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2.0 ASSESSMENT METHODOLOGY

2.1 General Assessment Approach

2.1.1 This Environmental Statement (ES) has been prepared to satisfy the requirements of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) ('the 2009 EIA Regulations') (see Chapter 1: Introduction, Section 1.5 and Table 1.1).

2.1.2 In preparing this ES (in line with the 2009 EIA Regulations as it forms part of the EIA process), reference has been made to the following guidance:

- Planning Inspectorate Advice Note 3: EIA Consultation and Notification (Planning Inspectorate, 2015a);
- Planning Inspectorate Advice Note 7: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping (Planning Inspectorate, 2015b);
- Planning Inspectorate Advice Note 9: Rochdale Envelope (Planning Inspectorate, 2012); and
- Planning Inspectorate Advice Note 17: Cumulative Effects Assessment (Planning Inspectorate, 2015c).

2.1.3 Reference has also been made to the Scoping Opinion received from the Secretary of State (SoS) dated September 2016 (Appendix 1B (ES Volume III)) and the advice contained within it regarding assessment methodology, topics and presentation of the ES, and also to the responses received through consultation.

2.1.4 In response to the Scoping Opinion, the EIA and this ES include assessments of the following environmental topics:

- air quality;
- noise and vibration;
- ecology and nature conservation;
- water resources, flood risk and drainage;
- geology, hydrogeology and land contamination;
- cultural heritage;
- traffic and transportation;
- land use, agriculture and socio-economics;
- landscape and visual amenity;
- waste management;
- sustainability and climate change;
- human health; and
- cumulative and combined effects.

2.1.5 The EIA Scoping Report (Appendix 1A (ES Volume III)) concluded that a number of topics did not need to be considered as part of the EIA for the Proposed Development and could be scoped out. These topics and (where relevant) the response in the Scoping Opinion are described below.

Aviation

2.1.6 The Civil Aviation Association (CAA) has a general interest in charting all known structures of 91.4 m (300 feet) or more above ground level. The existing coal-fired power station stack is 198.5 m in height, and the existing cooling towers are 114 m in height. The existing stack has lighting at the top for aviation purposes.

2.1.7 Given the distance of the Proposed Development's tallest structures (stack(s) at 90 m above ground level) from the nearest airfield (Burn (Selby) Airfield, approximately 4 km to the north-east of the stack(s)), and the height of the tallest structures, an assessment of the potential impacts of the Proposed Development on aviation is not required, and aviation has been scoped out of the EIA.

2.1.8 The CAA has been formally consulted on the Proposed Development but has not provided any comments to date. EPL proposes to install aviation lighting on the proposed CCGT stack if necessary, which could be operational when the existing coal-fired power station cooling towers and stack have been demolished and the proposed CCGT stack becomes the tallest structure at the Eggborough Power Station site (at 90 m above ground level). The draft DCO (Application Document Ref. No. 2.1) includes a Requirement securing any necessary aviation warning lighting.

Electronic Interference

2.1.9 The EIA Scoping Report noted that the proposed maximum building heights and expected temporary construction cranes will be no higher than the existing stack associated with the existing power station, which is 198.5 m in height. Therefore an assessment of the Proposed Development's effect on electronic interference was not considered to be required.

2.1.10 Further to this, most analogue signals have ceased to be transmitted and have been replaced by digital signals. As such, the Proposed Development's potential to interfere with television, radio (both analogue and digital) and mobile phone reception is considered negligible.

2.1.11 As requested by the SoS in the EIA Scoping Opinion (Appendix 1B (ES Volume III)), further technical consideration has been given since the publication of the EIA Scoping Report (and PEI Report) to the potential for electronic interference and relevant parties have been formally consulted on the Proposed Development (see Consultation Report – Application Document Ref. No. 5.1).

