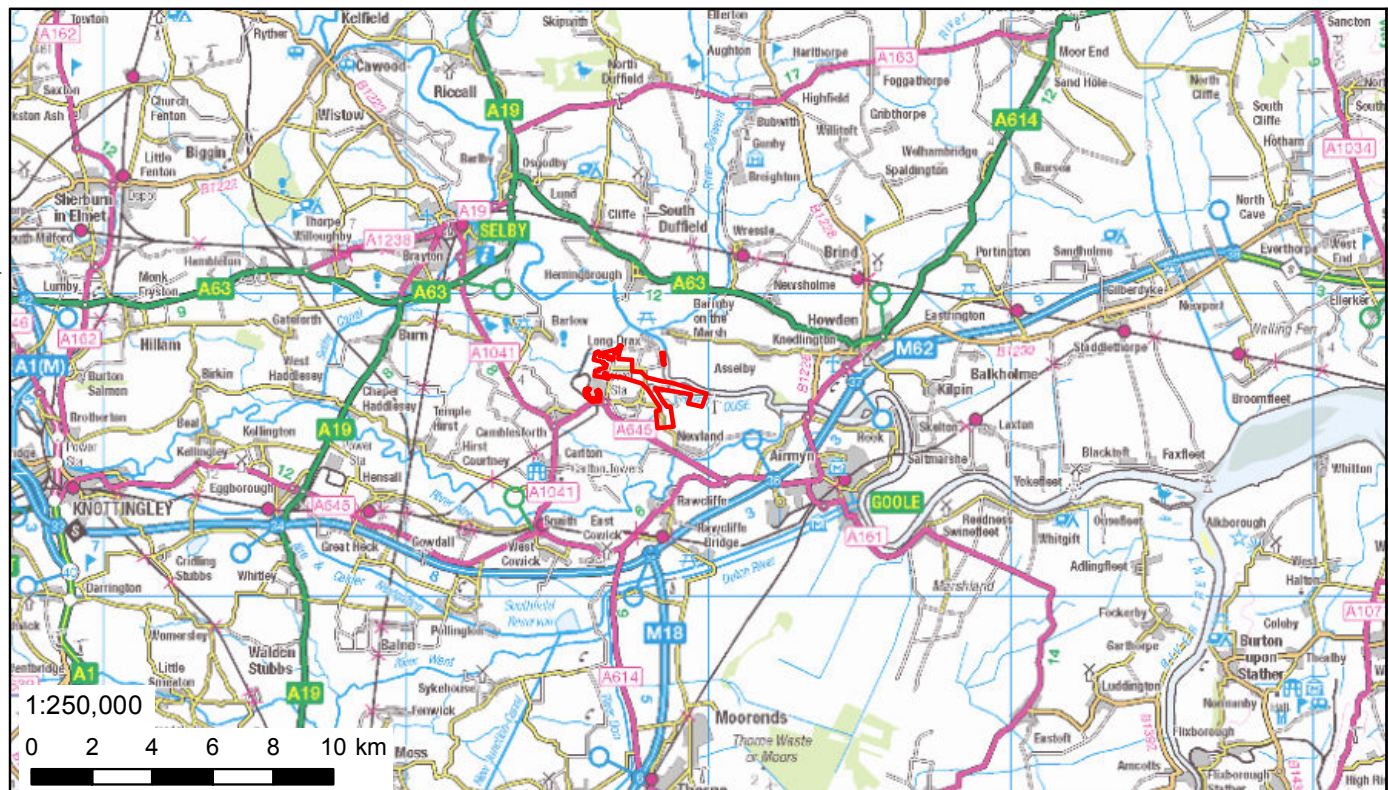
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| LWS | Local Wildlife Site |
| MOC | Minimum Offtake Connection |
| NERP | National Emission Reduction Plan |
| NPPF | National Planning Policy Framework |
| NPS | National Policy Statements |
| NSIP | Nationally Significant Infrastructure Projects |
| NSR | Noise Sensitive Receptor |
| NYCC | North Yorkshire County Council |
| OS | Ordnance Survey |
| PAH | Poly-aromatic Hydrocarbons |
| PCB | Polychlorinated Biphenyls |
| PEA | Preliminary Ecological Appraisal |
| PIG | Pipeline Inspection Gauge |
| PPG | Planning Practice Guide |
| PRA | Preliminary Risk Assessment |
| PRMS | Pressure Reduction and Metering Station |
| PRoW | Public Rights of Way |
| SAC | Special Area of Conservation |
| SDC | Selby District Council |
| SM | Scheduled Monuments |
| SMP | Soil Management Plan |
| SPA | Special Protection Area |
| SSG | Sherwood Sandstone Group |
| SSSI | Site of Special Scientific Interest |
| WFD | Water Framework Directive |
| WHS | World Heritage Sites |
| ZTV | Zone of Theoretical Visibility |



