

The Drax Power (Generating Stations) Order

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

Environmental Statement Non-Technical Summary



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

Drax Power Limited

Drax Repower Project

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Table of Contents

1	INTRODUCTION	1-1
1.1	Overview	1-1
1.2	The Development Consent Order (DCO) Process	1-2
1.3	Environmental Impact Assessment	1-2
1.4	Consultation	1-3
2	EIA METHODOLOGY	2-4
2.1	General Impact Assessment Approach	2-4
2.2	Results of the Scoping Stage	2-5
2.3	Scheme Design, Impact Avoidance and Mitigation	2-6
3	SITE AND PROJECT DESCRIPTION	3-7
3.1	Site Location and Description	3-7
3.2	The Existing Environment Surrounding the Site	3-9
3.3	Description of the Proposed Scheme	3-9
3.4	Construction	3-16
3.5	Operation and maintenance	3-17
3.6	Decommissioning	3-18
3.7	Programme	3-18
3.8	Stages of development	3-18
3.9	Climate Vulnerability	3-19
4	CONSIDERATION OF ALTERNATIVES	4-21
5	TRAFFIC AND TRANSPORT	5-23
5.1	Introduction	5-23
5.2	Likely Stage 0 Effects	5-24
5.3	Likely Stage 1 Effects	5-24
5.4	Likely Stage 2 Effects	5-24
5.5	Likely Stage 3 Effects	5-25
5.6	Likely Decommissioning Effects	5-25
5.7	Conclusion	5-25
6	AIR QUALITY	6-26
6.1	Introduction	6-26
6.2	Likely Stage 0 Effects	6-26
6.3	Likely Stage 1 Effects	6-26
6.4	Likely Stage 2 Effects	6-27

6.5	Likely Stage 3 Effects	6-27
6.6	Likely Decommissioning Effects	6-27
6.7	Conclusion	6-28
7	NOISE AND VIBRATION	7-29
7.1	Introduction	7-29
7.2	Likely Stage 0 Effects	7-29
7.3	Likely Stage 1 Effects	7-29
7.4	Likely Stage 2 Effects	7-30
7.5	Likely Stage 3 Effects	7-30
7.6	Likely Decommissioning Effects	7-30
7.7	Conclusions	7-31
8	HISTORIC ENVIRONMENT	8-32
8.1	Introduction	8-32
8.2	Likely Stage 0 Effects	8-32
8.3	Likely Stage 1 Effects	8-32
8.4	Likely Stage 2 Effects	8-33
8.5	Likely Stage 3 Effects	8-33
8.6	Likely Decommissioning Effects	8-33
8.7	Conclusion	8-33
9	BIODIVERSITY	9-34
9.1	Introduction	9-34
9.2	Likely Stage 0 Effects	9-34
9.3	Likely Stage 1 Effects	9-34
9.4	Likely Stage 2 Effects	9-35
9.5	Likely Stage 3 Effects	9-35
9.6	Likely Decommissioning Effects	9-35
9.7	Conclusions	9-36
10	LANDSCAPE AND VISUAL	10-37
10.1	Introduction	10-37
10.2	Likely Stage 0 Effects	10-37
10.3	Likely Stage 1 Effects	10-37
10.4	Likely Stage 2 Effects	10-38
10.5	Likely Stage 3 Effects	10-38
10.6	Likely Decommissioning Effects	10-39

10.7	Conclusions	10-39
11	GROUND CONDITIONS AND CONTAMINATION	11-40
11.1	Introduction	11-40
11.2	Likely Stage 0 Effects	11-40
11.3	Likely Stage 1 Effects	11-40
11.4	Likely Stage 2 Effects	11-41
11.5	Likely Stage 3 Effects	11-41
11.6	Likely Decommissioning Effects	11-41
11.7	Conclusions	11-41
12	WATER RESOURCE, QUALITY AND HYDROLOGY	12-42
12.1	Introduction	12-42
12.2	Likely Stage 0 Effects	12-42
12.3	Likely Stage 1 Effects	12-42
12.4	Likely Stage 2 Effects	12-43
12.5	Likely Stage 3 Effects	12-43
12.6	Likely Decommissioning Effects	12-43
12.7	Conclusions	12-44
13	WASTE	13-45
13.1	Introduction	13-45
13.2	Likely Stage 0 Effects	13-45
13.3	Likely Stage 1 Effects	13-45
13.4	Likely Stage 2 Effects	13-45
13.5	Likely Stage 3 Effects	13-46
13.6	Likely Decommissioning Effects	13-46
13.7	Conclusion	13-46
14	SOCIO-ECONOMICS	14-47
14.1	Introduction	14-47
14.2	Likely Stage 0 Effects	14-47
14.3	Likely Stage 1 Effects	14-47
14.4	Likely Stage 2 Effects	14-48
14.5	Likely Stage 3 Effects	14-48
14.6	Likely Decommissioning Effects	14-49
14.7	Conclusions	14-49
15	CLIMATE CHANGE	15-50

15.1	Introduction	15-50
15.2	Likely Stage 0 Effects	15-50
15.3	Likely Stage 1 Effects	15-50
15.4	Likely Stage 2 Effects	15-50
15.5	Likely Stage 3 Effects	15-50
15.6	Likely Decommissioning Effects	15-51
15.7	Conclusions	15-51
16	MAJOR ACCIDENTS AND NATURAL DISASTERS	16-52
16.1	Introduction	16-52
16.2	Likely Stage 0 Effects	16-52
16.3	Likely Stage 1 Effects	16-52
16.4	Likely Stage 2 Effects	16-53
16.5	Likely Stage 3 Effects	16-53
16.6	Likely Decommissioning Effects	16-53
16.7	Conclusions	16-53
17	CUMULATIVE AND COMBINED EFFECTS	17-55
17.1	Introduction	17-55
17.2	Cumulative effects	17-55
17.3	Combined effects	17-58
18	SUMMARY AND CONCLUSIONS	18-59

Table of Tables

<i>Table 2-1 - Terminology for Classifying the Significance of the Effect</i>	2-4
<i>Table 3-1 - Description of the Proposed Buildings and Infrastructure</i>	3-11
<i>Table 3-2 - Description of Associated Development</i>	3-14
<i>Table 3-3 - Stages of the Proposed Scheme which have been considered in the Environmental Statement</i>	3-18

Table of Figures

<i>Figure 1 - Site Location</i>	3-7
<i>Figure 2 - Development Parcels</i>	3-8
<i>Figure 3 - Overview of the Proposed Scheme</i>	3-11
<i>Figure 4a - Key Elements of the Proposed Scheme (1)</i>	3-13
<i>Figure 4b - Key Elements of the Proposed Scheme (2)</i>	3-13
<i>Figure 5 - Shows the Proposed Heavy Goods Vehicle Route to Site</i>	5-23
<i>Figure 6 - Location of the Short List of “Other Developments” Considered for the Cumulative Assessment</i>	17-57

1 INTRODUCTION

1.1 Overview

- 1.1.1. This Non-Technical Summary of the Environmental Statement has been produced to inform the public and other stakeholders of the findings of the Environmental Impact Assessment process for the Drax Repower Project (also referred to as the Proposed Scheme).
- 1.1.2. The Applicant of the Proposed Scheme is Drax Power Limited. The Applicant owns and manages the Existing Drax Power Station Complex which is located in Selby, North Yorkshire. The Existing Drax Power Station Complex has been generating electricity since 1974 and has the capacity to meet 8% of the UK's electricity needs.
- 1.1.3. Drax is proposing to repower up to two of the six generating units at the Existing Drax Power Station Complex from coal-fired to gas generation plant(s). The term "repower" is used as existing infrastructure, such as the steam turbine and cooling towers, that are currently used for the coal fired units would be reutilised for the new gas fired generating units/stations. Each gas generating unit would (subject to technology and commercial considerations) be connected to its own battery energy storage facility. These proposals and the associated infrastructure would have a total combined capacity of up to 3,800 MW of electricity. The Proposed Scheme's objectives are to:

A. Reduce the reliance of Drax Power Station on coal as a source of power for electricity generation and replace that source with one that meets the Government's aims of creating a diverse energy mix that maintains security of supply as well as providing flexible back up for intermittent renewable energy.

B. Ensure that Drax Power Station maintains its position as one of the UK's main power generators, playing an important role in helping the UK transition to a low carbon economy through the re-utilisation of as much existing infrastructure as possible (such as cooling systems, cooling towers and steam turbines) which would otherwise be potentially redundant despite the infrastructure remaining within its operating life and capable of contributing to more efficient energy production and a lower carbon footprint (given it is already constructed).

C. Utilise as much existing operational land within the Existing Drax Power Station Complex as possible so as to maximise the use and efficiency of existing infrastructure.

D. Maximise the efficiency of Drax Power Station.

E. Increase the flexible, response generating capacity of Drax Power Station to meet increasing demand across the UK by:

a) Providing additional support services to manage the stability of the national grid, such as frequency response and inertia, to support weather-dependent renewables like wind and solar.

b) Increasing reliable large scale capacity on the system (i.e. large amount of capacity that can be called on at any time).

1.2 The Development Consent Order (DCO) Process

- 1.2.1. The Proposed Scheme constitutes a Nationally Significant Infrastructure Project under the Planning Act 2008 (as amended). The Applicant must, therefore, make an application under the Planning Act 2008 for a permission known as a Development Consent Order to construct and operate the Proposed Scheme (the Application).
- 1.2.2. The Application for a Development Consent Order has been submitted to the Secretary of State for Business, Energy and Industrial Strategy (the Secretary of State), who will appoint inspectors from the Planning Inspectorate (known as the Examining Authority) to examine the Application. The Examining Authority will make a recommendation to the Secretary of State on whether a Development Consent Order should be granted for the Proposed Scheme. The Secretary of State will make the final decision.
- 1.2.3. Further details on the Development Consent Order process and the planning policy applicable to the Proposed Scheme can be found in Chapters 1-3 of the Environmental Statement.

1.3 Environmental Impact Assessment

Environmental Impact Assessment is a process that identifies the likely significant environmental effects of a development and suggests ways that those effects that are classed as adverse can be avoided, reduced or managed. Environmental Impact Assessment is a requirement of European Union and United Kingdom law for developments that are likely to cause significant environmental effects.

The key steps of the Environmental Impact Assessment process are as follows:

<i>Screening</i>	Determining whether a development proposal needs an Environmental Impact Assessment (this step is not needed where an Environmental Impact Assessment is automatically required by law due to the scale and nature of the proposal).
<i>Scoping</i>	Determining the topics that the Environmental Impact Assessment should address in detail.
<i>Preliminary Environmental Information Report</i>	Establishing baseline data and carrying out a preliminary evaluation of potential impacts of the development proposal. Making the Preliminary Environmental Information Report publicly available in order that the public, affected landowners and statutory consultees can view it and provide feedback before the development proposal is submitted to the determining body.
<i>Environmental Statement</i>	Detailed assessment of the likely significant environmental effects for the proposed development and description of mitigation measures.
<i>Environmental Statement Submission</i>	Formally submitting the Environmental Statement to the Secretary of State (as part of the Development Consent Order application) for scrutiny by the Examining Authority, authorities and stakeholders

- 1.3.1. Under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (referred to as the EIA Regulations 2017), the Proposed Scheme is defined as the type and scale of development that automatically requires an Environmental Impact Assessment. This means the screening step of the Environmental Impact Assessment process was not needed. Accordingly, the Applicant undertook the Environmental Impact Assessment process alongside the development of the design of the Proposed Scheme. A brief summary of the key documents produced to inform the Environmental Impact Assessment process and consultation is presented below.
- 1.3.2. In September 2017, the Applicant submitted a request for a Scoping Opinion to the Secretary of State to seek an opinion on the scope and level of detail of the information to be included in the Environmental Statement as part of the Development Consent Order application. This request was accompanied by a Scoping Report which set out what should be within the scope of the Environmental Statement. A Scoping Opinion was provided to the Applicant in October 2017 by the Planning Inspectorate on behalf of the Secretary of State. The comments and recommendations contained in the Scoping Opinion have been incorporated into the Environmental Impact Assessment process.
- 1.3.3. For the purpose of consultation, the initial findings (as of January 2018) of the ongoing Environmental Impact Assessment process were reported within a Preliminary Environmental Information Report. The full details of the Environmental Impact Assessment are now reported in the Environmental Statement.
- 1.3.4. The Environmental Statement is presented in three volumes, including:
 - Volume 1: Main Report and Figures.
 - Volume 2: Appendices
 - Volume 3: Non-Technical Summary (this document).

1.4 Consultation

- 1.4.1. The Applicant is committed to ensuring that the local community, residents, those persons with an interest in the Site, local interest groups, businesses, local authorities, visitors and local highway users, have the opportunity to consider the Proposed Scheme and comment on its proposals. This includes making use of online media and scheduling public events at times that are likely to be convenient for the local community.
- 1.4.2. The Applicant has consulted with residents and businesses living and working within a 10 km radius of the Site for the Proposed Scheme, which includes the Gas Pipeline route. The Consultation Report (Document Reference 5.1) provides further information on the consultation process and is available to view alongside the Environmental Statement.
- 1.4.3. The consultation process covered the following aspects of the Proposed Scheme: design and layout of the infrastructure and buildings, proposals for the Gas Pipeline route options and the preliminary results of the likely environmental effects on surrounding local communities and environmental receptors. The information presented also included proposed mitigation.
- 1.4.4. Further information about consultation undertaken to date is provided in the Environmental Statement Volume 1: Chapter 1 (Document Reference 6.1).

2 EIA METHODOLOGY

2.1 General Impact Assessment Approach

- 2.1.1. The objective of the Environmental Impact Assessment process is to anticipate the changes (also referred to as impacts) that may occur to the environment as a result of the Proposed Scheme (for example changes to air quality). The changes are compared to the environmental conditions that would have occurred without the Proposed Scheme (defined as the baseline conditions).
- 2.1.2. The Environmental Impact Assessment process identifies potentially sensitive receptors that may be affected by the predicted changes, for example local residents living near the Proposed Scheme and local flora and fauna. The process then defines the extent to which these sensitive receptors may be affected by the predicted changes.
- 2.1.3. Effects on receptors can be adverse (negative), neutral (neither negative nor positive) or beneficial (positive). Effects may also be permanent (irreversible) or temporary (reversible) and direct or indirect.
- 2.1.4. The interaction between the sensitivity or importance of a receptor and the potential scale of the impact produces the significance of the environmental effect which can range from negligible/no change to major. The description of the impact assessment methodology adopted for the Proposed Scheme is set out in each technical chapter of the Environmental Statement.
- 2.1.5. Where possible, the Environmental Statement uses standard methodologies, based on legislation, definitive standards, and accepted industry best practice and criteria. The terminology generally used for classifying significance of an effect (unless indicated otherwise) is set out in Table 2-1.

Table 2-1 - Terminology for Classifying the Significance of the Effect

Significance of the Effect	Definition for an Adverse Effect	Definition for a Beneficial Effect
Major	The impact gives rise to serious concern and it should be considered as unacceptable.	The impact provides a significant positive gain.
Moderate	The impact gives rise to some concern but is likely to be tolerable depending on scale and duration.	The impact provides some gain to the environment.
Minor	The impact is undesirable but of limited concern.	The impact is of minor significance but has some environmental benefit.
Negligible	The impact is not of concern or is unlikely to be detected.	The impact provides some environmental benefits but these are negligible.
No change	There is an absence of one or more of the following: impact source, pathway or receptor.	

- 2.1.6. Significant effects are generally considered to be moderate or above. Where a significant adverse effect is predicted on one or more receptors, additional mitigation measures are identified, if possible, to avoid or reduce the effect identified, or to reduce the likelihood of occurrence. With mitigation in place, the residual effect is assessed, which is the predicted significance of the effect after the implementation measures have been implemented.
- 2.1.7. Cumulative effects of the Proposed Scheme with other developments, as well as the combined effect of different types of environmental effects from the Proposed Scheme on the same receptors, are also considered in the Environmental Statement. The proposed methodology to assess cumulative effects is described separately in Chapter 17 (Cumulative Effects) of the Environmental Statement.