2.1.12 Ofcom guidance 'Tall structures and their impact on broadcast and other wireless services' (Ofcom, 2009) states that "*Problems are more likely to occur if a building or structure is constructed which is significantly taller than those around it, or is on high ground*" and that the 'shadow' (interference) caused by a tall structure between a transmitter and receiver disappears 1-5 km away from the tall structure.

2.1.13 There are a number of telecommunications transmitters within 5 km of the Proposed Power Plant Site, as follows (www.mastdata.com):

- BT transmitter on West Lane in Burn approximately 4.4 km to the north of the Proposed Power Plant Site;
- 3 transmitter east of Fox Lane approximately 2.4 km to the north of the Proposed Power Plant Site;

- T Mobile transmitter approximately 1 km to the north of the Proposed Power Plant Site (between Ings and Tetherings Drain and the River Aire);
- Vodafone transmitter north of Temple Hirst approximately 2.5 km to the north-east of the Proposed Power Plant Site;
- Network Rail transmitter north of Little Heck approximately 2.4 km to the east of the Proposed Power Plant Site;
- Vodafone and CTIL transmitters south of Gowdall approximately 4.5 km to the east of the Proposed Power Plant Site;
- EE and 3 transmitters south-east of Little Heck approximately 3.6 km to the south-east of the Proposed Power Plant Site;
- Airwave transmitter north of Great Heck approximately 2.8 km to the south-east of the Proposed Power Plant Site;
- Orange and Vodafone transmitters north of Great Heck approximately 2.5 km to the south-east of the Proposed Power Plant Site;
- 3 transmitter east of the A19 approximately 4.5 km to the south of the Proposed Power Plant Site;
- BT transmitter in Eggborough approximately 1 km to the south-west of the Proposed Power Plant Site; and
- 3, T Mobile, Orange, Vodafone and O2 transmitters south of Eggborough approximately 1.8 km south-west of the Proposed Power Plant Site;

2.1.14 However the Proposed Development will not introduce new buildings or structures that are significantly taller than those around it, given that the tallest structure associated with the Proposed Development is the CCGT stacks (c. 90 m above ground) and the existing coal-fired power station cooling towers are 114 m high and the existing stack is 198.5 m high.

2.1.15 Relevant telecommunications companies have been formally consulted on the Proposed Development through formal consultation and none have raised concern about electronic interference.

2.1.16 On the basis of the above, it is therefore concluded that there is no potential for significant electronic interference effects as a result of the Proposed Development.

Accidental Events/ Health & Safety

2.1.17 The majority of emergency response plans and contingency measures will be dealt with in the Environmental Permit, which is required for the operation of the Proposed Development, and which is granted and regulated by the Environment Agency (EA). Any accidents associated with hazardous materials storage and use will also be separately considered as part of any Hazardous Substances Consent or lower tier Control of Major Accident Hazards (COMAH) licence, should they be required. However, the potential for impacts of air emissions on human health and discharges or spillages to controlled waters on and off Site (where Site refers to the Proposed Development Site) have been considered as part of the EIA (see Chapter 8: Air Quality, Chapter 11: Flood Risk, Hydrology and Water Resources, and Chapter 12: Geology, Hydrogeology and Contaminated Land).

Environmental Statement

2.1.18 The ES summarises the outcomes of the following EIA activities:

- establishing the baseline conditions;
- consultation with statutory and non-statutory consultees;
- consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to EIA;
- consideration of technical standards for the development of significance criteria and specialist assessment methodologies;
- design review;
- review of secondary information, previous environmental studies, publicly available information and databases;
- expert opinion;
- physical surveys and monitoring;
- desk-top studies;
- modelling and calculations; and
- reference to current guidance.

2.1.19 These activities enable the prediction of impacts in relation to the baseline, and assessment of the significance of effects on environmental receptors. The term 'impact' refers to changes arising from the Proposed Development, whereas the term 'effect' is used to describe the result of the impact on a receptor.

