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18.0 SUSTAINABILITY AND CLIMATE CHANGE

18.1 Introduction

- 18.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the Proposed Development near Eggborough, North Yorkshire on sustainability and climate change.
- 18.1.2 The chapter considers national, regional and local policy guidance that promotes sustainability principles and addresses the impacts (and where appropriate proposed mitigation measures) of the Proposed Development.
- 18.1.3 It should be noted that this chapter addresses the in-combination effects of the key sustainability themes, due to the overlap between subject areas. Therefore many of the sustainability issues are also discussed within other specific chapters, due to overlap between subject areas, and relevant chapters are referenced where appropriate.
- 18.1.4 This chapter is supported by Appendix 18A: Carbon Assessment in ES Volume III.
- 18.1.5 A Combined Heat and Power (CHP) assessment (Application Document Ref. No. 5.7) and a Carbon Capture Readiness (CCR) study (Application Document Ref. No. 5.8) are also submitted as part of the DCO application.

18.2 Legislation and Planning Policy Context

Legislative Background

Climate Change Act 2008

- 18.2.2 A landmark piece of environmental legislation, the Climate Change Act 2008, sets a legally binding target for the UK to reduce its greenhouse gas emissions from 1990 levels by at least 80% by 2050. This overall target is supported by a system of binding five-year 'carbon budgets' as well as an independent body to monitor progress, the Committee on Climate Change.

Planning our electric future: a White Paper for secure, affordable and low carbon electricity, 2011

- 18.2.3 This White Paper (Department for Energy and Climate Change (DECC), 2011) identifies a number of 'unprecedented' challenges to power generation in the UK including a threat to security of supply as existing coal-fired power stations close, decarbonisation of electricity generation, likely rise in electricity demand, and expected rise in electricity prices. A strategy has been put forward and includes the introduction of an Emissions Performance Standard (EPS) for UK power generation proposed to be set as an annual limit equivalent to 450 grams of carbon dioxide (CO₂) per kilowatt hour at baseload.

Planning Policy Context

National Policy Statements for Energy

- 18.2.4 National Policy Statement (NPS) EN-1 (DECC, 2016a) emphasises the importance of a diverse mix of energy generating technologies, including renewables, nuclear and fossil fuels, to avoid

over-dependence on a single fuel type and so ensure a more secure energy supply. The policy states that developers should consider opportunities for CHP and that all commercial scale (at or over 300 MW) fossil fuelled generating stations have to be 'carbon capture ready'.

- 18.2.5 NPS EN-2 (DECC, 2016b) covers fossil fuel generating stations and the impacts specifically associated with these types of power generation, including land use, transport infrastructure, water resources and grid connection. Carbon capture readiness and CHP criteria are provided in this NPS.

Local Planning Policy

- 18.2.6 The Selby District Core Strategy Local Plan, adopted in 2013 (Selby District Council, 2013), provides a spatial vision for Selby District with strategic objectives and a development strategy. The Core Strategy policies replace a number of the policies set out within the Selby District Local Plan (2005).

- 18.2.7 The primary aims of the Core Strategy include the promotion of sustainable development, considering sustainable land use, the economy, energy efficiency and reducing carbon dioxide (CO₂) emissions. The Strategy requires all development to incorporate sustainable development principles, looking at sustainable construction for example with low carbon design, considering drainage systems. The Strategy recognises that the existing Drax and Eggborough power stations are important to providing energy to the country and states that *"clean coal technologies/ CCS [carbon capture and storage] will be generally supported in line with national policy, where appropriate alongside other lower carbon schemes and environmental improvement schemes at the District's power stations"*.