2.2 Results of the Scoping Stage

- 2.2.1. The topics to be assessed within the Environmental Impact Assessment were agreed through consultation as follows:
- Traffic and Transport.
 - Air Quality.
 - Noise and Vibration.
 - Historic Environment.
 - Biodiversity.
 - Landscape and Visual.
 - Ground Conditions and Contamination.
 - Water Resource, Quality and Hydrology.
 - Waste.
 - Socio-economics.
 - Climate.
 - Major accidents and Natural Disasters.
 - Cumulative effects.
- 2.2.2. Volume 1 of the Environmental Statement contains technical chapters focussing on each of the above topics. The assessment of the above topics considers the following, as a result of the Proposed Scheme:
- Disturbance, disruption and reduction in amenity of residents during construction.
 - Effects in relation to health.
 - Effects in relation to quality of surroundings and sense of place.
 - Effects in relation to severance and delay.
- 2.2.3. The Scoping Opinion concluded that assessment of the following impacts could be scoped out or removed from further assessment, because it was not considered that the Proposed Scheme will have a significant effect in terms of:
- Local infrastructure and services (for e.g. educational and healthcare services, community facilities and accommodation).
 - Site security.
 - Disruption to local businesses.
 - Reduction in amenity value, leisure uses or tourism.
 - Health and safety (although impacts on human health are included within the Environmental Impact Assessment).

- Employment during operation (although this is discussed in Chapter 14 (Socio-Economics)).

2.2.4. The topics relevant to the Environmental Impact Assessment process have been assessed further in the Environmental Statement and the key findings are summarised in this Non-Technical Summary.

2.3 Scheme Design, Impact Avoidance and Mitigation

2.3.1. The Applicant has worked with the environmental specialists of WSP to ensure that the design of the Proposed Scheme avoids or reduces environmental effects on receptors where possible. A number of measures have been incorporated into the concept design to avoid or minimise environmental impacts. These measures include those required for legal compliance and also include current industry best practice guidance which would be adopted during construction and operation of the Proposed Scheme.

2.3.2. These in-built types of mitigation measures are called embedded mitigation and the assessment presented in each technical chapter of the Environmental Statement has identified and quantified, where possible, the embedded mitigation measures proposed to minimise the environmental effects of the Proposed Scheme. In addition, further consideration has also been given to mitigate any potentially significant adverse effects that have been identified. The residual effects (effects remaining after the implementation of any additional mitigation) have then been assessed and presented in each chapter.

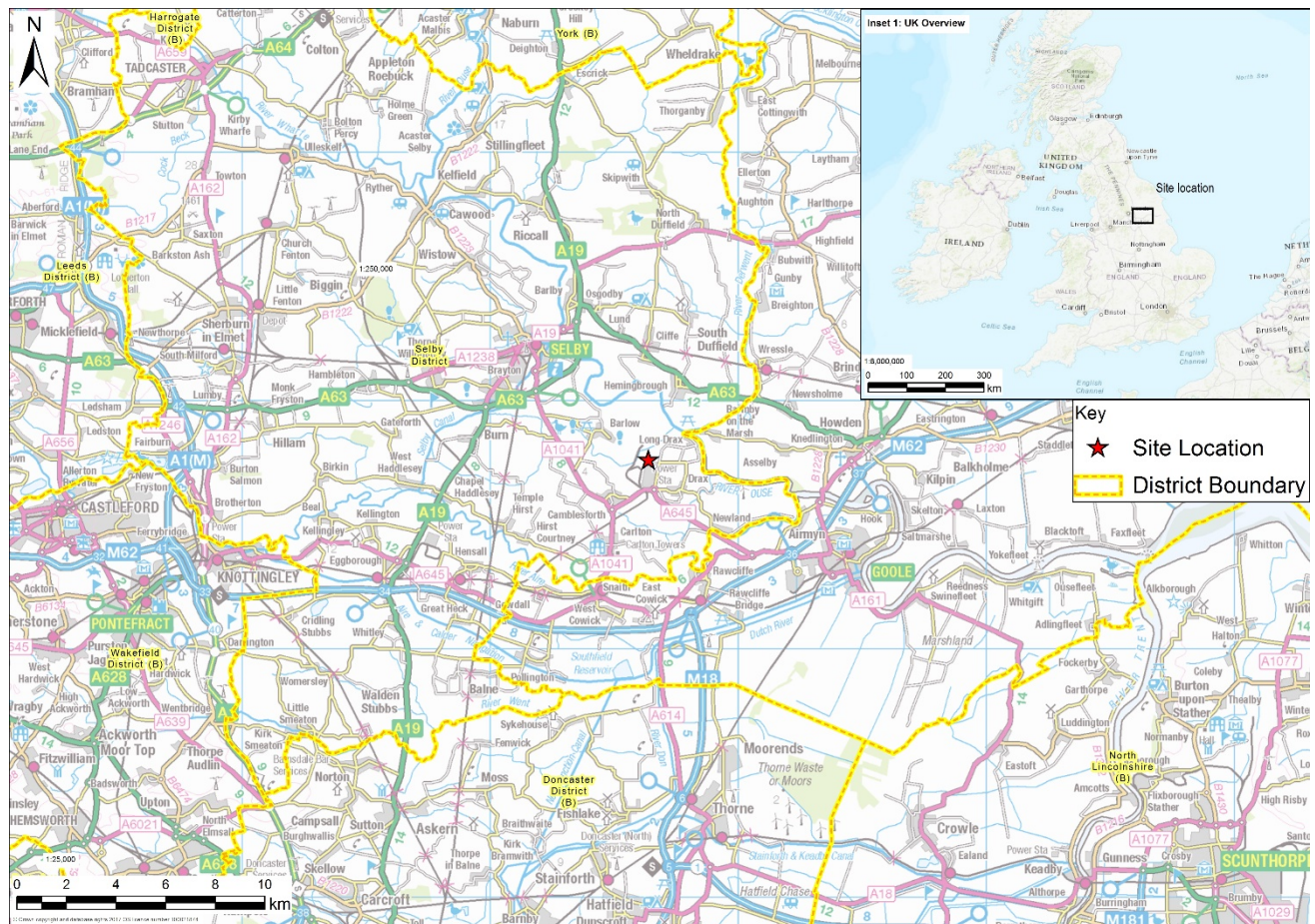
2.3.3. The construction mitigation measures recommended during the Environmental Impact Assessment process will be reported in a Construction Environmental Management Plan which will be prepared and implemented during the construction of the Proposed Scheme by the construction contractor. Measures may include how heavy goods vehicles access the Site, how waste is handled, various environmental protection methods and how codes of conduct are to be complied with. An outline Construction Environmental Management Plan accompanies the Environmental Statement and the Development Consent Order application (Document Reference 6.5).

3 SITE AND PROJECT DESCRIPTION

3.1 Site Location and Description

3.1.1. The Proposed Scheme is located at the Existing Drax Power Station Complex. This Site is located off the A645 north of Drax Village and south of the A63, and lies between the A1041 to the west and the River Ouse to the east, as shown in Figure 1.

Figure 1 - Site Location



3.1.2. A Site Boundary has been defined for the Proposed Scheme and represents the maximum extent of all potential permanent and temporary works (see Figure 2). The Site covers approximately 78.9 ha and comprises the Pipeline Area and the Power Station Site (which also encompasses an area adjacent to the Existing Drax Power Station Complex – to the east of New Road; this area is called the Carbon capture reserve space).

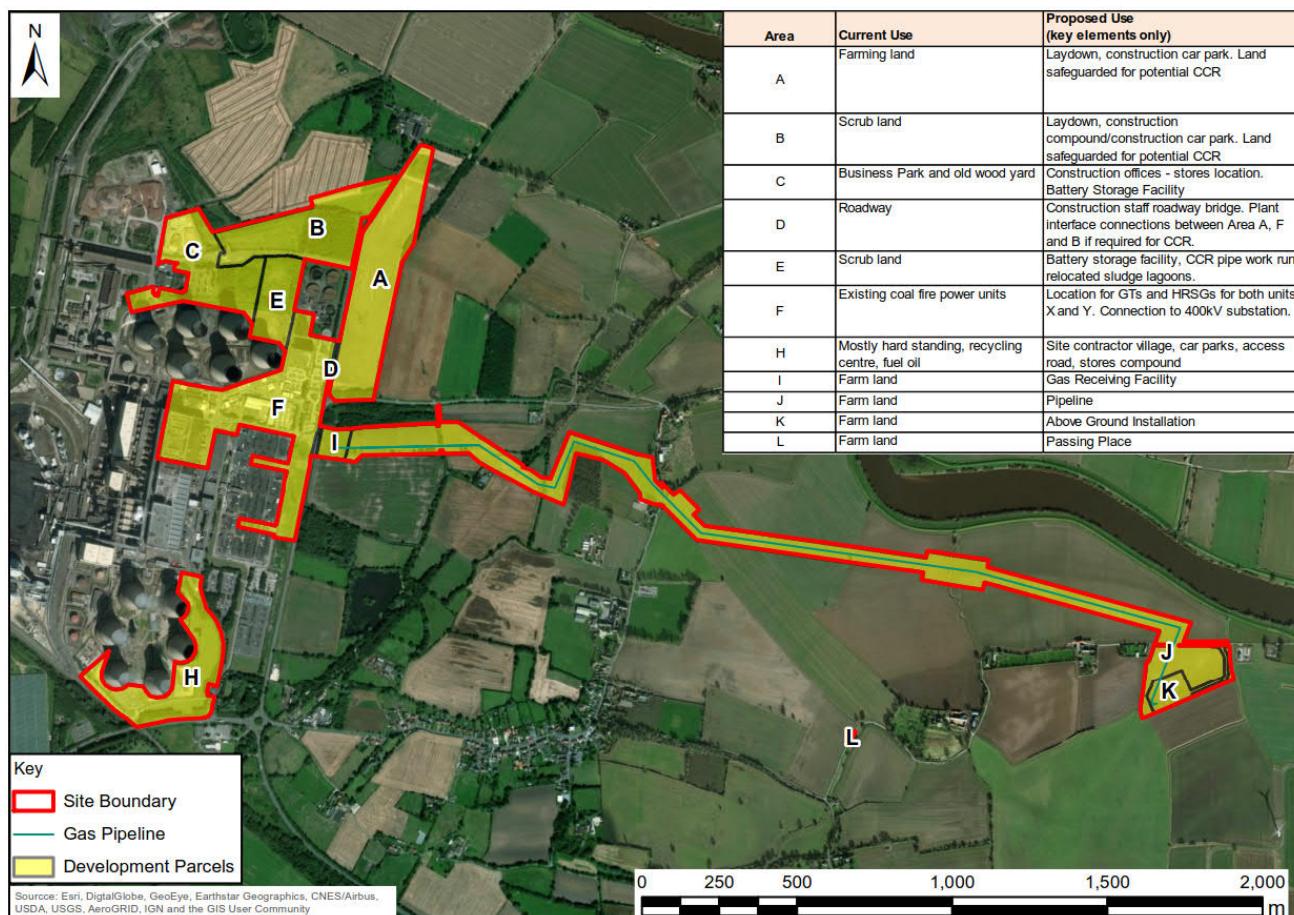
3.1.3. The Power Station Site is located within the Existing Drax Power Station Complex that includes the existing coal generation units to be repowered (Unit 5 and Unit 6), National Grid substation, a coal stock yard, a fuel oil store, hard standing, contractor’s compounds and stores. Other facilities include the sludge lagoons, car parks, and access and services roads. The Power Station Site also encompasses agricultural land, scrub land and

grassland. There is also a wood yard and a former business park within the Power Station Site.

3.1.4. As referred to above, other land within the Power Station Site, and located immediately to the east of New Road and the Existing Drax Power Station Complex (but which is not part of it) is an area of open grassland, scrub and agricultural land, which, for the purposes of the Development Consent Order application, is referred to as the Carbon capture readiness reserve space. The Carbon capture readiness reserve space is land to be set aside to accommodate future carbon capture equipment, making the proposed plant in effect “carbon capture ready” for when the Carbon capture readiness state is achieved. This land is within Development Parcel A and B shown in Figure 2 below.

3.1.5. The Pipeline Area is located from the Existing Drax Power Station Complex to the National Transmission System operated by National Grid. It includes a Gas Receiving Facility adjacent to the Power Station Site and Above Ground Installation

Figure 2 - Development Parcels



3.2 The Existing Environment Surrounding the Site

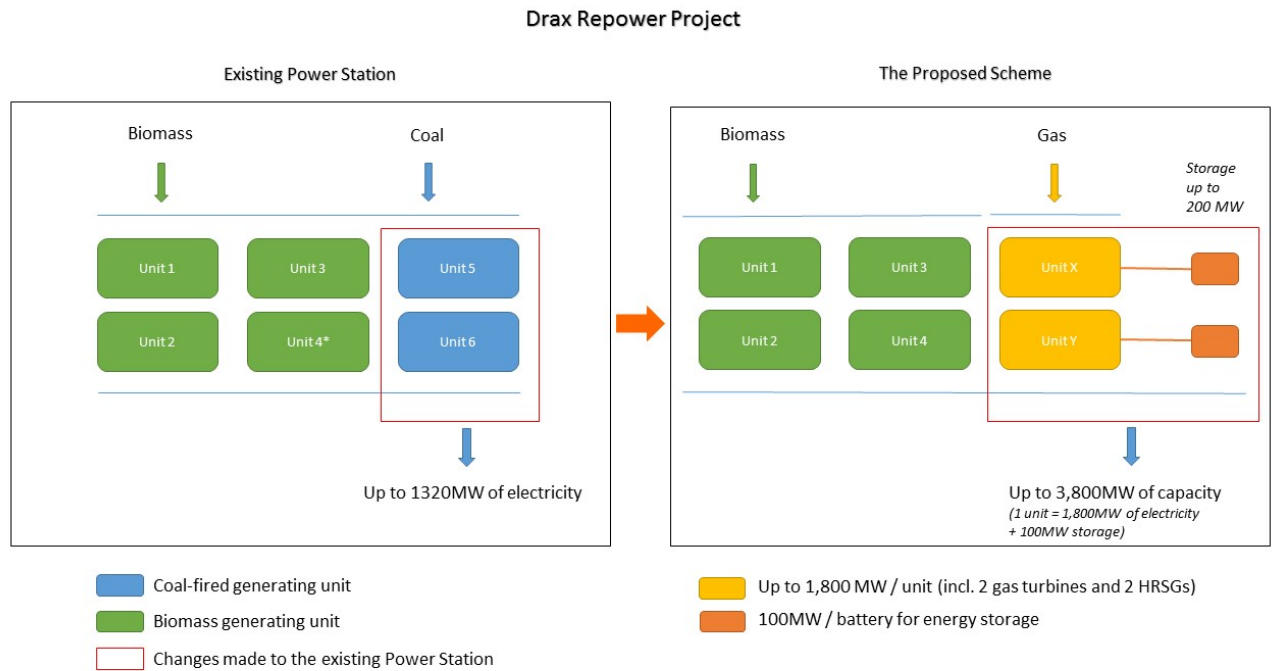
- 3.2.1. The Existing Drax Power Station Complex is located approximately 5 km south east of Selby and 7.5 km north west of Goole. Four settlements are located within a radius of approximately 2 km from the Existing Drax Power Station Complex. The nearest is Drax followed by Camblesforth, Barlow and Long Drax.
- 3.2.2. The Existing Drax Power Station Complex lies close to the junction of the A1041/A645 near Camblesforth and is accessed from the A645 to the south of the site. This access is primarily used by staff and visitors. Site contractors, deliveries and heavy goods vehicle traffic make use of another entrance to the site which is located on New Road on the eastern boundary of the Existing Drax Power Station Complex.
- 3.2.3. The Existing Drax Power Station Complex is a major feature in the region. The area surrounding the Existing Drax Power Station Complex is predominantly rural and agricultural, with scattered residential dwellings. There are a number of unclassified roads within close proximity to the Proposed Scheme, with Main Road and Carr Lane providing access to neighbouring villages of Drax and Long Drax. A number of Public Rights of Ways run immediately adjacent to the border of the Site Boundary and extend across the surrounding area.
- 3.2.4. There are designated ecological sites located within close proximity to the Existing Drax Power Station Complex. The nearest designated site is the River Derwent located approximately 0.7 km to the north of the Existing Drax Power Station Complex. It is designated as a Special Area of Conservation. The River Ouse, which forms part of the Humber Estuary designated sites, is located 1.5 km north east of the Site.
- 3.2.5. Within close proximity to the Existing Drax Power Station Complex, there is an industrial site and Drax Skylark Centre and Nature Reserve. Further away, there is also the Drax Golf Club and Rusholme Wind Farm.