2.1.20 Each technical chapter follows the same structure for ease of reference, as follows (more information on these is provided below where appropriate):

- Introduction;
- Legislation and Planning Policy Context;
- Assessment Methodology and Significance Criteria;
- Baseline Conditions;
- Development Design and Impact Avoidance;
- Likely Impacts and Effects;
- Mitigation and Enhancement Measures;
- Limitations or Difficulties;
- Residual Effects and Conclusions; and
- References.

2.2 Spatial Scope: Geographical Area

2.2.1 The assessment chapters of this ES (Chapters 8 to 20) describe as necessary their spatial scope including their rationale for determining the specific area within which the assessment is focussed. The study areas are a function of the nature of the impacts and the locations of potentially affected environmental resources or receptors.

2.3 Temporal Scope: Assessment Years

2.3.1 The approach to assessment has been to assess the environmental impacts of the Proposed Development at key stages in its construction and operation/ use and, where possible, decommissioning.

2.3.2 The 'existing baseline' date is 2016/2017 since this is the period in which the baseline studies for the EIA were undertaken. 'Future baseline' conditions are also predicted for each assessment scenario, whereby the conditions anticipated to prevail at a certain point in the future (assuming the Proposed Development does not progress) are identified for comparison with the predicted conditions with the Proposed Development.

2.3.3 The assessment scenarios that are being considered for the purposes of the EIA (and considered in this ES) are as follows:

- Existing Baseline (2016/17, no Proposed Development), the years that the baseline data has been collected;
- Future Baseline (2019-2022, 2022, 2037 and 2047, no Proposed Development), for comparison respectively with the Construction, Opening, Operation, and Decommissioning scenarios listed below;
- Construction (2019-2022, with Proposed Development), where necessary, particular chapters identify the relevant period or 'peak' of activity within the three year construction programme;
- Opening (2022) and/or Operation (2037) (each with Proposed Development), where Opening represents the start of operation and Operation represents a future operational year fifteen years after opening; and
- Decommissioning (2047 with Proposed Development).

2.3.4 In the majority of cases these are 'self-selecting' as they simply reflect the anticipated dates on or periods within which certain activities are predicted to take place. The one date which is not self-selecting and which has been chosen using professional judgment is Operation (2037) – this date is principally required for the landscape and visual assessment, as explained below and in Chapter 16: Landscape and Visual Amenity.

2.4 Definition of Existing and Future Baseline (Including Consideration of Demolition of Existing Coal-Fired Power Station)

2.4.1 Existing baseline conditions have been defined for each technical assessment topic in Chapters 8 to 20, based on desk-based studies and site surveys. As described above, it is also important to consider future baseline conditions (in the absence of the Proposed Development) against which the effects of the Proposed Development can be assessed.

2.4.2 The existing coal-fired power station is anticipated to cease generation between 2017 and 2019, and demolition is anticipated to take approximately three years (with the earliest anticipated start in 2018), so it is likely that the demolition of the existing coal-fired power station will take place at the same time as construction of the Proposed Development and/or the start of the Proposed Development's operational phase. It is important to note that the Proposed Development can be constructed without requiring the decommissioning or demolition of the existing coal-fired power station (with the exception of the removal of some ancillary structures) and as such the Proposed Development is separate to the decommissioning and demolition works. However there is potential for effects associated with decommissioning and demolition to interact with the effects of construction and operation of the Proposed Development (i.e. for the effects of the two projects to be cumulative). Given that both the demolition of the coal-fired power station and construction and operation of the CCGT Project are taking place within the same site that is currently within the control of Eggborough Power Limited (EPL) (the Applicant), these cumulative effects are being addressed

as part of the main assessment for each environmental topic (within Chapters 8 to 19), rather than in Chapter 20: Cumulative and Combined Effects.