DRAX REPOWER PROJECT

APPENDIX A

FIGURES



- Key**
- Site Boundary
 - Scheme Areas
- Gas Pipeline Route Options**
- Route Option 4
 - Route Option 5
 - 30m Buffer of Gas Pipeline Routes

| Area | Current Description of Use | Intended and Potential Use |
|------|---|---|
| A | Farming land leased by Drax | Laydown, construction compound or car park. Potential CCR site. |
| B | Scrub land - potentially old asbestos site | Laydown, construction or car park. CCR laydown, construction of car park |
| C | Business Park and old wood yard | Construction offices - stores location |
| D | Roadway | Construction staff roadway bridge. Plant interface connections between Area A, F and B if required for CCR. |
| E | Scrub land | Battery storage facility, CCR pipe work run. |
| F | Light - medium stores, site contractors compounds and car parks, ash lagoon | Primary location for GTs and HRSGs for both units 5 and 6 |
| G | Drax riverside loading / unloading jetty | Loading / unloading of CCGT equipment - could require strengthening works |
| H | Mostly hard standing, recycling centre, fuel oil | Existing site contractor village and car parks, stores compound |



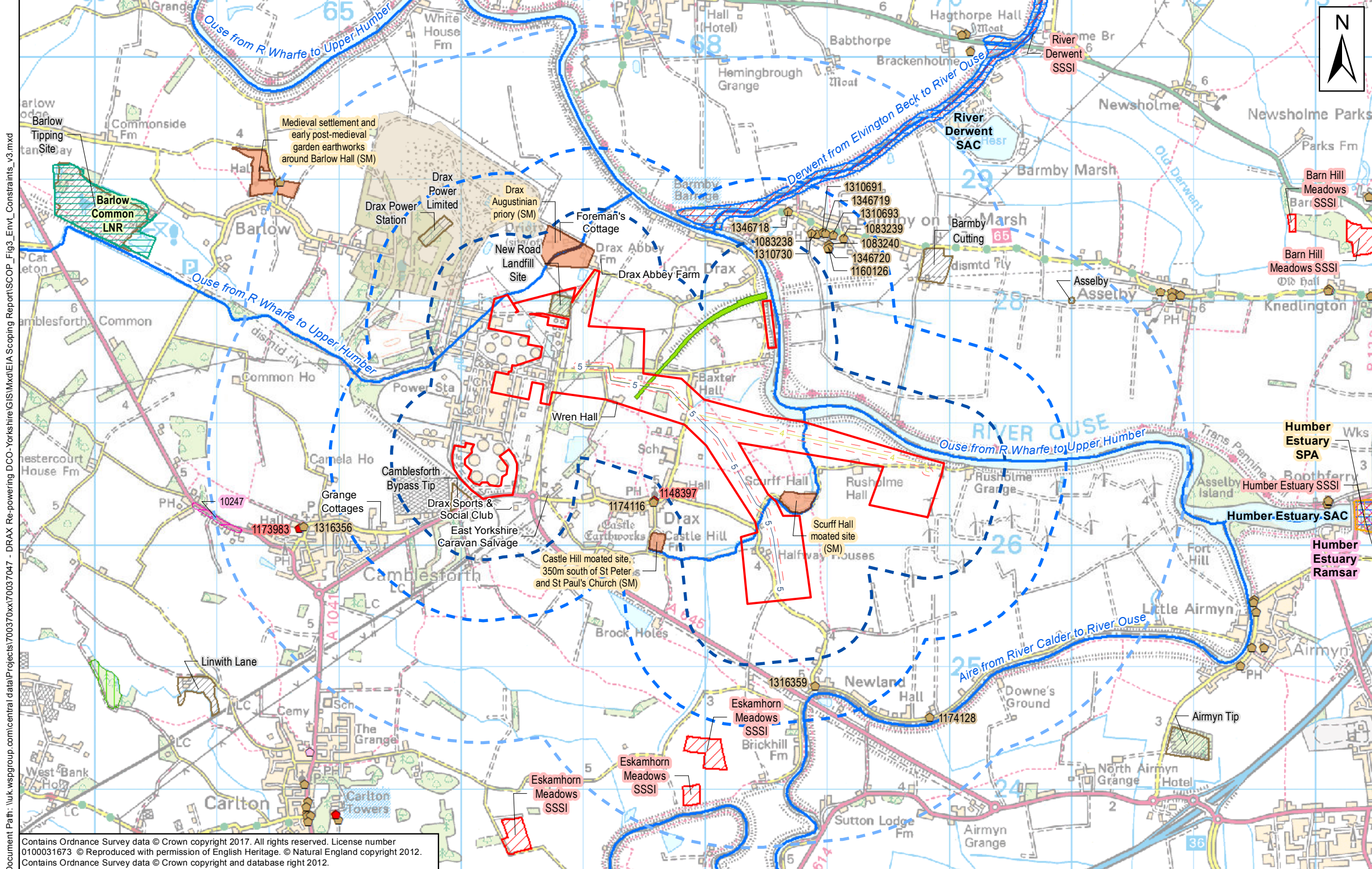
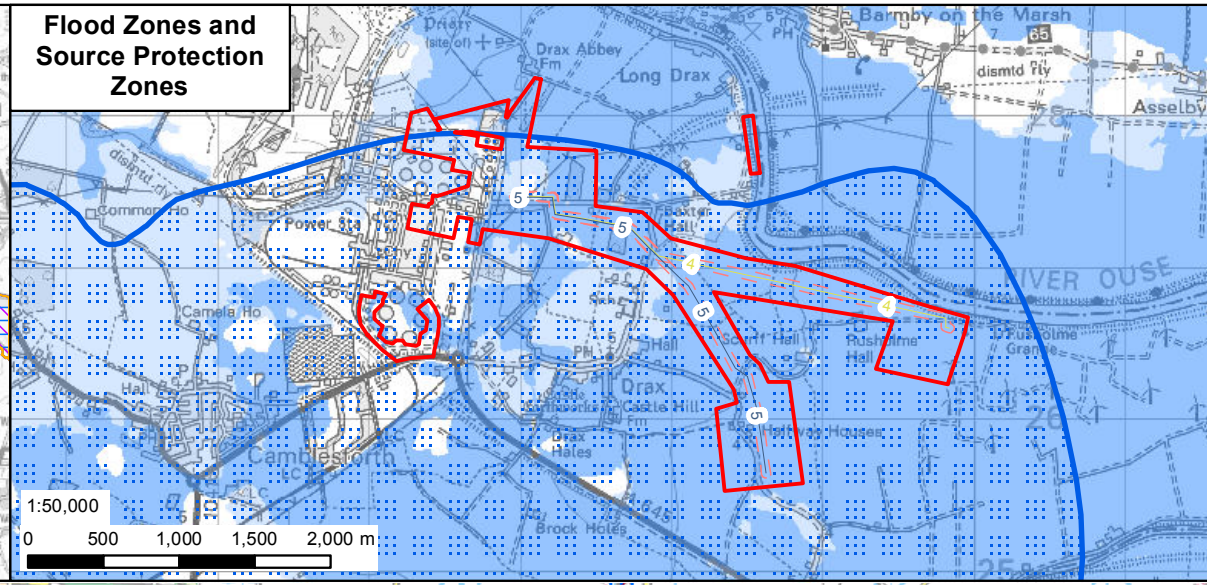
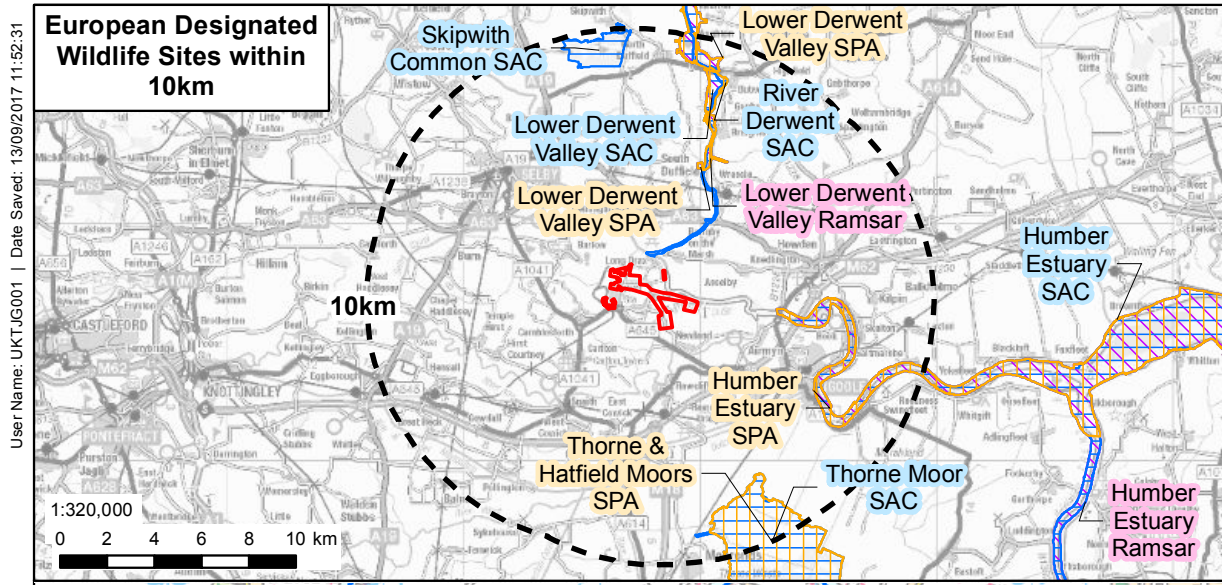
Client: DRAX POWER LTD