3.3 Description of the Proposed Scheme

- 3.3.1. Drax proposes to repower up to two existing coal-powered generating units (Unit 5 or Unit 6, or both) at the Existing Drax Power Station Complex. This will involve the re-use of existing infrastructure and the installation of new gas turbines to enable the construction of a gas fired generating plant, and the term "repower" is used to explain this re-use of existing infrastructure. The new gas turbine generating stations (or units) have been designated the terms "Unit X" and "Unit Y".
- 3.3.2. Each repowered generating unit would have up to two new gas turbines. Each generating unit will have up to four stacks (or chimneys) (a total of eight stacks if both Unit X and Unit Y are repowered). The stacks will vent hot exhaust gases emitted as a result of the combustion of fuels to the atmosphere.
- 3.3.3. The gas turbines can operate in both combined cycle (often referred to as 'CCGT') and open cycle modes (often referred to as 'OCGT') as follows:
 - 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 hot gas steam from the gas turbine will pass through a recovery heat exchanger (called the Heat Recovery Steam Generator) to generate steam that will be used to power the existing steam turbines.
- 3.3.4. Each of Unit X and Unit Y would (subject to technology and commercial considerations) be connected to a battery energy storage facility of up to 100 MW in capacity (i.e. up to 200 MW for both Unit X and Unit Y). This would support the repowered units in providing fast and flexible electricity export to the National Grid.
- 3.3.5. When all the infrastructure is installed, this would result in a combined capacity of up to 3,800 MW (up to 1,900MW should only Unit X be repowered), replacing existing units with a combined capacity to generate up to 1,320 MW (660 MW each unit). The combined capacity of 1,900 MW for one unit (either Unit X or Unit Y) is comprised of 1,800 MW of electricity generating capacity and 100 MW of battery storage capacity. The 1,800 MW of electricity generating capacity for one unit is made up of: (i) two gas turbines powering a dedicated generator of up to 600 MW in capacity (so for the two turbines, a combined capacity of up to 1,200 MW), and (ii) the gas turbines providing steam to the existing steam turbine which generates 600 MW.
- 3.3.6. An illustration of the proposed changes at the Existing Drax Power Station Complex as part of the Proposed Scheme is presented in Figure 3.

Figure 3 - Overview of the Proposed Scheme



*Unit 4 is currently coal-fired, however will be converted to biomass by the end of 2018.

Proposed buildings and infrastructure at the Power Station Site

3.3.7. The main buildings and elements of the gas turbine generating units are listed below. References to "Work No." are references to the work number that each component has been given in the detailed description of the Proposed Scheme in the draft Development Consent Order that has been prepared for this Application.

Table 3-1 - Description of the Proposed Buildings and Infrastructure

Project Component	Description
Gas Turbine Units (part of Work No. 1A and Work No. 2A)	Up to two gas turbines for each of Unit X and Unit Y (up to four in total if both are constructed).
HRSGs (part of Work No. 1A and Work No. 2A)	Up to two HRSGs for each of Unit X and Unit Y (up to four in total if both are constructed).
Stacks (part of Work No. 1A and Work No. 2A)	Up to four stacks (or chimneys) for each of Unit X and Unit Y (up to eight in total if both are constructed): <ul style="list-style-type: none"> Main stack of 120 m in height (would operate in combined cycle). Bypass stack of 120 m in height (would operate in open cycle).
NOx abatement	The inclusion of this technology is one option for how Unit X and Unit

Project Component	Description
technology	Y will operate, and it would reduce the amount of nitrogen oxide (NOx) emissions from the plant.
Cooling Solution	The existing condensers (heat exchangers) and cooling water infrastructure will be used (this includes the existing northern group of cooling towers on the Existing Drax Power Station Complex). No new infrastructure is therefore required to condense the steam produced when the units are operating in combined cycle mode.
Battery Storage (Work No. 3)	Each of Unit X and Unit Y would (subject to technical and commercial considerations) be connected to a battery energy storage facility of up to 100 MW in capacity (up to 200 MW capacity if both Unit X and Unit Y are constructed). Both battery storage facilities would be located in the one building.

3.3.8. The location of these facilities is presented in Figure 4a and 4b.

Figure 4a - Key Elements of the Proposed Scheme (1)

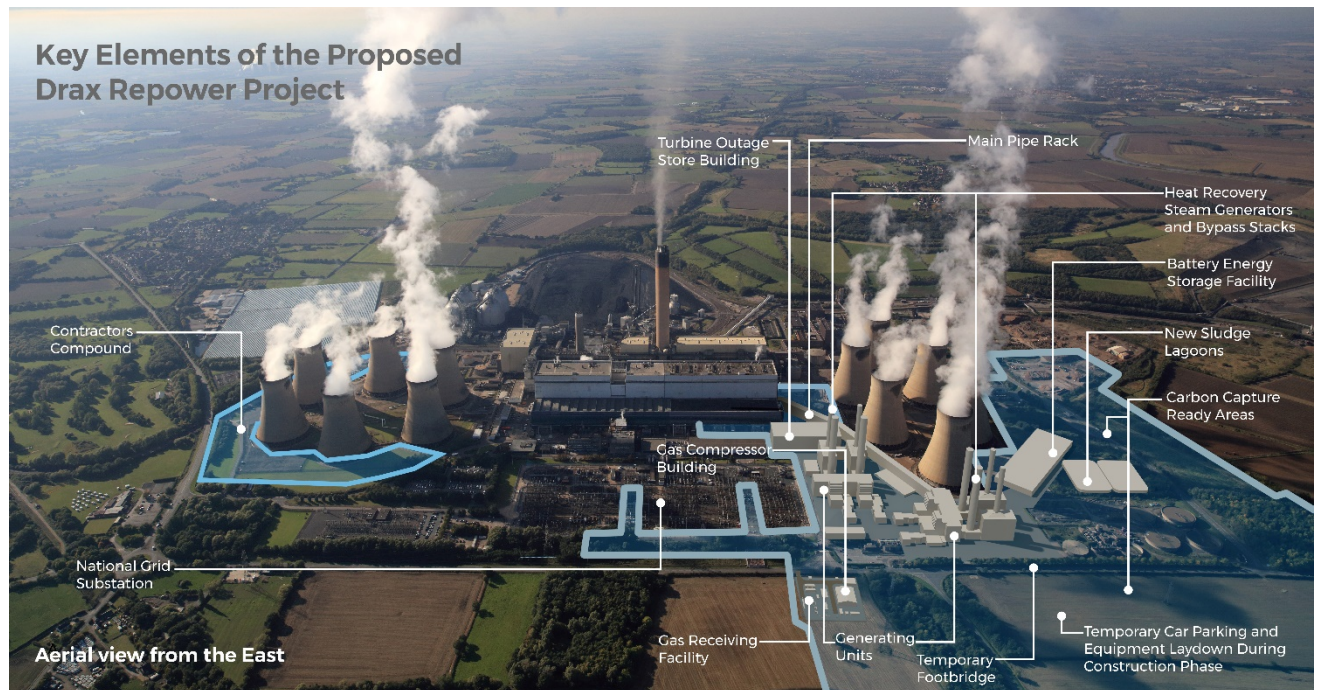
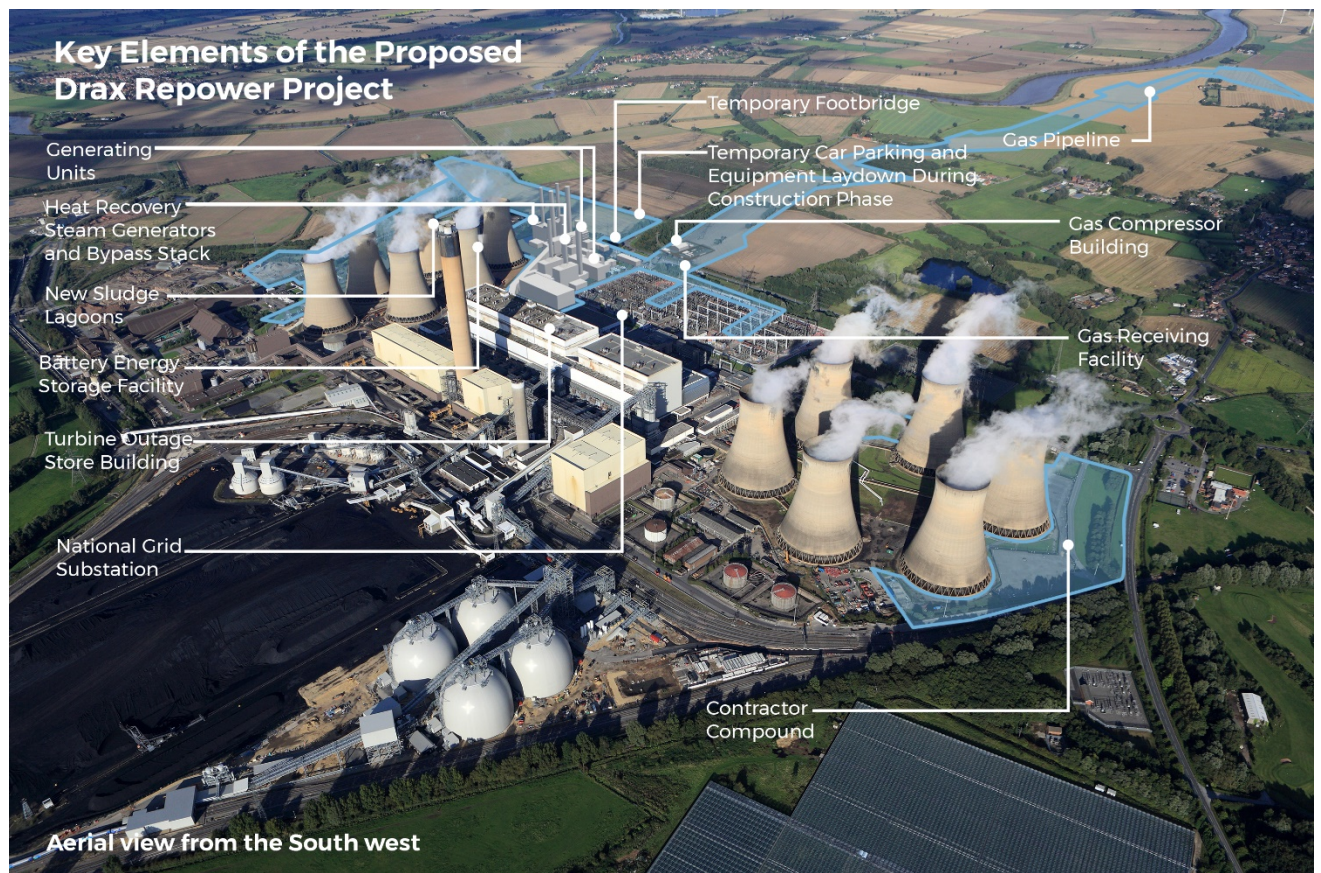


Figure 4b - Key Elements of the Proposed Scheme (2)



Associated development

- 3.3.9. As part of the Proposed Scheme, it is proposed to construct the following associated development, both within and outside of the Existing Drax Power Station Complex (as indicated below and shown on the figures above).

Table 3-2 - Description of Associated Development

Project Component	Description
Gas Pipeline (Work No. 7)	A gas pipeline of around 3 km in length will be built to connect Unit X and Unit Y to the National Transmission System. The Gas Pipeline will be located outside the Existing Drax Power Station Complex and will extend eastwards with a diameter of up to 600 millimetres nominal bore. At the start of the Gas Pipeline, where it connects to the National Transmission System, is the Above Ground Installation, and at the end of the Gas Pipeline (before the Gas Pipeline enters the Power Station Site) is the Gas Receiving Facility and Gas Compression Building, and these components are described below.
Above Ground Installation (Work No. 6)	Supporting infrastructure to connect Unit X and Unit Y to the National (gas) Transmission System (via the Gas Pipeline) will include the following above ground infrastructure: a Minimum Offtake Connection, a Pipeline Inspection Gauge, a Trap Facility and on-site pressure reduction and metering station. These facilities will be located adjacent to the National Transmission System at the start of the Gas Pipeline. The final location will be determined based on local constraints to minimise potential impacts.
Gas Receiving Facility (part of Work No. 5)	The Gas Receiving Facility will receive the natural gas coming from the Gas Pipeline. The Gas Receiving Facility would comprise an emergency control valve, filtration and metering equipment, preheating boilers, heat exchangers, pressure regulations and gas compression equipment. The gas fired boilers will have a total installed capacity of approximately 7.2 MW thermal input. These would operate only in cold conditions. It is anticipated that this will be provided as two boiler houses. Each boiler house will operate with five 600 kW boiler units, with one spare for outages. Emissions will be through a total of four flue stacks, arranged in two pairs. These stacks will be approximately 10 m in height. The Gas Receiving Facility would be located outside the Existing Drax Power Station Complex, within the Pipeline Area as shown in Figure 4a and b.
Gas	The gas compressor building will receive gas from the Gas

Project Component	Description
Compression Building (part of Work No. 5)	Receiving Facility and, if required, increase the gas pressure to that required for the new gas turbines used by Unit X and Unit Y. The building will house a number gas compressors and all associated piping, valves, control and electrical equipment. External cooling equipment will be required and this will be located adjacent to the building. The gas compressor building would be located outside the Existing Drax Power Station Complex, within the Pipeline Area as shown in Figure 4a and b.
Electrical Connection (Work No. 4 and Work No. 8)	<p>The output from each of Unit X and Unit Y would be banked using Gas Insulated Switchgear housed in a new building close to the generating units. Connection from the Gas Insulated Switchgear banking building to the existing National Grid 400kV substation would be by either:</p> <ul style="list-style-type: none"> • An underground cable to the existing National Grid 400kV substation; or • An underground cable that terminates in a new cable sealing end compound outside of the boundary of the existing National Grid 400kV substation and is connected to the existing equipment using overhead conductors.
Switchyard and Transmission Plant Works in existing 400kV National Grid Switchyard (Work No. 8)	<p>Switchyard and transmission plant works are within the existing 400kV switchyard which is owned and operated by National Grid. These works may therefore be undertaken by National Grid or by Drax (which is why they are included as part of the Proposed Scheme).</p> <p>It may be necessary to remove and restring some of the existing overhead lines during the construction phase of the Proposed Scheme.</p>
Carbon Capture (Work No. 10)	The gas turbine generating units will be designed to be carbon capture ready. A suitable area of land has been identified for the installation of carbon capture equipment and will be safeguarded for this purpose as part of this Application, should the installation of such equipment be required in the future (see Figure 4). This land is referred to in the Development Consent Order application as the Carbon capture readiness reserve space.
Combined Heat and Power	<p>Combined heat and power is a highly efficient process that captures and utilises the heat that is a by-product of the electricity generation process.</p> <p>A study has been carried out to assess the viability of Combined Heat and Power at the Power Station Site, and concluded that it is not feasible for the Proposed Scheme to be developed with a combined heat and power process built into it, but that it would be 'CHP Ready', which means it could accommodate this process if it</p>

Project Component	Description
	becomes feasible in the future. The result of the study is reported in the CHP Statement submitted with this Application (Document Reference 5.6).
Other necessary infrastructure (Work Nos 1, 2, 3, 5, 6, 7, 8, 9, 10, 11 and 15)	<ul style="list-style-type: none"> • Security infrastructure, including cameras and perimeter fencing. • Site lighting infrastructure, including lighting columns. • Site drainage. • Electricity, water, waste water and telecommunications and other services. Boundary treatments such as landscaping and ecological mitigation as necessary.

3.3.11. The location of these facilities is presented in Figure 4a and 4b above.

3.4 Construction

3.4.1. The construction activities will start with the mobilisation of staff and equipment, and also enabling works to allow the commencement of the construction of the proposed infrastructure. This will involve demolition works and relocation of existing facilities to construct Unit X and Unit Y and associated facilities. Temporary sites (for e.g. material laydown areas) will be constructed or altered to support the execution of the construction works.

3.4.2. A brief description of the main construction activities is presented below.

Demolition and Relocation of Existing Facilities

3.4.3. As part of the preparation for the Proposed Scheme on the Power Station Site, it is anticipated that a number of existing facilities at the Existing Drax Power Station Complex will be demolished, removed and/or relocated. These would be relocated to the area referred as the contractor compound on Figure 4 and Figure 5. These works are referred to collectively as the Site Reconfiguration Works (Work No. 15), and they are referred to further below in relation to the stages of development.

Construction sites, Laydown Areas and Transportation

3.4.4. Several construction and laydown areas have been identified within or adjacent to the Power Station Site for use during construction as shown in Figure 2 (Work Numbers 6C, 6D, 7B and 9). These include:

- Three construction laydown areas to accommodate temporary offices, warehouses, workshops, open air storage areas and car parking.
- A contractor's compound of 100 m x 100 m for the pipeline construction.
- A pipe storage yard approximately 150 m x 60 m.