18.3 Assessment Methodology and Significance Criteria

Impact Assessment and Significance Criteria

- 18.3.1 There is no standard methodology for assessing the magnitude of sustainability impacts and significance of effects of proposed developments. Each project is evaluated according to its individual characteristics. The approach taken is to systematically and qualitatively consider the Proposed Development against relevant key sustainability themes and policy objectives. Measures are outlined, where feasible, that will be considered for implementation to incorporate and improve sustainability within the design and management. This is considered to be appropriate for the likely types of impact that may result from the Proposed Development.
- 18.3.2 The sustainability assessment provides a mechanism for considering the sustainability of the project as a whole and for integrating sustainability considerations throughout the lifecycle of the Proposed Development. It summarises the features and attributes of the Proposed Development that will contribute to or affect each of the sustainability themes, and sets out actions which could be taken during the design, construction and operation that would further assist in delivering sustainability benefits for the local and wider area.

Key Parameters for Assessment

- 18.3.3 The Rochdale Envelope (i.e. the maximum parameters for the Proposed Development and in particular its main buildings and structures) does not affect the assessments presented in this chapter in that the variations in building dimensions or technology presented in Chapter 4: The

Proposed Development are unlikely to affect the outcomes of the sustainability assessment. Therefore, no further discussion of the Rochdale Envelope parameters is provided in this chapter.

Extent of Study Area

- 18.3.4 The sustainability assessment covers the Site plus the likely effects on the surrounding local environment.

Sources of Information/Data

- 18.3.5 Many of the sustainability issues are discussed within other specific chapters, due to overlap between subject areas, and therefore chapters are referenced below as relevant.

Consultation

- 18.3.6 No specific consultation has been undertaken and no specific EIA Scoping responses or Stage 2 (PEI Report) consultation responses have been received in relation to Sustainability, although environmental benefit and energy security were recognised as key themes from the Stage 1 consultation feedback.
- 18.3.7 The EIA Scoping Opinion (see Appendix 1B (ES Volume III)) asks for clear reference to the sustainability criteria that the assessment of sustainability and climate change is made against. The Scoping Opinion highlights the need to cross-reference other sections of the report where sustainability principles are considered. The 'likely impacts and effects' section and the 'mitigation and enhancement measures' section of this chapter reference the sustainability criteria that the development has been assessed against. Other chapters have been cross-referenced where relevant.

Summary of Key Changes to Chapter 18 since Publication of the Preliminary Environmental Information (PEI) Report

- 18.3.8 The PEI Report was published for statutory consultation in January 2017, allowing consultees the opportunity to provide informed comment on the Proposed Development, the assessment process and preliminary findings through a consultation process prior to the finalisation of this ES.
- 18.3.9 The key changes since the PEI Report was published are summarised in Table 18.1 below.

Table 18.1: Summary of key changes to Chapter 17 since publication of the PEI Report

Summary of change since PEI Report	Reason for change	Summary of change to chapter text in the ES
The findings of the Carbon Assessment have been included in the chapter (and the full report added in Appendix 18A), which was previously outstanding	Carbon Assessment completed.	Additional text added regarding operational effects.

Summary of change since PEI Report	Reason for change	Summary of change to chapter text in the ES
at PEI stage.		

18.4 Baseline Conditions

Existing Baseline

- 18.4.1 A description of the existing Site is provided in Chapter 3: Description of the Site. The Proposed Development will replace the existing coal-fired power station site at Eggborough, and CCGT technology is a more efficient method of electricity production.
- 18.4.2 This chapter summarises and assesses the findings of a number of other assessments within the ES. Baseline information can be found in the relevant chapters referenced throughout this assessment.

Future Baseline

- 18.4.3 Climate change has the potential to impact on the future baseline conditions; for example, increased incidences of heavy and prolonged rainfall could increase flood risk from surface water, groundwater and drainage systems.
- 18.4.4 The existing coal-fired power station is anticipated to cease operation by the end of 2019.

18.5 Development Design and Impact Avoidance

- 18.5.1 The development design is based on Best Available Techniques (BAT) for CCGT plants, which act to minimise impacts on air quality, emissions, and energy and water use. Section 18.6 describes the specific sustainability impact avoidance measures incorporated into the design alongside the likely impacts associated with each stage of the development.