Project: DRAX REPOWER PROJECT

Title: SITE LOCATION

Drawing No: Figure 1
Date: 08/09/2017
Scale: see map @ A3

Drawn: TG
Checked: MB
Approved: CH



Key

- Site Boundary
- 500m Buffer
- 1km Buffer
- 2km Buffer
- 10km Buffer

Gas Pipeline Route Options

- Route Option 4
- Route Option 5
- 30m Buffer of Gas Pipeline Routes

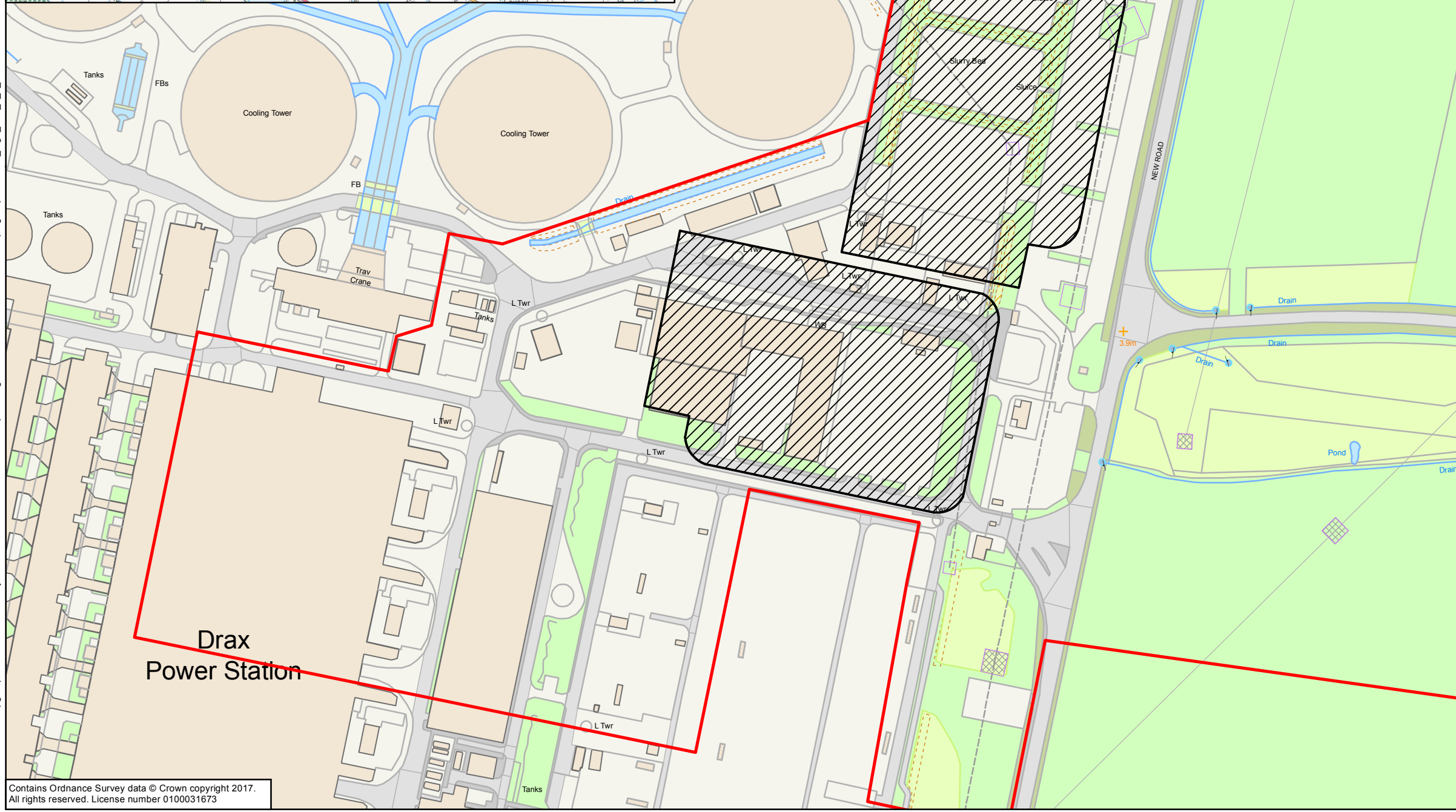
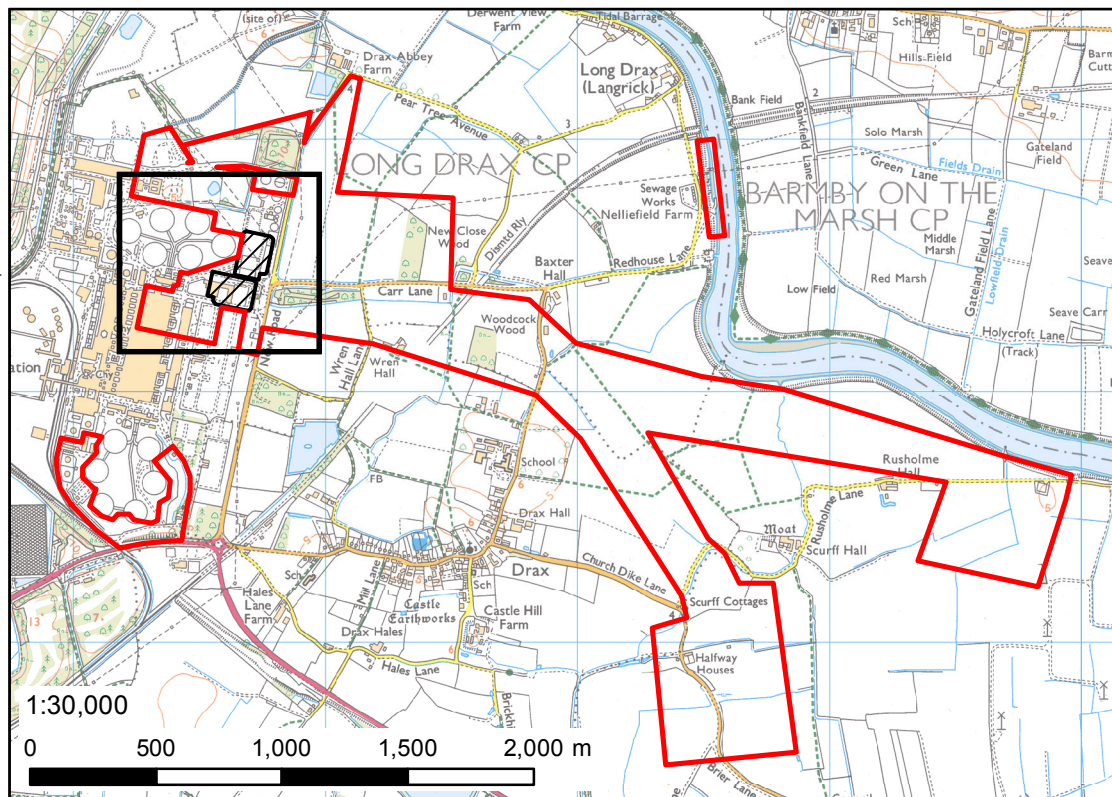
Environmental Constraints