3.4.5. The construction works will also require:

- Construction of a temporary pedestrian bridge to connect the contractor's laydown area to the Power Station Site (part of Work No. 9A).

- Temporary road closures and works such as temporary removal of barriers, traffic signs and street furniture to accommodate the transport of large plant and equipment from where they would be delivered at Goole Docks, to the Site, via the M62. The land will be reinstated to its former condition once the equipment is delivered to site. Street powers are sought in the draft Development Consent Order to provide Drax with the power to temporarily close the roads along the construction traffic route and to remove street furniture. No development is proposed.

Construction of the Gas Pipeline

- 3.4.6. The Gas Pipeline would be constructed using primarily open cut construction techniques. Areas containing constraints (such as hedgerows or water crossings) may make use of trenchless crossing techniques. A construction corridor with a width of approximately 30 metres would be used and this may be increased up to 100 metres wide if specific crossing techniques are required.
- 3.4.7. Following the construction of the Gas Pipeline, the land will be reinstated. The loss of hedgerows will be avoided where possible and hedgerows that are removed will be replaced. Following the construction of the Gas Pipeline, agricultural activities can continue above the Gas Pipeline. However, there will be some restrictions surrounding activities including deep ploughing and the planting of trees.

Construction Working Hours

- 3.4.8. Working hours during construction are expected to be from Mondays to Fridays (07:00 to 19:00) and Saturdays (07:00 to 13:00). There is a one hour window either side of the standard working hours in which construction workers may arrive / depart, get changed and have a pre / post work briefing, however this would only occur within the Existing Drax Power Station Complex, and the construction compound immediately adjacent to it.
- 3.4.9. Some construction activities will be required to be 24 hours at certain times and these will be agreed in advance with the Local Planning Authority.

3.5 Operation and maintenance

- 3.5.1. Unit X and Unit Y would be operated and controlled from the current Drax control room which is situated within the Existing Drax Power Station Complex. The proposed generating equipment would be capable of responding to requests from National Grid to provide short-term additional generating capacity and other ancillary grid services, as well as selling electricity into the market. Gas generation will allow Unit X and Unit Y to respond rapidly to changing demands of the electricity market.
- 3.5.2. The facility will be designed to operate 24/7 with programmed offline periods for maintenance. Specific hazard prevention and emergency planning will be put in place by the Applicant and will be managed through the implementation of a Health and Safety Plan, an extension of the existing Health and Safety Management System. This plan will cover commissioning and operation of the Proposed Scheme.
- 3.5.3. During operation, road and area lighting will be provided to ensure the safety of staff and effective visibility for the CCTV system. New lighting will be designed to minimise any offsite effects.

3.6 Decommissioning

- 3.6.1. The Proposed Scheme will be designed to operate for up to 25 years after which the continued operation of infrastructure will be reviewed. If it is not appropriate to continue operation, the plant will be decommissioned.
- 3.6.2. During decommissioning, demolition plant/equipment items would be mobilised to demolish Unit X and Unit Y and the installations located above ground (although the Above Ground Installation may need to remain in place). It is assumed that the Gas Pipeline would be left in the ground.
- 3.6.3. The decommissioning phase is likely to take place over several months. For the purpose of the Environmental Impact Assessment, the environmental effects of decommissioning are assumed to be no worse than the effects resulting from construction. When specific effects are expected from the decommissioning phase that differ from this assumption, this has been stated in the Chapters 5 to 16.

3.7 Programme

- 3.7.1. Unit X and Unit Y will be constructed in phases, with construction of each taking approximately 34 months followed by commissioning. It is anticipated that the two construction periods (should both Unit X and Unit Y be constructed) will be separated by 12 months, with the overall programme lasting approximately 83 months including commissioning of Unit Y.
- 3.7.2. The battery storage facility and Gas Pipeline would be constructed within the first half of this programme, during the same stage as Unit X.
- 3.7.3. The construction of Unit X will start in late 2019/2020 (assuming approval by the Secretary of State of the Development Consent Order application) and will be completed in 2023. If a Unit Y is built, its construction would start in 2024 and would end in 2027.

3.8 Stages of development

- 3.8.1. A number of stages of development have been considered in the Environmental Statement. These are set out in Table 3-3 below.

Table 3-3 - Stages of the Proposed Scheme which have been considered in the Environmental Statement

Stage	Title	Description
0	Site Reconfiguration Works (Work No. 15)	<p>This refers to the demolition and relocation of existing facilities as set out above.</p> <p>Site Reconfiguration works must be completed prior to the other stages commencing. The Applicant has also submitted a planning application to Selby District Council in relation to these works, so it may be that these works are undertaken earlier than the grant of the Development Consent Order, if that</p>

Stage	Title	Description
		planning application is approved.
1	Construction of Unit X (Work Nos. 1, 3A, 4A, 5, 6, 7, 8A, 9, 11, 12A, 13, 14)	<p>This stage assumes that the Site Reconfiguration Works have been completed.</p> <p>This stage refers to the construction of Unit X, along with the construction of the Gas Pipeline, Gas Receiving Facility, Above Ground Installation, the battery storage facility for Unit X, and the building to house the battery storage (for both Units X and Y).</p> <p>Construction laydown areas for the Gas Pipeline, Gas Receiving Facility and Above Ground Installation will be reinstated once construction of these facilities is complete.</p>
2	Operation of Unit X and construction of Unit Y (Work Nos 2, 3B, 4B, 8B, 9, 11, 12B).	The stage refers to the operation and maintenance of Unit X, the Gas Pipeline and the battery storage facility and the construction of Unit Y (and the installation of 100 MW of battery within the battery storage building constructed in Stage 1).
3	Operation of Unit X and Y.	This stage refers to the operation and maintenance of Unit X, Unit Y, the Gas Pipeline and the battery storage facility.
4	Decommissioning	The Gas Pipeline will be left in place and the majority of above ground infrastructure removed / reused / recycled. Some infrastructure, such as the Above Ground Installation, may need to remain in place.

3.9 Climate Vulnerability

- 3.9.1. A Climate Risk and Vulnerability Assessment was undertaken for the Proposed Scheme. It identifies the key vulnerabilities of the Proposed Scheme, existing adaptation measures and an overall resilience rating.
- 3.9.2. The results of the assessment are detailed below.
- 3.9.3. The Proposed Scheme was deemed to be Highly resilient to:
- Structural stability, relating to:
 - Flooding of the site and its assets, droughts, damage to structures, signage and foundations, overheating of equipment, lightning strike and fires.

- Weather proofing and detailing, relating to:
 - Guttering and drainage, the mobilisation of pollutants, dust and windborne materials and high diurnal temperature ranges.
- Material durability, relating to:
 - Deterioration of materials and damage to weather proofing.
- Site contents and business continuity, relating to:
 - Loss of service due to flooding, extreme rainfall causing power outages, availability of water for abstraction, working conditions, reduced opportunities for maintenance and electrical surges caused by storms.

3.9.4. The Proposed Scheme was deemed to be Moderately resilient to:

- Structural stability, relating to:

Subsidence, failure of earthworks and shrinking/cracking of soils.

4 CONSIDERATION OF ALTERNATIVES

- 4.1.1. In accordance with the EIA Regulations 2017, an Environmental Statement should include a description of the reasonable alternatives to the Proposed Scheme considered by the Applicant, and give an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment.
- 4.1.2. The Applicant's objectives are set out above, and include (i) meeting the Government's aims of reducing reliance on coal, (ii) creating a diverse energy mix to maintain a secure, reliable large scale electricity supply and providing flexible back up for intermittent renewable energy, (iii) maximising the efficiency of the Existing Drax Power Station Complex, and (iv) re-using as much existing operational land and infrastructure as possible so that the transition to a lower carbon producing energy source minimises the additional land and equipment needed (thereby contributing to more efficient energy production and minimising the carbon footprint). As part of the consideration of how these objectives could be achieved, a number of potentially realistic options were identified for consideration, taking account of environmental constraints (see Environmental Statement Volume 1 - Chapter 4).
- 4.1.3. A summary of the key findings from this exercise is presented below, against each alternative considered:
- **'Do Nothing' scenario:** this would consist of the continued operation of the existing coal-fired generating units (Units 5 and 6) at the Drax Power Station (with carbon dioxide emissions at a lower level in line with Government requirements after 2025). However, this option is not considered the most appropriate way forward for Drax Power Station and does not meet any of the objectives, in particular in moving towards a lower carbon energy mix (even at reduced carbon dioxide levels) and providing flexibility in energy supply. This was not considered appropriate given the established national need for new energy generation.
 - **Alternative development sites:** given the nature of the objectives for the Proposed Scheme (i.e. re-using existing operational land and infrastructure for the construction of Unit X and Unit Y), no other sites were considered as a viable or suitable alternative to the Existing Drax Power Station Complex.
 - **Alternative layouts:** in order to achieve the above objectives (in particular in terms of the efficiency of Drax Power Station, including the amount of additional land needed and carbon footprint generated by the Proposed Scheme) only available areas within the Existing Drax Power Station Complex with sufficient space and causing minimal disruption to existing operations were considered for the new Unit X and Unit Y. Two layouts were discounted based on their engineering feasibility and impact on efficiency.
 - **Alternative technologies:** Drax is working in partnership with Siemens to install Siemens gas turbines and battery technology at the Power Station Site. The new gas turbines will likely be Siemens SGT5-9000HL machines. Previous generations of gas turbine, such as the Siemens SGT5-8000H, are not considered suitable for the Proposed Scheme because of their inefficiency and lack of compatibility with the existing steam turbines. It is also proposed to make use of vertical Heat Recovery Steam Generators. Horizontal units were discounted due to insufficient space at the Power

Station Site, and vertical units have the advantage of being able to be located closer to the existing steam turbines, which improves efficiency.

- **Alternative emissions abatement:** a variety of strategies have been considered to reduce nitrogen oxide emissions. Several measures that would reduce nitrogen oxide emissions have been discounted, based on their likely emissions or because they would negatively impact the efficiency of the Proposed Scheme. As a result, the Proposed Scheme includes two options; for the Proposed Scheme to operate with lower nitrogen oxide emissions through combustion control, or with the use of Selective Catalytic Reduction with an annualised ammonia budget. SCR is a nitrogen oxide abatement technology (although the Applicant does not consider that a further reduction in nitrogen oxide emissions from such abatement technology is required).
- **Alternative stack configurations:** A stack height of 120 m is proposed to reduce the impact on air quality. Smaller stack heights, along with a connection to the existing main stack have also been considered and discounted because of their impact on efficiency.
- **Alternative fuels for electricity generation:** given one of the objectives for the Proposed Scheme is to provide reliable large scale electricity supply and flexible back up for intermittent renewable energy, only two fuel types were considered for the Proposed Scheme, namely biomass and natural gas. Natural gas was assessed as an economically viable fuel choice for the Proposed Scheme, and also ensures a diverse energy mix at the Drax Power Station.
- **Alternative options for the gas pipeline route:** during the initial feasibility study, six pipeline routes were considered for the Gas Pipeline. After the preliminary analysis of technical and environmental constraints this was reduced to two (which were consulted upon at the statutory consultation stage). A final option has now been selected, based on factors relating to impact on bats, historic assets and visual character. The summary of environmental and engineering constraints is presented in the Environmental Statement.
- **Alternative construction transport routes:** the use of the Drax owned jetty on the River Ouse was considered for the delivery of materials to Site. However, this was discounted following statutory consultation and after further environmental studies, as works giving rise to significant environmental effects would be required to ensure the jetty is suitable for use.

5 TRAFFIC AND TRANSPORT

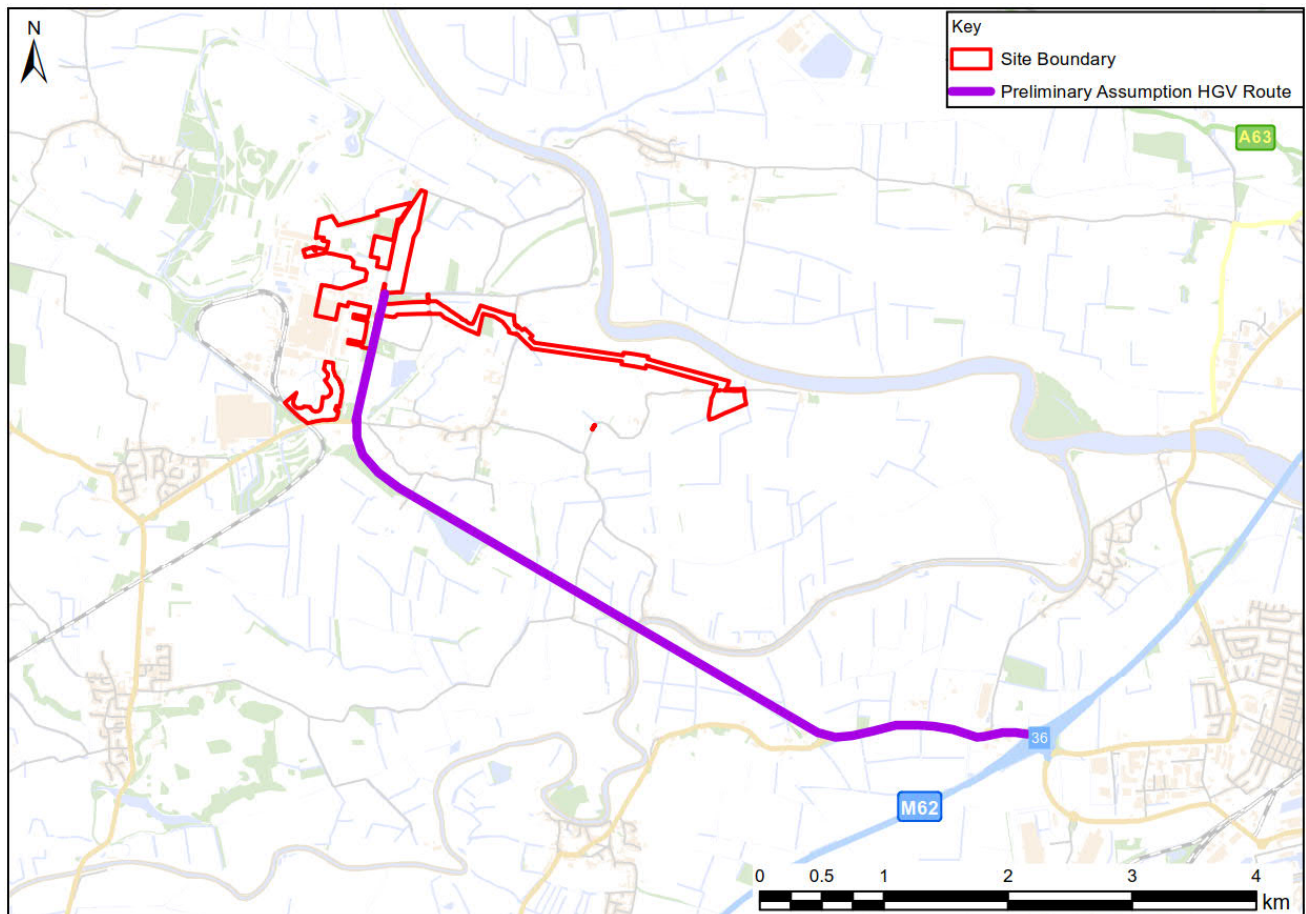
5.1 Introduction

5.1.1. The traffic and transport assessment identifies the likely significant effects of the Proposed Scheme on both motorised and non-motorised users of the road network. The study area considered as part of this assessment covers the following junctions, along with highways links between junctions:

- M62 Dumbbell junction (Junction 36).
- A645 / A1041 3 arm roundabout.
- A1041 / A63 4 arm roundabout.
- A63 / A19 4 arm roundabout.
- A63 / A1238 3 arm roundabout.
- A63 / A162 4 arm roundabout.

5.1.2. The transportation of all construction materials will be via the road network from Junction 36 of the M62. Abnormal Indivisible Loads will arrive via the Port of Goole, along the Goole Bypass, the M62 and then the A645 to Drax.

Figure 5 - Shows the Proposed Heavy Goods Vehicle Route to Site



5.1.3. The following effects have been considered on a worst case basis to ensure the effects of the Proposed Scheme are not underestimated.