18.6 Likely Impacts and Effects

Construction

Reducing the Use of Natural Resources in Construction Materials

- 18.6.2 The selection of materials for the construction of the Proposed Development has been informed by sustainability principles, including the prudent and efficient use of natural resources and the use of re-used and recycled materials. A primary principle of sustainable procurement is to question the need/ requirement for the commodity in question.
- 18.6.3 To minimise the use of natural resources and unnecessary materials procured for the Proposed Development, suitable infrastructure already associated with the existing coal-fired power station will be re-used where possible; for example, the Site access routes, internal roadways and existing gatehouse. Consideration is also being given to use of the existing rail infrastructure at the Site for delivery of construction materials. Re-using existing structures reduces the need for additional raw materials.

- 18.6.4 A Construction Environmental Management Plan (CEMP) will be prepared prior to commencing construction works on-Site in accordance with a draft DCO Requirement; this will identify all best practice procedures, including environmental best practice such as the processing and re-use of all recovered materials onsite where practical. A framework CEMP has been prepared as part of this ES to support the DCO application (Appendix 5A in ES Volume III).
- 18.6.5 Following implementation of the above design measures, the Proposed Development is expected to result in no significant adverse effects due to the use of natural resources in construction materials.

Minimising Use of Greenfield land

- 18.6.6 The Proposed Power Plant Site is situated within the existing coal-fired power station site, avoiding the use of 'greenfield' land.
- 18.6.7 'Greenfield' land will be required for the Proposed Gas Connection to the National Grid gas transmission network to the north, but as the pipeline will be below ground the only permanent land-take of 'greenfield' land will be at the site of the Proposed Above Ground Installation (AGI) at the connection point. The use of 'greenfield' land for the Proposed Gas Connection and AGI is unavoidable as the Proposed Development requires a connection to the National Grid gas transmission network, and the permanent above ground structures resulting in a permanent change in land use are limited to the AGI compounds. In addition, the Proposed Gas Connection route has been designed to be as short and direct as possible to minimise impacts on greenfield land.
- 18.6.8 The Proposed Development is considered to result in **no significant adverse effects** with regards the use of 'greenfield' land. Effects on land use and agriculture are assessed in Chapter 15: Land Use, Agriculture and Socio-Economics.

Flood Protection and Water Quality

- 18.6.9 Chapter 11: Water Resources, Flood Risk and Drainage of this ES sets out the conclusions of the Flood Risk Assessment (FRA) (which is included at Appendix 11A (ES Volume III), as well as water quality impacts.
- 18.6.10 The FRA for the Proposed Development concludes that development of the Site will not increase the risk of flooding from fluvial, groundwater or overland flow sources. The Proposed Power Plant Site, CCR Land and most of the Proposed Construction Laydown area are at low risk of flooding, but the northern part of the Proposed Construction Laydown area and parts of the Proposed Gas Connection corridor are at high risk of flooding.
- 18.6.11 Chapter 11: Water Resources, Flood Risk and Drainage states that site staff will be trained on procedures and guidance, including pollution plans, to reduce the risk of water pollution during the proposed construction works. It will be a contractual requirement of the contractor to ensure that runoff from the Site does not cause pollution or flooding. An Outline Drainage Strategy is set out in Annex 5 of the FRA (Appendix 11A – ES Volume III). Construction drainage details will be developed in consultation with the Environment Agency prior to construction commencing.