- Grade I Listed Building
- Grade II* Listed Building
- Grade II Listed Building
- WFD Waterbody
- Site of Importance for Nature Conservation (SINC)
- Scheduled Monument (SM)
- Local Nature Reserve (LNR)
- Noise Important Area (NIA)
- Ancient Woodland
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Ramsar Site - Wetland of International Importance
- Site of Special Scientific Interest (SSSI)
- Historic Landfill
- Authorised Landfill
- Source Protection Zone III - Total Catchment
- Flood Zone 3
- Flood Zone 2

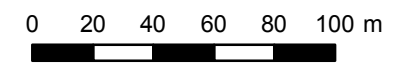
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|-------------|---------------------------|--------------|
| Client: | DRAX POWER LTD | |
| Project: | DRAX REPOWER PROJECT | |
| Title: | ENVIRONMENTAL CONSTRAINTS | |
| Drawing No: | Figure 2 | Drawn: TG |
| Date: | 12/09/2017 | Checked: MB |
| Scale: | 35,000 @ A3 | Approved: CH |



Key
 Proposed Location of Units 5 and 6
 Site Boundary



| | | |
|----------|-----------------------------------|--|
| Client: | DRAX POWER LTD | |
| Project: | DRAX REPOWERING PROJECT | |
| Title: | PROPOSED LOCATION OF UNIT 5 AND 6 | |

| | | | |
|-------------|------------|-----------|----|
| Drawing No: | Figure 3 | Drawn: | TG |
| Date: | 08/09/2017 | Checked: | MB |
| Scale: | 2,500 @ A3 | Approved: | CT |



DRAX REPOWER PROJECT

APPENDIX B

STRUCTURE OF THE ES

At this stage it is anticipated that the ES will be structured as follows:

VOLUME 1 – MAIN TEXT AND FIGURES

- Chapter 1 – Introduction
 - Chapter 2 – Description of the Study Area and Surrounds
 - Chapter 3 – Description of the Proposed Scheme
 - Chapter 4 – Consideration of Alternatives
 - Chapter 5 – Approach to EIA
 - Chapter 6 – Traffic and Transport
 - Chapter 7 – Noise and Vibration
 - Chapter 8 – Air Quality
 - Chapter 9 – Landscape and Visual
 - Chapter 10 – Cultural Heritage
 - Chapter 11 – Biodiversity
 - Chapter 12 – Water Quality, Resource and Hydrology
 - Chapter 13 – Ground Conditions and Contamination
 - Chapter 14 – Waste
 - Chapter 15 – Socio-Economics
 - Chapter 16 – Cumulative Effects
 - Chapter 17 – Summary of the ES
-

VOLUME 2 – TECHNICAL APPENDICES

VOLUME 3 – NON-TECHNICAL SUMMARY