5.2 Likely Stage 0 Effects

- 5.2.1. The traffic movements resulting from Stage 0 are expected to be minimal therefore the effects on traffic are not anticipated to be significant.

5.3 Likely Stage 1 Effects

- 5.3.1. A number of mitigation measures will be undertaken as part of both Stages 1 and 2 and considered as part of the Proposed Scheme, these include an outline Construction Traffic Management Plan and an outline Construction Worker Travel Plan. These plans include measures to reduce the impact on additional vehicle journeys on local roads and would be secured by requirements included in the Development Consent Order.
- 5.3.2. There will be likely significant effects on the following during Stage 1:
- Increased vehicular delay at junctions A614 / A645 and A614 / Airmyn Road. However, these effects will be temporary (two months) during construction.
 - Worsening of junction performance at A614 / A645 and A645 / New Road / Main Road. However, these effects will be temporary (two months) and limited to construction.
- 5.3.3. There are not likely to be significant effects resulting from the following during Stage 1:
- Traffic flow - effects on traffic flow will be temporary, with the greatest effect during peak construction, for approximately four months.
 - Road safety - there will be no increases in traffic cluster locations of greater than 30% throughout the day.
 - Fear and intimidation - due to low numbers of heavy goods vehicles there will be no significant effect.
 - Severance - during the construction of Stage 1, a number of Public Rights of Way may need to be temporarily closed. Closures will be temporary for approximately six months and measures to manage the closures will be put in place.
 - Pedestrian amenity - the effect is felt for a six month period during the construction of the Gas Pipeline.
- 5.3.4. A passing place is provided for in the DCO Application on Rusholme Lane to facilitate construction access to the Gas Pipeline.

5.4 Likely Stage 2 Effects

- 5.4.1. The likely significant effects resulting from Stage 2 are as follows:
- Increase in vehicular delay at A614 / A645 and A614 / Airmyn Road. However these effects will be temporary (two months) and limited to construction only.
 - Worsening of junction performance at :
 - A614 / A645.
 - A645 / New Road / Main Road.
 - A1041 / A645.
 - A614 / Airmyn Road.
 - M62 / A614.

However, these effects will be temporary (two months) and limited to construction.

- 5.4.2. There are not likely to be significant effects resulting from the following during Stage 2:

- Traffic flow - effects on traffic flow will be temporary, with the greatest effect during peak construction, for approximately four months.
- Road safety.
- Fear and intimidation.
- Severance.
- Pedestrian amenity.

5.5 Likely Stage 3 Effects

- 5.5.1. During operation there will be little change in existing workforce levels with staff being redeployed from existing operations within the Existing Drax Power Station Complex. Therefore, the operation of the Proposed Scheme will have fewer worker vehicle and heavy goods vehicle movements than during construction. Heavy goods vehicle movements will reduce from current levels with fuel being provided by the Gas Pipeline rather than heavy good vehicle deliveries, and there being a significant reduction in by-products (ash and gypsum).
- 5.5.2. The effects of Stage 3 are not considered to be significant, and for that reason have not been considered or assessed elsewhere within the ES.

5.6 Likely Decommissioning Effects

- 5.6.1. The range of mitigation measures to be implemented in the construction phase will also be adopted for the decommissioning phase of the Proposed Scheme. These measures will primarily mitigate the likely lesser impacts associated with the decommissioning works on the local area.
- 5.6.2. The mitigation measures consider the highway network at the time of decommissioning and will be formalised through the development of a decommissioning traffic management plan. The effects of decommissioning are not considered to be significant.

5.7 Conclusion

- 5.7.1. Significant effects are predicted on increased vehicular delay and worsening junction performance in Stages 1 and Stages 2. These effects will be temporary and limited to during construction.

6 AIR QUALITY

6.1 Introduction

- 6.1.1. The air quality assessment identifies the likely significant effects of the Proposed Scheme on air quality and its potential impacts on both human and ecological receptors, Air Quality Management Areas of Selby and designated ecological sites of importance.
- 6.1.2. The air quality within the study area is mainly influenced by existing emissions from the Existing Drax Power Station Complex, traffic emissions and by emissions from other industrial activities such as the Eggborough Power Station.
- 6.1.3. A qualitative assessment of air emissions and dust has been conducted for the construction phase and this takes into account predicted numbers of construction plant and vehicles, duration of activities and proximity of sensitive receptors.
- 6.1.4. A quantitative assessment of air emissions has been undertaken for the operation phase using a computer model. The assessment considers the dispersion of air emissions within a study area of up to 15 km from the Proposed Scheme. The worst case scenario is used for the purposes of ensuring the effects of the Proposed Scheme are not underestimated. It assumes that the plant runs at full load continuously and both Units 5 and 6 are repowered with the new gas fired generating units, Unit X and Unit Y, having a capacity of up to 3,800 MW.

6.2 Likely Stage 0 Effects

- 6.2.1. The main impacts during the Site Reconfiguration Works relate to dust generated during demolition and earthwork activities and exhaust emissions from construction plant equipment and construction traffic.
- 6.2.2. It is estimated that the volume of buildings to be demolished is between 20,000 m³ and 50,000 m³, with potentially dusty construction material, and with demolition activities occurring more than 20 m above ground level. The Pipeline Area is not associated with demolition activities and therefore no dust emission magnitude for demolition has been ascribed.
- 6.2.3. The following effects have been deemed not to be significant during Stage 0:
 - Dust and particulate matter emissions.
 - Exhaust emissions arising from construction plant equipment.
 - Nitrogen oxides, nitrogen dioxide and particulate matter exhaust emissions.
- 6.2.4. It has been assumed any effects to the above will be mitigated through the implementation of a Construction Environmental Management Plan, which will include a qualitative construction risk assessment and Construction Dust Assessment.

6.3 Likely Stage 1 Effects

- 6.3.1. The main impacts during Stage 1 relate to dust generated during construction and exhaust emissions from construction plant equipment and construction traffic.

6.3.2. The following effects have been deemed not to be significant during Stage 1. Dust and particulate matter emissions.

- Exhaust emissions arising from construction plant equipment.
- Nitrogen oxides, nitrogen dioxide and particulate matter exhaust emissions.

6.3.3. It has been assumed any of the above effects will be mitigated through the implementation of a Construction Environmental Management Plan, which will include a qualitative construction risk assessment and Construction Dust Assessment, and the implementation of a Construction Traffic Management Plan and a Construction Worker Travel Plan.

6.4 Likely Stage 2 Effects

6.4.1. The main impacts during the construction of Unit Y in Stage 2 relate to dust generated during construction and exhaust emissions from construction plant equipment and construction traffic. As per Stage 2, the effects of construction are not deemed to be significant and will be mitigated through a Construction Environmental Management Plan and its associated documents, and the Construction Traffic Management Plan and Construction Worker Travel Plan.

6.4.2. The operation of Unit X during Stage 2 is associated with emissions to air from the new stacks as well as emissions from operational traffic. Potential impacts from operational emissions from Unit X have not been considered in isolation and have been assessed as part of Stage 3 below (being the worst case).

6.5 Likely Stage 3 Effects

6.5.1. Emissions to air from the operational Power Station Site have the potential to significantly affect sensitive human and ecological receptors due to increased exposure to air pollutants and pollutant deposition. To assess this, a quantitative assessment of emissions of nitrogen oxides, nitrogen dioxide, ammonia, carbon monoxide, sulphur dioxide, particulate matter (PM₁₀) and hydrogen chloride gas was undertaken.

6.5.2. Additionally, a quantitative assessment of potential cumulative effects from emissions of nitrogen oxides and ammonia from the Eggborough Power Station and Thorpe Marsh Power Station was also undertaken.

6.5.3. Potential impacts from emissions of carbon monoxide, sulphur dioxide, ammonia, particulate matter (PM₁₀) and hydrogen chloride gas are assessed to be not significant on residential receptors.

6.5.4. There is very low risk of exceedance of the air quality standards, whether long term or short term and no significant health effects are anticipated as a result of the Proposed Scheme.

6.5.5. The effects of the change in pollutant concentrations on ecological receptors from emissions of nitrogen oxides, nitrogen dioxide and ammonia is reported in Chapter 9 (Biodiversity) of the Environmental Statement. This is summarised in the section on Biodiversity below.

6.6 Likely Decommissioning Effects

6.6.1. The impacts during decommissioning are considered to mirror construction impacts.

- 6.6.2. No likely significant effects are anticipated with an appropriate decommissioning environmental management plan in place.

6.7 Conclusion

- 6.7.1. The effects of dust and particulate matter (PM₁₀) generated by construction activities following the application of the mitigation measures and good site practice are not considered to be significant.
- 6.7.2. There is a low risk of exceedance of air quality standards set for the protection of human health, therefore the effects of the operation of the Proposed Scheme on residential receptors are not predicted to be significant. This applies whether the Proposed Scheme is considered alone or in-combination with other projects.

7 NOISE AND VIBRATION

7.1 Introduction

- 7.1.1. The noise and vibration assessment identifies the likely significant effects of the Proposed Scheme on sensitive receptors at both residential and ecological locations. The baseline noise levels at the receptor locations have been informed by ambient noise surveys undertaken in 2013 and 2017 during both daytime and night time periods.
- 7.1.2. For noise and vibration, the predicted effects have been determined on the basis of the potential change from baseline levels as a result of the Proposed Scheme and the sensitivity of receptors. The construction noise and vibration assessments have used existing applicable standards to calculate the predicted levels of impact of the Proposed Scheme. The operational noise assessment has used a noise modelling software to assess the predicted levels and the results were compared to national standards for noise and vibration.

7.2 Likely Stage 0 Effects

- 7.2.1. The activities proposed during the Site Reconfiguration Works could lead to some degree of noise and vibration disturbance from demolition/construction works at the Power Station Site and short term construction traffic using the surrounding road network.
- 7.2.2. Following the application of standard mitigation measures including a Construction Environmental Management Plan, the Site Reconfiguration Works assessment has identified that noise and vibration from activities on the Power Station Site, and traffic using the surrounding road network are not significant, as such, no further mitigation and enhancement measures are required in addition to the existing standard mitigation measures.
- 7.2.3. The potential noise effects of the Proposed Scheme on ecological sensitive receptors are presented separately in Chapter 9 (Biodiversity) of the Environmental Statement. This is summarised in the section on Biodiversity below.

7.3 Likely Stage 1 Effects

- 7.3.1. Construction activity could lead to some degree of noise disturbance at receptors located close to the construction works and within the surrounding road network used by construction traffic. However, the noise disturbance is anticipated to be temporary. The construction activities for Stage 1 include the construction of Unit X, the Gas Pipeline, the Above Ground Installation, Gas Receiving Facility, the battery storage facility and the assessment also considers road traffic.
- 7.3.2. For all the construction activities associated with Unit X, no significant noise effects are predicted on residential sensitive receptors with the implementation of standard mitigation measures including a Construction Environmental Management Plan. The potential noise effects of the Proposed Scheme on ecological sensitive receptors are presented separately in Chapter 9 (Biodiversity) of the Environmental Statement, which is summarised in the section on Biodiversity below.

- 7.3.3. Vibration is likely to occur for a short period of the construction works due to the use of construction plant and equipment. However, these are not recognised as sources of high levels of vibration. The predicted vibration effects on sensitive receptors are not predicted to be significant with the implementation of standard mitigation measures.

7.4 Likely Stage 2 Effects

- 7.4.1. The noise assessment of the operation of Unit X and construction of Unit Y has identified significant effects at different sensitive receptor locations both during the daytime and night time. A review of the noise model has shown that the dominant noise levels are located at the stack terminations.
- 7.4.2. The noise assessment concluded that the potential effects are considered not significant during both daytime and night time after the implementation of mitigation measures such as acoustic attenuators at the stacks. The potential noise effects of the Proposed Scheme on ecological sensitive receptors are presented separately in Chapter 9 (Biodiversity) of the Environmental Statement, which is summarised in the section on Biodiversity below.
- 7.4.3. For vibration, the predicted level of impact will be imperceptible at the nearest sensitive receptor locations. Therefore, vibration impacts were scoped out of the Environmental Statement. It is considered that all equipment capable of generating significant vibrations (e.g. rotating plant items) will be seated on anti-vibration mounts to isolate mechanical vibration at source.

7.5 Likely Stage 3 Effects

- 7.5.1. Similarly to Stage 2, the operational noise assessment of the simultaneous operation of Unit X and Y has identified significant effects at different sensitive receptor locations during the daytime and night time. The noise model has shown that the dominant noise levels are located at the stack terminations.
- 7.5.2. The noise assessment concluded that the potential effects are considered not significant during both daytime and night time after the implementation of mitigation measures such as acoustic attenuators at the stacks. The potential noise effects of the Proposed Scheme on ecological sensitive receptors are presented separately in Chapter 9 (Biodiversity), which is summarised in the section on Biodiversity below.
- 7.5.3. For vibration, the predicted level of impact will be imperceptible at the nearest sensitive receptor locations as detailed in Section 7.4 above.

7.6 Likely Decommissioning Effects

- 7.6.1. During decommissioning, demolition plant and/or equipment items would be mobilised to demolish the power generation units and some of the installations located above ground. In general, these machines are not recognised as being a significant source of vibrations. It is assumed that the Gas Pipeline would be left in-situ.
- 7.6.2. The noise and vibration impacts of decommissioning will be similar to those that will be assessed for construction. The decommissioning phase assessment has identified that noise and vibration from activities on Site, and traffic using the surrounding road network are not predicted to have significant effects on residential sensitive receptors. As such, no

further mitigation and enhancement measures are required in addition to the existing standard mitigation measures.

- 7.6.3. The potential noise and vibration effects of the Proposed Scheme on ecological sensitive receptors are presented separately in Chapter 9 (Biodiversity) of the Environmental Statement, which is summarised in the section on Biodiversity below.

7.7 Conclusions

- 7.7.1. In summary, following the application of mitigation measures no significant effects have been identified on residential sensitive receptors during Stage 0, Stage 1, Stage 2, Stage 3 and decommissioning.

8 HISTORIC ENVIRONMENT

8.1 Introduction

- 8.1.1. The historic environment assessment identifies the likely significant effects the Proposed Scheme may have on Heritage Assets such as listed buildings, scheduled monuments and buried archaeological finds. The assessment has gathered information through a desk based study and surveys of the Site and its immediate surroundings.
- 8.1.2. A total of 509 Heritage Assets are present within 10 km of the Proposed Scheme. These Heritage Assets are comprised of 19 scheduled monuments, 11 Grade I listed buildings, 17 Grade II* listed buildings, 440 Grade II listed buildings, 13 conservation areas and nine Non-Designated Heritage Assets. These are shown in the Environmental Statement. One of the nine Non-Designated Heritage Assets lies on the Site Boundary and is a historical field boundary.

8.2 Likely Stage 0 Effects

- 8.2.1. The Site Reconfiguration Works will include the demolition, removal and relocation of existing facilities at the Existing Drax Power Station Complex. It is considered that there will be no significant impacts and effects on the setting of Heritage Assets or on Below-Ground Heritage Assets during this stage. This is due to the localised nature of the works within the curtilage of the Existing Drax Power Station Complex.

8.3 Likely Stage 1 Effects

- 8.3.1. Stage 1 may negatively impact the setting of Heritage Assets, particularly those closest to the Site including the scheduled monument of the Drax Augustinian Priory and Scurff Hall.
- 8.3.2. The Drax Augustinian Priory is located immediately north of the Existing Drax Power Station Complex. The presence of the Existing Drax Power Station Complex and associated development in the immediate area detracts from the understanding of the asset as an isolated priory set in a rural context.
- 8.3.3. During Stage 1, a proposed construction laydown and/or contractor car parking area will be located to the east of the asset. However, due to the temporary nature of the effect and the provision of screening through the retention of North Station Wood there are no significant effects on the setting of the asset predicted.
- 8.3.4. Scurff Hall Scheduled Monument is a 13th century moated manor house residing in a largely agricultural setting, and has a strong sense of tranquillity and seclusion. It is anticipated that during the construction period of the Gas Pipeline and the Above Ground Installation, construction could negatively affect the setting of the asset through increased construction related traffic, construction related noise, lighting and movement. Due to the temporary nature of the effect it is not predicted to be significant.
- 8.3.5. Archaeological evaluation trenching has been carried out at the location of the Above Ground Installation (at the start of the Gas Pipeline). This identified potentially significant below ground archaeological remains. It is anticipated that ground disturbance from the construction of the Gas Pipeline, Gas Receiving Facility and Above Ground Installation will

disturb similar assets of the same significance. Mitigation including a strip, map and record exercise has been proposed to prevent effects on buried heritage assets, resulting in no likely significant effects.