- 18.6.12 Flood resilience measures will be incorporated into the Proposed Development to minimise damage and reduce recovery time. Measures have been identified for inclusion at construction stage to protect the Proposed Development in the event of flooding during operation – see the Operation section below for further details.
- 18.6.13 Following implementation of the above design measures, the likelihood of water contamination is low. Potential impacts on water quality, water supply, recreation and biodiversity in the water environment are found to be of low magnitude with **minor or negligible adverse effects (not significant)** (see Chapter 11: Water Resources, Flood Risk and Drainage, and also consideration of groundwater impacts in Chapter 12: Geology, Hydrogeology and Land Contamination). The only exception is a possible **moderate adverse (significant)** short term effect on flood risk during lower return period flood events whilst temporary cofferdams are installed in the River Aire.

Waste Management

- 18.6.14 Chapter 17: Waste Management summarises the assessment of impacts and effects from the Proposed Development and details of measures to minimise waste generation and follow the waste hierarchy. A Site Waste Management Plan (SWMP) will be developed as part of the CEMP to control site activities and minimise environmental impacts. Contractors will be encouraged to adopt good practice to minimise construction waste and waste streams will be separated on-site and monitored. A framework SWMP forms part of the framework CEMP which has been prepared as part of this ES to support the DCO application (Appendix 5A in ES Volume III).
- 18.6.15 Following implementation of the above design measures, the Proposed Development is not expected to result in **minor adverse (not significant)** waste effects (see Chapter 17: Waste Management).

Transport

- 18.6.16 The traffic and transport assessment is considered in Chapter 14: Traffic and Transportation and is supported by a Transport Assessment (Appendix 14A (ES Volume III)). The air quality and noise assessments in Chapter 8: Air Quality and 9: Noise and Vibration also consider how transport affects air quality and noise receptors.
- 18.6.17 Chapter 14: Traffic and Transportation confirms that the change in total traffic associated with the Proposed Development is lower than the very low impact threshold of 30% on the A19, although the change on Wand Lane is greater than 90% (high impact) as currently this road has low levels of traffic. Additionally, the traffic increases from the construction of the Proposed Gas Connection have been assessed to be **minor/ negligible adverse (not significant)**. Overall there are not predicted to be any significant effects on traffic and transportation.
- 18.6.18 During the construction phase, Eggborough Power Limited (EPL) (the Applicant) will apply the following mitigation measures to manage construction traffic:
- a Construction Worker Travel Plan (CWTP) will be prepared prior to construction to identify measures and procedures to reduce single-occupancy car use and encourage more sustainable forms of transport (a framework CWTP has been prepared as part of this ES to support the DCO application (Appendix 14A, Annex AB in ES Volume III)); and

- a Construction Traffic Management Plan (CTMP) will be prepared to identify measures to control the routing and impact that HGVs will have on the local road network during construction, for example to route HGVs to arrive and depart the site towards the M62 to avoid the local villages of Chapel Haddlesey and Burn where possible (a framework CTMP has been prepared as part of this ES to support the DCO application (Appendix 14A, Annex AC in ES Volume III)).

Biodiversity/ Ecology

- 18.6.19 Chapter 10: Ecology and Nature Conservation considers the potential impacts and associated effects of the Proposed Development on ecological receptors. Surveys have identified bats, great crested newt, badger, otter, fish, reptiles and nesting birds are (or may be) present within the study area (see Chapter 10: Ecology and Nature Conservation for the definition of the study area for each ecological receptor, which range from 250 m from the Site for ponds to beyond 10 km for statutory designated nature conservation sites). All of these species are considered to be ecologically important at a Local level, with the exception of great crested newt which is considered to have District value.
- 18.6.20 There are also a number of habitats with Local value within the study area – semi-natural broadleaved woodland, plantation woodland, a water storage lagoon and a pond (both within the existing coal-fired power station site), Ings and Tetherings Drain, the River Aire and hedgerows.
- 18.6.21 A range of impact avoidance measures are set out in Chapter 10: Ecology and Nature Conservation including:
- good environmental protection practice during construction to prevent surface and ground water pollution, dust and noise pollution, implemented through a CEMP;
 - measures to protect fish welfare during the draw-down of the lagoon;
 - the installation and subsequent removal of temporary cofferdams required to enable construction works at the cooling water abstraction and discharge points will be completed outside of the main salmonid migratory period (October to December inclusive) to minimise potential impacts on migrating fish;
 - inclusion of appropriate fish screens on the water intake from the River Aire;
 - minimisation of land take from semi-natural habitats, including minimising the loss of trees within the existing coal-fired power station site;
 - use of directional drilling to construct the Proposed Gas Connection beneath the River Aire and location of Proposed Cooling Water Connections at the existing intake and outfall locations to reduce impacts on the river;
 - silt control measures (silt curtains) during the cofferdam construction to help reduce silt disturbance in the river;
 - measures to prevent obstructing the movement of otters along Ings and Tetherings Drain at night will be applied at the construction compounds at the Drain;
 - avoidance of trees and hedgerows along the Proposed Gas Connection corridor where possible and reinstatement where this is not possible;
 - reinstatement of habitats facing temporary disturbance during construction;
 - positioning of the Proposed AGI to avoid impacts on great crested newt associated with a breeding pond identified by surveys ;
 - precautionary methods during construction of the Proposed Cooling Water and Gas Connections to avoid impacts on grass snakes;