8.4 Likely Stage 2 Effects

- 8.4.1. The construction of Unit Y and the operation of Unit X during Stage 2 may negatively impact the setting of heritage assets due to the visibility of stacks and high level construction equipment. Due to the distance from the Site of the majority of assets listed above, no change in the setting of the assets is predicted during Stage 2.
- 8.4.2. The Drax Augustinian Priory is the closest asset to the Power Station Site where the works in Stage 2 will take place. The effects upon the setting of the Drax Augustinian Priory from the construction of Unit Y will be the same as for Stage 1.
- 8.4.3. During the operation of Unit X, the additional stacks that form part of the Proposed Scheme will create an unwanted visual distraction from the Drax Augustinian Priory. However, the North Station Wood and connecting woodland belt will provide screening. Therefore no significant effects are predicted.

8.5 Likely Stage 3 Effects

- 8.5.1. There will be little difference between the impact of the operation of Unit X in Stage 2 and the operation of Units X and Y in Stage 3 on the setting of heritage assets including the Drax Augustinian Priory. Therefore, there will be no significant effect on the setting of heritage assets.

8.6 Likely Decommissioning Effects

- 8.6.1. The removal of stacks would result in the reversal of any effects on setting incurred by the operation of Units X and Y and the effects of decommissioning activities would be temporary and similar to those described for the construction of Units X and Y.

8.7 Conclusion

- 8.7.1. In summary, following the application of mitigation, no significant effects are predicted on Above or Below Ground Heritage Assets.

9 BIODIVERSITY

9.1 Introduction

- 9.1.1. The biodiversity assessment has gathered information through a desk based study and surveys of the Site and its immediate surroundings.
- 9.1.2. The assessment has identified no designated sites for biodiversity within the Site. Ten sites designated as of international importance have been identified within 15 km of the Proposed Scheme, eight sites designated as of national importance have been identified within 5 km of the Proposed Scheme and four sites designated as of local importance have been identified within 2 km of the Proposed Scheme. These are shown in Environmental Statement Figures.
- 9.1.3. Habitats of importance consisting of ponds, woodland and hedgerows have been identified within the Site.
- 9.1.4. Signs of activity from species including bats, otters, wintering/breeding birds, water vole, reptiles and amphibians have been recorded on and adjacent to the Site.
- 9.1.5. The non-native and invasive plant, Himalayan Balsam and Cotoneaster has been recorded on the Power Station Site.

9.2 Likely Stage 0 Effects

- 9.2.1. The Site Reconfiguration Works will take place within a relatively limited part of the Power Station Site, and are confined largely to areas of existing buildings and hard-standing. These works will also be located in excess of 0.5 km from any designated site.
- 9.2.2. With mitigation measures including a Construction Environmental Management Plan in place to control noise, vibration and visual disturbance and to manage the risk of pollution incidents and other hydrological impacts, no perceptible impacts on adjacent habitats are expected.
- 9.2.3. Given the likely absence of invasive non-native plant species from these areas, no significant effects are predicted to arise.

9.3 Likely Stage 1 Effects

- 9.3.1. Stage 1 will result in the permanent and temporary loss of a proportion of the habitats within the Site Boundary, including a habitat of importance. This effect will be mitigated through the production of a Landscape and Biodiversity Strategy which will detail the areas to be retained and reinstated, along with compensation areas proposed to replace areas permanently lost. This will be secured through a requirement of the Development Consent Order.
- 9.3.2. Disturbance on foraging and commuting bats, otter, water vole, breeding birds and reptiles are predicted during Stage 1. To control the impact on biodiversity, best practice construction measures will be implemented through a Construction Environmental Management Plan. There are no predicted significant effects on these species following the implementation of these measures.

- 9.3.3. The non-native invasive plant species Himalayan Balsam and Cotoneaster, were recorded in the Power Station Site. Construction activities in and adjacent to the non-native invasive plant species could potentially result in their spread into areas they do not currently occupy. A non-native species management strategy will be devised (as part of the Landscape and Biodiversity Strategy) and will contain construction measures to prevent accidental spread. No significant effects resulting from the accidental spread of invasive species are predicted.

9.4 Likely Stage 2 Effects

- 9.4.1. Construction activities during Stage 2 would take place primarily across areas that will already have been cleared during Stage 1. It is therefore unlikely that these areas will support invasive non-native species and no significant effects resulting from the spread of non-native species are predicted.
- 9.4.2. However, due to Unit Y's more northerly location, certain similar habitats not impacted during the construction of Unit X would be lost or subject to disturbance as a result of the construction of Unit Y. As for Stage 1, this will be mitigated through a Landscape and Biodiversity Strategy.
- 9.4.3. Disturbance on foraging and commuting bats, breeding and wintering birds and reptiles are predicted due to the construction of Unit X in Stage 2. To control the impact on biodiversity, best practice construction measures will be implemented through a Construction Environmental Management Plan. There are no predicted significant effects on these species following the implementation of these measures.
- 9.4.4. The operation of Unit X will lead to emissions of gases to the air including nitrogen species, nitrogen oxides and ammonia; these have the potential to be deposited on sites designated for the importance of their biodiversity. This can raise nutrient nitrogen levels in the soil/water (a process known as eutrophication) leading to excessive growth of undesirable plants at the expense of rare or otherwise important plant and animal species. Operational emissions may also lead to acidification of designated sites' habitats, which can affect the condition of the habitats and the species they support. An assessment of emissions on designated sites has been undertaken and both with and without nitrogen oxides (air quality) abatement technology no significant effects on designated sites are predicted.

9.5 Likely Stage 3 Effects

- 9.5.1. No significant effects are predicted on protected species due to the operation of the Proposed Scheme.
- 9.5.2. The operation of both Unit X and Unit Y could have the same effects on designated sites as discussed in Stage 2 above. An assessment of emissions on designated sites has been undertaken and both with and without nitrogen oxides (air quality) abatement technology; no significant effects on designated sites are predicted.

9.6 Likely Decommissioning Effects

- 9.6.1. Detailed proposals for decommissioning works are not available, with these works not expected to take place until approximately 2045 at the earliest.

- 9.6.2. In line with the wider Environmental Statement, it is assumed that decommissioning works will be no greater in extent (and likely reduced in extent and duration) than construction (Stage 1).

9.7 Conclusions

- 9.7.1. In summary, following the application of mitigation, no significant effects on biodiversity are predicted.

10 LANDSCAPE AND VISUAL

10.1 Introduction

10.1.1. The landscape and visual assessment identifies the likely significant effects of the Proposed Scheme on landscape character, sensitive views and those who experience the views. The assessment considers the following categories of people who may experience changes to their views: users of buildings, users of recreational space and users of footpaths and transport routes.

10.1.2. The assessment gathered information through a desk based study and surveys of the Site and its immediate surroundings. It considers a study area of 10 km radius around the Site. This study area was decided on the basis of a combination of both professional judgment and discussions with the local planning authority.

10.1.3. The preliminary assessment describes the vegetation within the current landscape of the 10 km study area as characterised by small blocks of woodland with intermittent hedgerow. Power stations, pylons and wind farms are prominent features in the landscape. The study area includes small to medium sized villages and towns and residential properties and farms. Settlements within 10 km the Proposed Scheme include:

- Drax (south east of the Existing Drax Power Station Complex).
- Camblesforth (south / south west of the Existing Drax Power Station Complex).
- Carlton (south / south west of the Existing Drax Power Station Complex).
- Snaith, West Cowick, East Cowick and Moorends (south of the Existing Drax Power Station Complex).
- Barlow (north west of the Existing Drax Power Station Complex).
- Hemingbrough (north / north east of the Existing Drax Power Station Complex).
- Barmby on the Marsh, Asselby and Knedlington (north east of the Existing Drax Power Station Complex).
- Airmyn (east of the Existing Drax Power Station Complex).
- Howden (east of the Existing Drax Power Station Complex).

10.2 Likely Stage 0 Effects

10.2.1. Significant effects are predicted on local landscape character during Stage 0. These significant effects are the result of activities on-site including demolition, removal and relocation of existing facilities. During Stage 0 (as well as 1 and 2), best practice measures to control the effects on the landscape and views will be implemented through a Construction Environmental Management Plan.

10.2.2. The Stage 0 works would result in the loss of some ornamental vegetation (including trees, shrubs and hedgerows of varying condition) which serves an important function in providing low level screening and minimising the impact of visual clutter. A Landscape and Biodiversity Strategy will mitigate the loss of habitat within Stage 0 (as well as Stages 1 and 2).

10.3 Likely Stage 1 Effects

10.3.1. The construction impacts for Stage 1 and 2 are likely to include:

- Site clearance, removal of vegetation and topsoil stripping.
- Movement of construction related traffic, plant and machinery including the delivery of materials to and from the Site, off site road traffic including workers travelling to and from the Site.
- General construction activities including the movement of large scale construction equipment, creation of site compounds to include construction offices, warehouses, workshops, open air storage areas and car parking as well as Laydown Areas and the presence of temporary hoardings and signage.
- Presence of four cranes including two main cranes, a 200 tonne mobile crane and an offloading and positioning crane to assist in the large scale structures.
- Construction site lighting to illuminate site operation, in particular during the winter months.
- Construction of the Proposed Scheme including Units X and Y, battery storage facility, gas receiving facility, laying of the pipeline and the above ground installation, other smaller structures and associated infrastructure (including site hoarding) and construction laydown areas.

10.3.2. As a result of the above, significant effects are predicted on local landscape character during Stage 1. The mitigation measures discussed in Stage 0 will also mitigate the effects of Stage 1.

10.4 Likely Stage 2 Effects

10.4.1. There are significant effects on local landscape character, local landscape designations and visual amenity of surrounding visual receptors within and adjacent to the study area associated with the Stage 2 activities.

10.4.1. These significant effects result from Unit X and its associated stacks “jarring” with the Existing Drax Power Station Complex. Added to this, there will be a notable presence of temporary cranes associated with the construction of Unit Y, and construction vehicles and plant on or in close proximity to the Power Station Site generating associated noise and disturbance.

10.4.2. During Stage 2 there would be further temporary and permanent loss of land within the Existing Drax Power Station Complex and the continued temporary use of the Carbon capture readiness reserve space. This would result in the loss of landscape features not affected during Stage 0 and 1.

10.4.3. The mitigation measures discussed in Stage 0 will also mitigate the effects of construction in Stage 2.

10.5 Likely Stage 3 Effects

10.5.1. There are significant effects on landscape character, local landscape designations and visual amenity of surrounding visual receptors due to new built form and landscaping on operation resulting from the operation of Unit X and Unit Y.

10.5.2. The operation of Unit X and Unit Y would not result in any further permanent land take. Temporary construction laydowns / areas (including the carbon capture readiness reserve space) would be reinstated or used for enhancement mitigation. Mitigation in this stage will

involve the ongoing management and maintenance of the planting undertaken during earlier stages as part of the Landscape and Biodiversity Strategy.

10.6 Likely Decommissioning Effects

- 10.6.1. Significant effects are predicted for decommissioning. These effects will be temporary and similar for those associated with construction activities in Stage 1 and 2.
- 10.6.2. It is assumed that the demolition of structures would take place 25 years post commissioning of the Proposed Scheme by which time planting set out in the Landscape and Biodiversity Strategy would have matured.
- 10.6.3. It is possible that the decommissioning works could require the temporary clearance of some “recently” planted and existing vegetation within the Site. At this point in time it is unclear exactly which areas could be affected and hence which areas of planting.

10.7 Conclusions

- 10.7.1. In summary, significant effects are predicted on landscape character, local landscape designations and visual amenity as a result of the Proposed Scheme.

11 GROUND CONDITIONS AND CONTAMINATION

11.1 Introduction

- 11.1.1. A review of historical ground conditions and a site visit (November 2017) have been undertaken to understand the current conditions at the Power Station Site and the Pipeline Area, and surroundings. This information was also used to inform the ground conditions and contamination assessment.
- 11.1.2. Baseline information indicates that the majority of the Site Boundary and surroundings is underlain by silty clay, fluvial and wind-deposited sands. The areas north of the Power Station Site are underlain by clay, silt, sand and gravel. The area of the Proposed Scheme located closed to the River Ouse is also underlain by clay and silt. The presence of man-made ground is highly likely within the Site and surroundings.
- 11.1.3. The majority of the Site is non-agricultural land, however the surroundings of the Proposed Scheme comprise land which is considered to be suitable for agriculture, including within the Pipeline Area. The soil leaching potential is considered to be intermediate to high.
- 11.1.4. Sherwood Sandstone bedrock (a Principal Aquifer) lies below the surface sediment across the Power Station Site. Beneath this bedrock there are layers of sandstone and mudstone. Four aquifers are present within the study area and a groundwater abstraction point is used for agriculture purposes. The River Ouse is about 1.5km to the northeast of the Power Station Site and the area to the northwest of the Power Station Site experiences flooding.

11.2 Likely Stage 0 Effects

- 11.2.1. The history of the study area indicates the presence of possible ground contamination. During Stage 0 there is the potential for contaminant release the existing environment including soil, surface water and groundwater. This could affect the health of workers during the Stage 0 works.
- 11.2.2. A Construction Environmental Management Plan will be prepared for the Proposed Scheme as a requirement of the Development Consent Order. This will include procedures for the identification and mitigation of a contaminant risk associated with Stage 0 activities. In addition, a Soil Management Plan will be prepared (as part of the Construction Environmental Management Plan) to ensure that soil quality will be maintained or restored to pre-development conditions once the construction works are completed. Stage 0 will be implemented in line with best practice construction methods.
- 11.2.3. No significant effects are predicted during Stage 0 due to the application of the above mitigation measures.

11.3 Likely Stage 1 Effects

- 11.3.1. The effects predicted for Stage 1 are similar to those for Stage 0. No significant effects are predicted on ground conditions.
- 11.3.2. To further inform the measures to be included in the Construction Environmental Management Plan, further detail on the existing ground conditions will be obtained via a

ground investigation to be undertaken prior to the commencement of construction. This will be secured through the Development Consent Order.

11.4 Likely Stage 2 Effects

11.4.1. The effects predicted for the construction of Unit X in Stage 2 are similar to those for Stage 0 and 1. No significant effects are predicted on ground conditions.

11.4.2. During operation, there is the potential for contaminated surface water and groundwater to persist after construction. This has the potential to affect human health. However, these effects during the operation of Unit X are not anticipated to be significant and would be avoided or minimised through a combination of design and mitigation measures. Good management practices will also be implemented during operation, this will avoid the risks of soil and groundwater pollution in line with legislation, guidance and best practice.

11.5 Likely Stage 3 Effects

11.5.1. The Stages 3 effects will be similar to the operational Stage 2 effects discussed above. No significant effects are predicted on ground conditions during Stage 3.

11.6 Likely Decommissioning Effects

11.6.1. Decommissioning effects are predicted to be similar to those identified for construction (Stage 0 and Stage 1). No significant effects are predicted for decommissioning.

11.6.2. The works will proceed in accordance with a decommissioning environmental management plan. This will be informed by the ground investigation referred to above, and will include procedures for the identification and mitigation of contaminant risks associated with the decommissioning of the infrastructure.

11.7 Conclusions

11.7.1. In summary, no potential significant effects have been identified after the implementation of mitigation measures during the construction, operation and decommissioning stages of the Proposed Scheme.

12 WATER RESOURCE, QUALITY AND HYDROLOGY

12.1 Introduction

- 12.1.1. The Proposed Scheme has the potential to affect 19 surface water features, including two ponds. The Carr Dyke is culverted through the Power Station Site in an approximate south-west to north-east direction.
- 12.1.2. The watercourses crossed by the Gas Pipeline include the Willow Road Drain and Dickon Field Drain. The Gas Pipeline also passes within 0.1 km to the south of the River Ouse.
- 12.1.3. The majority of the bedrock is classified as a Principal Aquifer, and this area is known to provide a high level of water storage and may support water supply and/or river base flow on a strategic scale. The Environment Agency's groundwater map indicates that the superficial deposits are classified as Secondary A Aquifer, described as permeable layers capable of supporting water supplied at a local rather than a strategic scale.
- 12.1.4. The Proposed Scheme is located within a groundwater source protection zone. This area is defined around large and public potable groundwater abstraction sites and it aims to protect drinking water quality through containing the proximity of activity that may impact on drinking water abstraction.
- 12.1.5. The Proposed Scheme is located in an area of complex flood risk comprising Flood Zones 2 (land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding), 3 (land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%)) and in areas benefitting from flood defences. The source of this flood risk is the River Ouse and the watercourses located within the study area such as Carr Dyke.