- clearance of vegetation outside the bird breeding season where possible (or appropriate checks prior to clearance where this is not possible); and
- reinstatement of habitats subject to temporary disturbance during construction.

18.6.22 An Indicative Landscape and Biodiversity Strategy has been prepared to support the DCO application (Application Document Ref. No. 5.10), including setting out biodiversity enhancement and management prescriptions.

18.6.23 **No significant effects** on ecological receptors are predicted.

Job Creation

18.6.24 As well as environmental demands, sustainable development also considers the social and economic demands. The Proposed Development will result in the creation of jobs during the site enabling, construction, operation and decommissioning phases. It is expected to provide around 1,200 temporary jobs at the peak of the construction period, resulting in a **major beneficial effect (significant)**. Further details of socio-economic impacts are presented in Chapter 15: Land Use, Agriculture and Socio-Economics.

Operation

Carbon Footprint

18.6.25 A Carbon Assessment report has been prepared and is included as Appendix 18A (ES Volume III).

18.6.26 The indicative operational annual carbon footprint of the Proposed Development has been calculated using the Greenhouse Gas Protocol (World Resources Institute and World Business Council for Sustainable Development, 2005), which provides a methodology for calculating the carbon footprint of a project.

18.6.27 The total annual carbon footprint of the Proposed Development is between 6,591 kilotonnes and 6,752 kilotonnes CO₂e (rounded to the nearest thousand tonnes). Assuming the Proposed Development exports 17,502 GWh per year (based on 7,884 operating hours with net output of 2,201 MWe, plus peaking plant for 299 MWe and 500 hours) this is equivalent to between 377 and 386 tonnes CO₂e per GWh electricity generation (for all emission scopes).

18.6.28 The Proposed Development will outperform the existing coal-fired power station and the average UK power station and UK gas-fired power station average scope 1 emissions intensity. Based on average carbon intensity data for scope 1 emissions only (i.e. natural gas combustion, see Appendix 18A for further details), the scope 1 emissions (tonnes of CO₂e emitted) from an average UK gas-fired power station with the same capacity as the Proposed Development would be 6,791 kilotonnes CO₂e (rounded to the nearest thousand tonnes). The scope 1 emissions annual carbon footprint of the Proposed Development is between 5,802 kilotonnes and 5,944 kilotonnes CO₂e. This is a saving of between 847 kilotonnes and 988 kilotonnes CO₂e compared to an average UK gas-fired power station.

Minimising Use of Water

18.6.29 The Proposed Development incorporates a number of measures to conserve water during operation, which increases the Proposed Development's resilience to future temperature rises

and potential droughts as a result of climate change. These may include re-use of rainwater, use of borehole water in preference to towns water, potential re-use of cooled boiler blowdown water and potential re-use of firewater (after treatment if required).