12.2 Likely Stage 0 Effects

- 12.2.1. Site Reconfiguration Works will involve demolition activities that could have an impact on the water environment. There are three surface water features located approximately 100 m from the proposed demolition works which may be affected by dust or debris. Potential impacts on these water features will be largely mitigated by the Construction Environmental Management Plan, which includes air pollution measures to mitigate release of dust, and a Surface Water Drainage Scheme to manage drainage and flood risk, the Stage 0 Works are unlikely to affect the integrity of these watercourses.

12.3 Likely Stage 1 Effects

- 12.3.1. There is a risk of pollution to surface and groundwater features from increased sediment load associated with the Stage 1 works. This can result from the construction of temporary culverts, land clearance, excavation, dewatering of excavations, stockpiles, wheel washings and movement of materials to and from the Site. A Construction Environmental Management Plan including best practice measures will be implemented to reduce the effects on surface and groundwater features. Further, the surface water feature crossings of the Gas Pipeline will be constructed using trenchless crossing techniques where possible.

- 12.3.2. There is a risk of pollution to surface water and groundwater features from accidental spillages of oil, hydrocarbons and hazardous substances. The release of oils and hydrocarbons is typically caused by a larger number of vehicles accessing the site, refuelling of vehicles and plant, leakage from oil/fuel storage tanks and accidental spillages leading to polluted runoff migrating to surface water features. This will be mitigated through the Construction Environmental Management Plan.
- 12.3.3. There is the potential for the construction of the Gas Pipeline to cause disturbance to the subsurface water flows in the area. This will be managed through hydraulic control activities and a Surface Water Drainage Scheme.
- 12.3.4. The works will be undertaken in areas that are protected by flood defences up to the 1 in 200 annual probability flood event. Breach of the existing flood defences is very unlikely to happen as the flood defences are regularly checked and maintained by the Environment Agency to ensure they provide appropriate protection. The construction works also will be temporary. The works are therefore highly unlikely to increase the risk of flooding to the Power Station Site, construction workers, or people and properties elsewhere.

12.4 Likely Stage 2 Effects

- 12.4.1. The effects for the construction of Unit Y in Stage 2 are comparable to, and will be no worse than those set out above for Stage 1. Effects for the operation of Unit X in Stage 2 will be comparable to the effects sets out in Stage 3 below.

12.5 Likely Stage 3 Effects

- 12.5.1. The Proposed Scheme will increase the amount of impermeable area which will increase the rate and volume of surface water runoff generated in the Site, which could in turn increase the risk of flooding to the Power Station Site or people and properties elsewhere.
- 12.5.2. Surface water runoff from additional impermeable areas associated with the works will be discharged to existing drains. The Proposed Scheme is therefore not expected to increase flood risk to the Power Station Site or people and properties elsewhere.
- 12.5.3. As a result of the construction of the Proposed Scheme in accordance with a Surface Water Drainage Scheme and the continued operation of the existing drainage system, appropriate pollution prevention measures will be in place to manage the routine runoff from the Proposed Scheme, and it is therefore unlikely to impact the water quality.
- 12.5.4. The results of the hydraulic modelling exercise show localised minor increases in flood depth of less than 10 mm in Drax village. This is not considered to be a significant effect.
- 12.5.5. The proposed diversion of North Perimeter Ditch is likely to result in loss of the existing habitat. When the habitat has re-established in the diverted channel, no significant effects are predicted.

12.6 Likely Decommissioning Effects

- 12.6.1. The potential impacts to the water environment that could occur during decommissioning of the Proposed Scheme are considered similar as impacts that could occur during Stage 0 – Site Reconfiguration Works and Stage 1.

12.7 Conclusions

12.7.1. In summary there are not expected to be any significant effects on water resources, quality and hydrology.

13 WASTE

13.1 Introduction

- 13.1.1. An assessment of waste arising from the Proposed Scheme has been undertaken to assess the likelihood of significant effects. The assessment considers the baseline methodology, the baseline conditions at the Site and in the surrounding area, and any mitigation adopted.
- 13.1.2. Due to the nature of the Proposed Scheme, it is not envisaged that significant levels of waste will be generated during its operational life.
- 13.1.3. 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 Gas Pipeline. There is not considered to be any waste generated during the construction of the Gas Pipeline.
- 13.1.4. It is not envisaged that significant levels of hazardous waste will be generated during the demolition, construction and operational phases.

13.2 Likely Stage 0 Effects

- 13.2.1. Waste will be generated from the demolition of the buildings and structures. The specific quantities and types of demolition material will be quantified by pre-demolition audit that will be carried out when the buildings are unoccupied, therefore has not been determined at this stage. However, it has been assumed that the intention will be to reuse as much clean excavated material onsite as possible, Therefore the volume of material that will require removal from the Site is not expected to be significant.

13.3 Likely Stage 1 Effects

- 13.3.1. It is estimated that approximately 4,078tonnes of construction waste will be generated from Unit X and the battery storage area. Over the duration of the construction works, this equates to an average of approximately 1,439 tonnes per year.
- 13.3.2. No significant effects are predicted on local waste treatment and disposal facilities as the waste generated comprises none or negligible volumes of hazardous waste, or minor volumes of non-hazardous or inert waste and local waste facilities are unrestricted.

13.4 Likely Stage 2 Effects

- 13.4.1. Operational waste from the operation of Unit X has been scoped out of the assessment as it is not expected to generate more than a minor amount of waste.
- 13.4.2. It is estimated that approximately 3,293tonnes of construction waste will be generated from Unit Y. Over the duration of the construction works, this equates to an average of approximately 1,162 tonnes per year.
- 13.4.3. No significant effects are predicted on local waste treatment and disposal facilities as the waste generated comprises negligible volumes (if any) of hazardous waste, or minor volumes of non-hazardous or inert waste and local waste facilities are unrestricted.

13.5 Likely Stage 3 Effects

- 13.5.1. Operational waste has been scoped out of the assessment, as minimal waste will be generated, and therefore waste from the operation of Unit X and Unit Y has not been assessed within this section.

13.6 Likely Decommissioning Effects

- 13.6.1. The potential effects of the Proposed Scheme during decommissioning have not been assessed due to limited information available at this stage (e.g. type of waste, phasing of the works and availability of waste infrastructure in the long term). Decommissioning waste will be managed using a decommissioning and demolition strategy will optimise the recovery of machinery and plant. This strategy will be part of the decommissioning environmental management plan.

13.7 Conclusion

- 13.7.1. In summary, no significant effects are predicted in relation to waste as a result of the Proposed Scheme during construction and operation.

14 SOCIO-ECONOMICS

14.1 Introduction

14.1.1. An assessment of likely significant effects arising from the Proposed Scheme upon socio-economics was undertaken. The focus of the assessment was on employment opportunities and access and amenity value of Public Rights of Way.

14.2 Likely Stage 0 Effects

14.2.1. During Stage 0 there are potential significant effects associated with:

- Generation of direct employment opportunities.
- Generation of indirect and induced employment opportunities associated with spending in the economy by contractors and contracts placed with suppliers.

14.2.2. The Site Reconfiguration Works would generate direct and indirect employment opportunities at the local level and regional level. The Proposed Scheme is anticipated to create an average of 200 direct and 100 indirect jobs during this stage. This leads to a positive effect at the local level.

14.2.3. During demolition, specialist contractors will be required, however it is still assumed that the majority of employment opportunities will be taken up by those within Selby District Council and the East Riding of Yorkshire (as well as the wider region of Yorkshire and Humber). It is therefore anticipated that demand for educational and healthcare services, community facilities (including recreational/open space) and accommodation is not likely to be significant.

14.2.4. It is anticipated that security arrangements during the demolition and construction phases of the Proposed Scheme (Stages 0-2) will be in accordance with the requirements set out in the Construction (Design and Management) Regulations 2015 and appropriate levels of security will be provided. Therefore, effects related to crime are unlikely to be a significant.

14.3 Likely Stage 1 Effects

14.3.1. During Stage 1 there are potential significant beneficial effects associated with:

- Generation of direct employment opportunities.
- Generation of indirect and induced employment opportunities associated with spending in the economy by contractors and contracts placed with suppliers.
- Change in accessibility and amenity value of Public Rights of Way.

14.3.2. The general construction works would generate direct and indirect employment opportunities at the local level and regional level. The Proposed Scheme is anticipated to create an average of 1200 per year direct jobs and 600 indirect jobs during this stage. This leads to a positive effect at the local level.

14.3.3. During the construction stages specialist contractors will be required, however it is still assumed that the majority of employment opportunities will be taken up by those within Selby District Council and the East Riding of Yorkshire (as well as the wider region of Yorkshire and Humber).

14.3.4. The Proposed Scheme may change the accessibility and amenity value of the Public Rights of Way located near the Site. Specific measures will be secured by requirements in the Development Consent Order to mitigate this effect (e.g. temporary signage and diversion of public right of ways). Therefore, temporary disruption associated with the construction works is not expected to result in a significant effect.

14.3.5. Particularly during the Stage 1 and the construction of the Gas Pipeline, there is the potential for physical changes to the soil resources to occur. This includes compaction, sealing, smearing, and covering with hardstanding. During the construction phase (Stage 0, 1 and 2) a Soil Management Plan, part of the outline Construction Environmental Management Plan, will be implemented to manage these impacts. In addition, following construction of the Gas Pipeline, agricultural land required temporarily will be reinstated to its existing grade and condition. The long term impacts on agricultural land are considered to be negligible.

14.4 Likely Stage 2 Effects

14.4.1. During Stage 2 there are potential significant beneficial effects associated with the:

- Generation of direct employment opportunities.
- Generation of indirect and induced employment opportunities associated with spending in the economy by contractors and contracts placed with suppliers.

14.4.2. For the Public Rights of Way affected by construction in Stage 1, those Public Rights of Way will have been reopened along their existing alignment. There is the potential for the diversion of one Public Right of Way, however this would only be required in the event carbon capture storage equipment is provided in future. No significant effects in terms of accessibility and amenity value are anticipated.

14.4.3. The effects for Stage 2 are comparable to those set out above for Stage 0 and 1.

14.5 Likely Stage 3 Effects

14.5.1. During Stage 3 there are potential significant negative effects associated with the:

- Generation of direct employment opportunities.

14.5.2. During the operation of Units X and Y, there would be a limited reduction overall in staffing levels required for the ongoing operations at the Existing Drax Power Station Complex. These staff reductions are anticipated to be as a result of natural reductions (e.g. due to retirement) and where possible there would be redeployment. This is unlikely to be significant at the local or regional level.

14.5.3. There are not considered to be significant permanent changes to access to leisure/recreational facilities within the surrounding area due to traffic movements along the highway network during the operational phase.

14.5.4. For the Public Rights of Way affected by construction in stage 1, those Public Rights of Way will have been reopened along their existing alignment. There is the potential for the diversion of one Public Right of Way, however this would only be required in the event carbon capture storage equipment is provided in future. No significant effects in terms of accessibility and amenity value are anticipated.

14.6 Likely Decommissioning Effects

14.6.1. It is considered that the assessment of effects for Stage 0 (Site Reconfiguration Works) is comparable for decommissioning.

14.7 Conclusions

14.7.1. No significant negative effects are predicted as a result of the Proposed Scheme. The Proposed Scheme would have an overall positive impact on both the local and regional economy during construction (Stages 0, 1 and 2).

15 CLIMATE CHANGE

15.1 Introduction

15.1.1. An assessment of likely significant effects arising from the Proposed Scheme upon climate change was undertaken. The assessment considered the key sources of greenhouse gas emissions (which contribute to climate change) throughout the lifespan of the Proposed Scheme and the extent to which those emissions may increase or decrease in comparison to the evolving baseline conditions.

15.2 Likely Stage 0 Effects

15.2.1. The assessment of construction phase greenhouse gas emissions has been undertaken for Stage 0, Stage 1 and Stage 2 combined for this topic.

15.2.2. The construction phase will result in substantial greenhouse gas emissions particularly during the 'product stage' (emissions from manufacture and supply of construction materials such as concrete and steel) as well as 'construction process stage' (emissions from transport of these materials and the construction process). However, the re-use of existing infrastructure such as the cooling towers and steam turbines, does mean that the greenhouse gas emissions from construction are less than if the equivalent power generation capacity was constructed at a new Power Station Site.

15.2.3. It is not anticipated that significant emissions will result from land-use, land-use change and forestry since additional land take is minimal, and agricultural land use will be reinstated following construction of the Gas Pipeline.

15.3 Likely Stage 1 Effects

15.3.1. The construction effects for Stage 1 are comparable to those set out above for Stage 0.

15.4 Likely Stage 2 Effects

15.4.1. The construction effects for Stage 2 are comparable to those set out above for Stage 1.

15.4.2. The operational effects have been set out in section 15.5 only.

15.5 Likely Stage 3 Effects

15.5.1. Once the current generating units have been replaced with gas-powered units, the Proposed Scheme will generate electricity with a greenhouse gas intensity of 380 gCO₂e/kWh. This represents 55% less than the emissions intensity for current coal-fired.

15.5.2. Even after 2025, when it is assumed that carbon dioxide emissions reductions would be required for the existing coal-powered generation units to meet the Government's proposed limit of 450 gCO₂e/kWh, the Proposed Scheme would generate electricity of 16% lower greenhouse gas intensity.

15.5.3. In terms of the greenhouse gas emissions intensity per unit of electricity output, the Proposed Scheme is judged to provide a significant positive effect on climate compared with the baseline/do nothing scenario.

- 15.5.4. Although the Proposed Scheme generates much 'cleaner' electricity than the baseline scenario, it also increases generation capacity from 1,320 MW to 3,600 MW; a 173% increase.
- 15.5.5. For this reason, the total direct greenhouse gas emissions related to electricity generation at the Existing Drax Power Station Complex between 2020 and 2050 are 90% higher for the Proposed Scheme than the baseline scenario.
- 15.5.6. Focussing on the overall direct greenhouse gas emissions from generation of electricity at the Existing Drax Power Station Complex, the Proposed Scheme therefore results in a significant negative effect on climate. However, it must be remembered that the overall output is increasing by 173% from the baseline scenario. When comparing "like with like" (i.e. greenhouse gas emissions per KWh), the Proposed Scheme represents 55% less than the emissions intensity for current coal-fired.
- 15.5.7. The Proposed Scheme includes the protection of land for carbon capture and storage equipment, if that technology becomes feasible in the future. Requirements to the Development Consent Order will require the Applicant to safeguard that land and to report at regular intervals as to the viability of the carbon capture technology. The scheme therefore has the potential to capture and store carbon in the future, at which time the contribution of the Proposed Scheme to climate change could be reduced or avoided. This is in line with the National Policy Statements on fossil fuel generation.

15.6 Likely Decommissioning Effects

- 15.6.1. The generation of greenhouse gas emissions during decommissioning has not been assessed. There is little certainty surrounding the timing of this activity and the processes and emissions generating activity which will occur.
- 15.6.2. However, it is assumed that decommissioning emissions will be of the same order or smaller than those for the construction stage. Therefore it is not considered likely that they will be significant, particularly as a proportion of the whole lifecycle emissions for the Proposed Scheme.

15.7 Conclusions

- 15.7.1. The Proposed Scheme will result in substantial greenhouse gas emissions during construction, particularly during the 'product stage'. However, the Proposed Scheme will continue to utilise existing infrastructure such as the cooling towers and steam turbines, reducing the greenhouse gas emissions compared to the alternative of constructing equivalent power generation capacity at a new power station site.
- 15.7.2. In terms of the greenhouse gas emissions intensity per unit of electricity output, the Proposed Scheme results in a significant positive effect on climate. However, although the Proposed Scheme generates much 'cleaner' electricity than the baseline scenario, it also increases generation capacity by 173%, which results in a 90% increase in direct greenhouse gas emissions. However, when comparing "like with like" (i.e. greenhouse gas emissions per KWh), the Proposed Scheme represents 55% less than the emissions intensity for current coal-fired units.

16 MAJOR ACCIDENTS AND NATURAL DISASTERS

16.1 Introduction

16.1.1. The major accidents and natural disasters assessment reports on the potential vulnerability of the Proposed Scheme to major accident(s) and/or disaster(s). It outlines the potential for major accidents and/or disasters to impact on human health or the environment.