- 18.6.30 The cooling water demand of the Proposed Development will be significantly less than the cooling water demand of the existing coal-fired power station (less than half) due to the increased efficiency of the CCGT plant, therefore **no significant effects** are anticipated.

Flood Protection and Water Quality

- 18.6.31 Chapter 11: Water Resources, Flood Risk and Drainage sets out the conclusions of the Flood Risk Assessment (FRA) (which is included at Appendix 11A (ES Volume III) as well as measures to minimise water pollution. The FRA concludes that development of the Site will not increase the risk of flooding from fluvial, groundwater or overland flow sources.

- 18.6.32 The operators Environmental Management System (EMS) will include impact avoidance measures such as accidental pollution plans and provision of spillage kits, containment measures such as bunds.

- 18.6.33 An Outline Drainage Strategy has been produced as part of the FRA (Annex 5 of Appendix 11A – ES Volume III), this will be developed through detailed design and will incorporate features such as:

- Greenfield runoff rate restriction for surface water discharge from the Proposed Development achieved by on-site attenuation of surface water runoff;
- use of oil interceptors where appropriate; and
- use of SuDS techniques including swales, permeable paving and soakaways to attenuate flow of water will be considered at the detailed design stage.

- 18.6.34 Flood resilience measures will be incorporated into the Proposed Development to minimise damage and reduce recovery time. Consideration has been given to the effect of climate change on river levels, with placement of main plant and flood sensitive equipment above the River Aire 1 in 100 year flood level an allowance for climate change. Flood proofing measures such as resistant building materials and emergency response procedures have also been identified as possible options for inclusion, subject to detailed design.

- 18.6.35 Following implementation of the above design measures, the likelihood of water contamination during operation of the Proposed Development is low. Potential impacts on water quality, water supply, recreation and biodiversity in the water environment are found to be of low magnitude with **minor adverse or negligible effects (not significant)** (see Chapter 11: Water Resources, Flood Risk and Drainage).

Energy Efficiency

- 18.6.36 The design of the Proposed Development is based on BAT for CCGT plants. Modern CCGT power stations have an electrical efficiency of more than 60% which is considerably higher than the conventional coal, biomass, or oil-fired plant. The Carbon Assessment (Appendix 18A in ES Volume III) has been modelled for between 60.5% and 62% thermal efficiency.

18.6.37 Elements of the plant's design that will help achieve this efficiency include:

- modern design following current best practices in optimising efficiency;
- high gas turbine combustion temperatures;
- triple pressure HRSGs;
- hybrid cooling towers instead of air cooled condensers;
- high efficiency motors will reduce parasitic loads;
- plant components sized appropriately for the design capacity of the plant;
- where possible variable speed drives will be included on all sizeable motors (such as boiler feed pumps and cooling water pumps) will reduce parasitic loads;
- plant to be designed to be CHP ready, to enable the use of heat from the plant and thus increase efficiency further; and
- insulation of hot surfaces.

18.6.38 The plant will also be subject to regular planned maintenance in order to optimise the efficiency of the equipment on-site.

18.6.39 Following implementation of the above design measures, the Proposed Development is expected to result in **no significant effects**.

Air Quality

18.6.40 The Proposed Development will comply with the European Industrial Emissions Directive (IED) (European Commission, 2010). This means minimisation of the impact of emissions to air, soil, surface and ground water, to the environment and human health.

18.6.41 Chapter 8: Air Quality assesses the effect of emissions from the Proposed Development as negligible for most receptors, with the worst affected receptor being assessed as **minor adverse (not significant)**. No significant effects on soil, surface water or groundwater are identified in Chapters 11: Water Resources, Flood Risk and Drainage and 12: Geology, Hydrogeology and Land Contamination.

Waste Reduction

18.6.42 Waste producers have a legal duty of care to manage their waste in accordance with the Waste Regulations (2011). Chapter 17: Waste Management includes good practice measures to mitigate local impacts on water resources, air quality, noise or traffic resulting from waste management activities.

18.6.43 During operation, the amount of waste that will be generated is anticipated to be very small (mainly from office and maintenance activities). This is especially in contrast to the existing coal-fired power station as the combustion of gas does not generate any solid residues that require disposal. The quantity of waste, and therefore the overall effect, is expected to be **negligible adverse (not significant)** when compared to the predicted waste arisings within the Minerals and Waste Joint Plan (North Yorkshire County Council, the City of York Council and North York Moors National Park Authority, 2016) area (see Chapter 17: Waste Management). Waste transport during operation has been accounted for in the Carbon Assessment (Appendix 18A, ES Volume III).

Transport

- 18.6.44 The traffic and transport assessment is set out in Chapter 14: Traffic and Transportation and is supported by a Transport Assessment (Appendix 14A (ES Volume III)).
- 18.6.45 Chapter 14: Traffic and Transportation confirms that once operational there will be approximately 40 full-time staff working shifts and 30 corporate staff working normal office hours, which is conservatively estimated at 140 vehicle movements per day and deliveries are accounted for as maximum 4 HGVs per day. These traffic flows are considered very low and therefore during operation the overall effects are expected to be **negligible adverse (not significant)**.

Biodiversity/ Ecology

- 18.6.46 Chapter 10: Ecology and Nature Conservation considers that there are **no significant** operational effects predicted and therefore there is no requirement for mitigation.

Job Creation

- 18.6.47 As well as environmental demands, sustainable development also considers the social and economic demands. As described above in relation to transport, the Proposed Development is anticipated to support around 70 full-time permanent jobs during operation. Temporary and contractor employees associated with maintenance activities will also be employed at the Site as required.

Decommissioning

- 18.6.48 EPL will provide a Decommissioning Environmental Management Plan (DEMP) prior to the commencement of decommissioning works, setting out measures to manage potential environmental impacts associated with decommissioning and demolition of the Proposed Development.

Water Use

- 18.6.49 EPL will endeavour to minimise water use of the decommissioning process. **No significant** water demand is anticipated and the effects are unlikely to be significant.

Energy Use

- 18.6.50 EPL will endeavour to maximise energy efficiency of the decommissioning process. **No significant** effects are anticipated.

Waste Reduction

- 18.6.51 The waste hierarchy will be followed and it is anticipated that a large proportion of the materials resulting from the demolition will be re-used or recycled. A record will be kept to demonstrate that the maximum level of recycling and reuse has been achieved. However, at this stage there is no certainty on the timing or method of decommissioning and hence it is not possible to determine the effects at present (see Chapter 17: Waste Management).

Transport

- 18.6.52 The traffic and transport assessment is set out in Chapter 14: Traffic and Transportation supported by a Transport Assessment at Appendix 14A (ES Volume III). Traffic movements are expected to be associated with decommissioning; these are currently not known in detail but are expected to be no greater than those predicted for the construction period. It is considered that the overall effects of traffic in decommissioning would therefore be **negligible adverse (not significant)**.

Biodiversity/ Ecology

- 18.6.53 Chapter 10: Ecology and Nature Conservation considers that there are **no significant effects** predicted as a result of decommissioning. An ecological walkover will be undertaken to inform the development of the DEMP, and any necessary ecological mitigation measures.

Water Quality and Flood Risk

- 18.6.54 The DEMP will include identification of measures to prevent water pollution during decommissioning. Chapter 11: Water Resources, Flood Risk and Drainage finds that decommissioning impacts are expected to be limited to watercourses/ groundwater bodies in close proximity to the Site and will therefore result in **minor adverse or negligible effects (not significant)**.