16.1.2. Features external to the Proposed Scheme that lie within the land required to construct the Proposed Scheme and/or cross the route of the Proposed Scheme that present a potential source of hazard, either during construction or operation include, but are not limited to:

- Oil, gas and electricity transmission.
- Potential presence of an unexploded ordnance.
- Former landfill sites and the potential presence of landfill gas.
- Adjacent highways, both local roads and motorways.

16.2 Likely Stage 0 Effects

16.2.1. The Site Reconfiguration Works (Stage 0) will be within the Existing Drax Power Station Complex. Therefore the risk events associated with Stage 0 will be controlled under the Control of Major Accident Hazards Regulations 2015 and Construction Design and Management Regulations 2015 to prevent any off-site impact.

16.2.2. Stage 0 is considered to have insignificant effects.

16.3 Likely Stage 1 Effects

16.3.1. Major accidents and/or disasters to which the Proposed Scheme may be vulnerable during the Gas Pipeline construction phase include:

- Striking of underground services/utilities.
- Increased road accidents due to additional road traffic.
- The discovery of an unexploded ordnance.
- Potential flooding.
- Contamination of groundwater during construction.
- Gas from ground contamination.
- Increased maintenance requirements as a result of settlement.
- Potential for terrorist attack.
- Damage to buildings or road infrastructure leading to injury of member of the public or workers.

16.3.2. Major accidents and/or disasters to which the Proposed Scheme may be vulnerable during the Power Station Site construction phase include:

- Increased road accidents due to additional road traffic.
- Damage to buildings or road infrastructure leading to injury of member of the public or workers.
- Electrocutation risk to personnel and / or members of the public.
- Injury to member of public.
- Release of contaminants onto land outside of the Proposed Scheme.

16.3.3. The risks outlined above could impact on an environmental receptor, and have the potential to lead to a major accident and/or disaster. However, the mitigation measure associated with each reduces the potential effects through management of the risks. Mitigation measures include those already detailed in Chapters 5 – 15 of the Environmental Statement as well as measures including the Applicants existing Major Accident Prevention Plan and a Pipeline Safety Report for the new Gas Pipeline. The residual effects are considered to be of negligible significance.

16.4 Likely Stage 2 Effects

16.4.1. The effects of the construction of the Power Station Site during Stage 2 are comparable to those construction phase effects set out above for Stage 1.

16.4.2. Major accidents and/or natural disasters to which the Proposed Scheme may be vulnerable during the Gas Pipeline operation and/or maintenance phase include:

- Loss of containment of gas leading to unconfined gas explosion.
- Risk to human health either from long term exposure from leakage which could lead to dangerous concentrations of methane building up within confined spaces, particularly residential property, Read School buildings and in agricultural buildings. To a lesser extent there is a theoretical risk to the general public using Public Rights of Way or farmers working on the land due to a sudden gas release to the atmosphere.

16.4.3. Major accidents and/or natural disasters to which the Proposed Scheme may be vulnerable during the power station operation and/or maintenance phase include:

- Potential for terrorist attack.

16.4.4. The risks outlined above could impact on an environmental receptor, and have the potential to lead to a major accidents and/or disaster. However, the mitigation measures (as detailed in Stage 1) associated with each reduces the potential effects through management of the risks. The residual effects are considered to be of negligible significance.

16.5 Likely Stage 3 Effects

16.5.1. The effects for Stage 3 are comparable to those operation and/or maintenance phase effects set out above for Stage 2.

16.6 Likely Decommissioning Effects

16.6.1. The effects from major accidents and disasters during decommissioning have not been assessed. There is little certainty surrounding the timing of this activity, and the processes associated with decommissioning.

16.6.2. However, it is assumed that decommissioning effects will be of the same order as those for the construction stage and therefore it is not considered likely that they will be significant.

16.7 Conclusions

16.7.1. Given the processes and measures that will be introduced to avoid and/or reduce the vulnerability of the Proposed Scheme to major accidents and/or disasters, it is considered that the risks of any such event occurring will be managed to be as low as reasonably practicable.

16.7.2. As a result, it is considered that there will not be any likely significant environmental effects arising from the vulnerability of the Proposed Scheme to major accidents and disasters.

17 CUMULATIVE AND COMBINED EFFECTS

17.1 Introduction

17.1.1. As part of the EIA Regulations 2017, the Environmental Statement is required to include a project-level assessment of potentially significant effects of the Proposed Scheme when considered cumulatively with “other developments”, and an assessment of the combination of all environmental effects of the Proposed Scheme on receptors. In particular, these assessments are looking to determine whether there will be new or greater significant effects (than the Proposed Scheme on its own, or than one type of effect on its own) as a result of (i) the Proposed Scheme and other projects being constructed or operated at the same time, or (ii) the combination of different effects from the Proposed Scheme all occurring together.

17.1.2. Combined and cumulative effects are defined as follows:

- **Combined effects** – the interaction and combination of environmental effects of the Proposed Scheme affecting the same receptor.
- **Cumulative effects** – the interaction and combination of environmental effects of the Proposed Scheme with other existing or approved project(s) (not yet constructed or operational) affecting the same receptor.

17.1.3. The Environmental Statement includes an assessment of cumulative and combined effects in accordance with applicable legislation and guidance, and this is presented in the Environmental Statement Volume 1: Main Report – Chapter 17.

17.2 Cumulative effects

17.2.1. The cumulative effects assessment has broadly followed a four stage approach (as recommended by the Planning Inspectorate in its Advice Note 17):

- Stage 1: identify the Zone of Influence and identify long list of “other developments”.
- Stage 2: identify short list of “other developments” for cumulative assessment.
- Stage 3: information gathering.
- Stage 4: assessment.

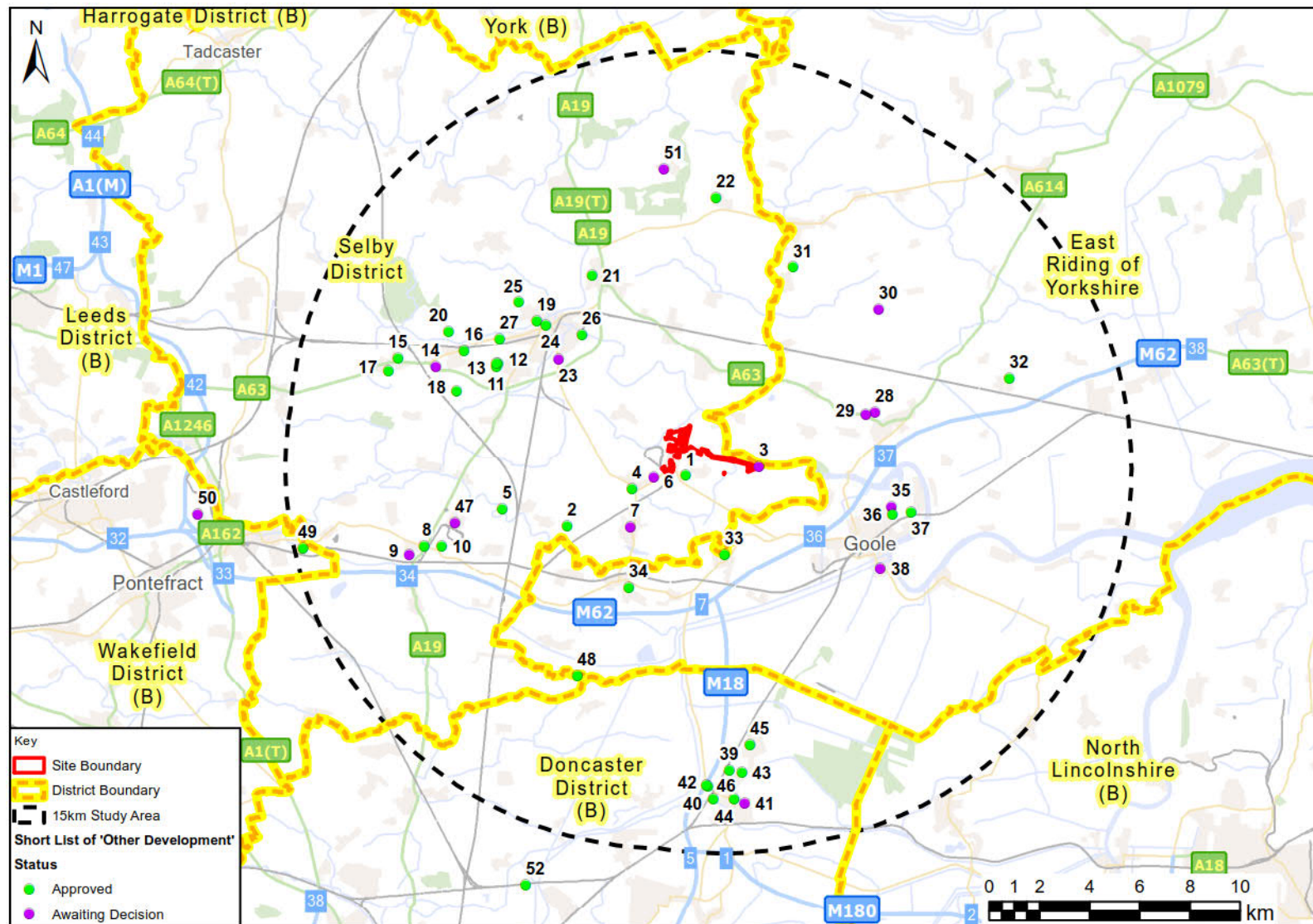
17.2.2. A ‘zone of influence’ (which is the study area within which the Proposed Scheme may have an impact) of up to 15 km from the Site was established based on the predicted extent of impacts associated with the Proposed Scheme. Each environmental topic had a different ZOI relative to their assessment requirements.

17.2.3. During the production of the Environmental Statement, “other developments” within the zone of influence were identified. This list of developments was assessed for their relevance to the cumulative assessment. This list was then refined to a ‘short list’ of 52 projects which are either permitted, approved, awaiting decision, or under examination but where there is sufficient material in the public domain to enable a meaningful assessment. The locations of the short list of “other developments” identified are shown on Figure 6.

17.2.4. Consultation with the local planning authorities and relevant statutory consultees has been undertaken to agree the short list of projects selected.

- 17.2.5. The potential for significant cumulative effects with these “other developments” was considered for all of the environmental topics based on available information.
- 17.2.6. Within the cumulative assessment, no significant cumulative effects have been identified for the following topics (assuming all proposed mitigation measures are implemented) as a result of the Proposed Scheme during the Stage 0, Stage 1, Stage 2, Stage 3 and Decommissioning:
- Traffic and Transport.
 - Air Quality.
 - Noise and Vibration.
 - Historic Environment.
 - Biodiversity.
 - Ground Conditions and Contamination.
 - Water Resource, Quality and Hydrology.
 - Waste.
 - Socio-Economics
 - Major Accidents and Disasters.
- 17.2.7. Potential significant cumulative effects have been identified within the cumulative assessment as a result of the Proposed Scheme during Stages 1, 2 3 and Decommissioning for landscape character and visual amenity. The landscape and visual assessment of cumulative effects has identified the potential for a number of temporary, medium and long term significant impacts during construction for residents and recreational users on PRow. A number of permanent significant effects have also been identified during operation on landscape receptors (residents and recreational users of the TPT and PRow). No significant effects on landscape and visual amenity are anticipated during Stage 0.
- 17.2.8. Cumulative effects are not considered under the topic of Climate as GHG emissions are not restricted to a geographical area and are considered on a national level.
- 17.2.9. No significant effects have been identified when considering combined effects for any in topic or across topic effects from within the Proposed Scheme itself.

Figure 6 - Location of the Short List of "Other Developments" Considered for the Cumulative Assessment



17.3 Combined effects

- 17.3.1. Combined effects have been assessed in order to identify any new or worse significant effects on receptors as a result of the combination of effects from the different environmental technical topics presented in the Environmental Statement during the Stage 0, Stage 1, Stage 2, Stage 3 and Decommissioning of the Proposed Scheme.
- 17.3.2. The combined effects assessment concludes that no significant effects are anticipated as a result of the Proposed Scheme.

18 SUMMARY AND CONCLUSIONS

18.1.1. The Environmental Statement presents the findings of the Environmental Impact Assessment process for the Proposed Scheme.

18.1.2. The majority of the Proposed Scheme is set within the Existing Drax Power Station Complex, and the proposed works have been designed to remain within the site itself or within close proximity to it. The Gas Pipeline route has been optimised to avoid sensitive environmental and social receptors identified during the environmental impact assessment process.

18.1.3. The Environmental Statement has assessed a number of environmental topics judged of importance and the following potential significant residual effects (i.e. after mitigation) have been found:

- Landscape and visual – potential temporary and long term adverse effects on the landscape character and sensitive views are predicted during construction and decommissioning. Potential long term adverse effects have been identified on the landscape character and a local landscape designated, and views during operation.
- Socio-economics – short term beneficial effects on the local and regional economy due to generation of construction employment.
- Traffic and transport – significant short term effects on vehicular delays and junction performance.
- Climate change – significant effects on greenhouse gas emissions due to operation (electricity generation) contribute to climate change.
- Water resource, quality and hydrology – significant effects are predicted resulting from Pollution from spillages of oils, hydrocarbons and hazardous substances and increased sediment load to nearby surface water features. However, these will be mitigated by the implementation of a Construction Environmental Management Plan and will be temporary during construction.

18.1.4. No likely significant residual effects have been identified for the following topics:

- Air quality – no significant effects on air quality are predicted during the construction phase. The new plant operation at the Power Station Site is unlikely to have significant impacts on air quality affecting human health.
- Noise and vibration – no significant construction noise effects are predicted on sensitive receptors. The operational noise is not predicted to be significant following the implementation of mitigation measures such as acoustic attenuators.
- Historic environment – no significant short term or long term effects are predicted on above ground heritage assets during construction, operation and decommissioning. No significant permanent effects on below ground assets during construction are predicted, following the implementation of mitigation measures such as strip, map and record.
- Biodiversity – no significant effects on sites designated for their biodiversity importance are currently predicted during construction. No significant effects are predicted on protected species during the construction or operation of the Proposed Scheme. No significant effects on designed sites during operation are predicted both with and without the application of air quality abatement technologies. No significant effects on accidental spread of invasive species are predicted.

- Landscape and visual - Operational effects of the gas pipeline are not predicted to be significant.
- Ground conditions and contamination – no significant short term or long term effects are predicted on soil, surface water and groundwater during construction, operation and decommissioning.
- Water resource, quality and hydrology - no significant long term effects are predicted on surface water and groundwater, and also in relation to flood risk during construction, operation and decommissioning.
- Waste – no significant short term effects are predicted as a result of waste generated during the construction phase.
- Major accidents and disasters – no significant effects associated with major accidents and disasters.

Cumulative Effects

- 18.1.1. The following chapters have identified that no significant cumulative effects are anticipated as a result of the Proposed Scheme:
- Chapter 5 (Traffic and Transport).
 - Chapter 7 (Noise and Vibration).
 - Chapter 8 (Historic Environment).
 - Chapter 9 (Biodiversity).
 - Chapter 11 (Ground Conditions and Contamination).
 - Chapter 12 (Water Resource, Quality and Hydrology).
- 18.1.2. The landscape and visual assessment of cumulative effects has identified the potential for a number of temporary significant impacts during construction for residents and recreational users on PRow. A number of permanent significant effects have also been identified during operation on landscape receptors (residents and recreational users of the TPT and PRow).
- 18.1.3. It is concluded that the Proposed Scheme in conjunction with any one of the “other developments” would not have a significant cumulative effect on waste disposal facilities in the region. However, should all of the other residential developments identified be constructed in conjunction, the collective volume of waste could have a significant adverse cumulative effect on waste treatment and disposal facilities in the region.
- 18.1.4. It is concluded that the Proposed Scheme in conjunction with any one of the “other developments” would not have a significant cumulative effect on direct, indirect and induced employment opportunities and the local economy. However, it is considered that there is likely to be a cumulative effect in relation to direct, indirect and induced employment opportunities during construction of greater positive significance than that concluded for the Proposed Scheme, although this cannot be quantified at this time.
- 18.1.5. Cumulative effects are not considered under the topic of Climate as GHG emissions are not restricted to a geographical area and are considered on a national level.
- 18.1.6. Cumulative effects are not considered under the topic of Major Accidents and Disasters as risk events are likely to be a one off event and are assessed in isolation.

Combined Effects

- 18.1.7. No significant effects have been identified when considering combined effects for any in topic or across topic effects from within the Proposed Scheme itself.