18.7 Mitigation and Enhancement Measures

- 18.7.1 In addition to any potential impacts of the Proposed Development on climate change, climate change also has the potential to impact on the design and operation of the Proposed Development. Consequently, adaptation to climate change concerns how the Proposed Development avoids or reduces its exposure to the effects of future climate change, such as increased temperatures and flood risk.
- 18.7.2 EPL is committed to reducing their environmental impact and have an environmental policy with key policy principles around:
- integration of environmental factors into strategy;
 - compliance with requirements;
 - continuous improvement and review and reporting of environmental performance; and
 - prevention and control of pollution; plus training and recognition for effective environmental management.
- 18.7.3 The design, construction and operation of the Proposed Development will seek to mitigate the causes of climate change by contributing to reducing greenhouse gas emissions and adapting to the predicted impacts of climate change.
- 18.7.4 An Indicative Landscape and Biodiversity Strategy has been prepared (Application Document Ref. No. 5.10) which outlines the biodiversity mitigation measures, enhancement proposals and habitat management prescriptions that will help increase the resiliency of the ecosystem and animals that rely on it to the effects of climate change.
- 18.7.5 A CHP Readiness Assessment has been undertaken (Application Document Ref. No. 5.7). This assessment considers potential heat users within the local area (a 15 km radius) and the

technical suitability of connecting these potential users to a district heating system, developing a preferred most feasible option. There are a range of potential CHP opportunities within a 15 km radius of the Proposed Development, and the Proposed Development will incorporate features allowing future implementation of CHP (*i.e.* being designed and built to be CHP Ready).

- 18.7.6 A CCR study has been prepared as part of the DCO application (Application Document Ref. No. 5.8). NPS EN-1 (DECC, 2016a) requires relevant power stations (such as the Proposed Development) to set aside land such that the Proposed Development can be retrofitted with carbon capture and storage (CCS) equipment at some point in the future if the technology becomes technically and economically viable.

18.8 Limitations or Difficulties

- 18.8.1 No significant limitations or difficulties have been encountered during the preparation of this assessment.

18.9 Residual Effects and Conclusions

- 18.9.1 The Proposed Development has several characteristics incorporated into its design, construction and management which meet the key sustainability requirements as set out in national, regional and local policy.
- 18.9.2 The design, construction and operation of the Proposed Development will seek to mitigate the causes of climate change by contributing to reducing greenhouse gas emissions associated with waste disposal and electricity generation and adapting to the predicted impacts of climate change. The Proposed Development will provide a low carbon source of electricity. The Carbon Assessment (Appendix 18A – ES Volume III) demonstrates that the Proposed Development compares favourably with the existing coal-fired power station, and with UK gas fired power stations, with annual scope 1 carbon savings against a UK average gas fired power station of between 847 and 988 kilotonnes CO₂e.
- 18.9.3 There is also potential for the Proposed Development to incorporate CHP (the plant is designed to be CHP ready) in the future. This would represent further carbon savings as heat from the Proposed Development could be reused by other local developments, reducing the need for grid electricity or gas.
- 18.9.4 In addition, design and operational measures to increase the resilience of the Proposed Development to potential effects of climate change will be incorporated in the detailed design, including flood resilience measures.
- 18.9.5 No significant effects have been identified.

18.10 References

Department for Energy and Climate Change (2011) *Planning our electric future: a White Paper for secure, affordable and low carbon electricity.*

Department for Energy and Climate Change (2015) *2014 UK Greenhouse Gas Emissions, Provisional Figures (March 2015).*

Department for Energy and Climate Change (2016a) *Overarching National Policy Statement (NPS) for Energy (EN-1)*.

Department for Energy and Climate Change (2016b) *National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2)*.

European Commission (2010) Directive 2010/75/EU on industrial emissions.

Selby District Council (2005) *Selby District Local Plan*.

Selby District Council (2013) *Selby District Core Strategy Local Plan*.

World Resources Institute and the World Business Council for Sustainable Development (2005) *Greenhouse Gas Protocol for Project Accounting*.