2.4.3 Given the uncertainty regarding the timescales of decommissioning and demolition, it has been necessary to make assumptions about these for the purposes of assessment. These assumptions have been carefully considered in order to ensure a reasonable 'worst case' scenario is assessed. The approach taken for each of the assessment topics for which the status of the existing coal-fired power station is relevant is summarised below, and discussed further in the relevant technical chapters.

- Landscape and visual amenity:
  - Construction phase (2019-2022) – the landscape and visual assessment assumes that demolition of the existing coal-fired power station is underway, but that the existing coal-fired power station's major structures and buildings are still standing;
  - Opening year (2022) – the landscape and visual assessment assumes the coal-fired power station could still be standing, given the timings outlined above; and
  - Operation (2037) – the landscape and visual assessment assumes that the coal-fired power station has been fully demolished (with the exception of the existing 400 kV National Grid sub station which forms part of the National Grid electricity network), and that the Proposed Development is present in the absence of the coal-fired power station.
- Air quality:
  - Construction phase (2019-2022) – the air quality assessment assumes that demolition of the coal-fired power station is underway, and therefore considers the air quality and dust effects of demolition of the coal-fired power station and construction of the Proposed Development occurring simultaneously (a 'worst case' scenario for assessment of traffic air quality effects and dust generation);
  - Opening year (2022) – the existing baseline air quality data for the area will include contributions from the coal-fired power station's emissions, and there is no robust method for removing existing emissions from ambient air quality data. The opening year assessment therefore considers a 'worst case' scenario for air quality whereby the emissions from the Proposed Development are added to the existing background pollutant concentrations (which themselves include contributions from the existing coal-fired power station); and
  - Operation (2037) – this is not being considered as a scenario within the air quality assessment because the opening year scenario is the worst case (as described above) and because ambient air quality is gradually improving across the UK on an annual basis, so the predicted environmental concentrations of pollutants are predicted to reduce over time.
- Noise and vibration:
  - Construction phase (2019-2022) – the noise and vibration assessment assumes that demolition is underway, and therefore considers the noise and vibration effects of the demolition of the existing coal-fired power station and construction of the Proposed Development occurring simultaneously;

- Opening year (2022) – the noise and vibration assessment assumes demolition may still be ongoing, and therefore considers the noise and vibration effects of demolition of the existing coal-fired power station and operation of the Proposed Development occurring simultaneously; and
- Operation (2037) – the noise and vibration assessment assumes that the existing coal-fired power station is no longer present, so the Operation scenario considers the noise and vibration effects of the Proposed Development's operation only.

- Traffic and transportation:

  - Construction phase (2019-2022) – the transport assessment assumes demolition of the existing coal-fired station and construction of the Proposed Development are occurring at the same time, and therefore considers the peak traffic generation associated with each occurring simultaneously;
  - Opening year (2022) – the transport assessment assumes demolition may still be ongoing, so the Opening scenario considers the peak traffic generation associated with demolition of the existing coal-fired power station and traffic associated with the operation of the Proposed Development occurring simultaneously; and
  - Operation (2022) – the transport assessment assumes the existing coal-fired power station is no longer present, so the Operation scenario considers the traffic effects of the Proposed Development's operation only (note 2022 is used for the transport assessment of operational effects without concurrent demolition of the existing coal-fired power station, rather than 2037 as in other technical assessment chapters, because an earlier year is a worst case in traffic terms as lower base flows mean the impact of the Proposed Development would comprise a greater percentage change).

2.5 Development Design, Impact Avoidance and Mitigation

2.5.1 The design process for the Proposed Development has been heavily influenced by the findings of early environmental appraisals and the EIA process, and therefore the Proposed Development has been sited, and has had a number of measures incorporated into the concept design, to avoid or minimise impacts. The key aspects where the design has evolved are described in Chapter 6: Need, Alternatives and Design Evolution. In addition, each technical chapter sets out specific measures that have been incorporated into the design of the Proposed Development to avoid or minimise impacts, and any industry standard impact avoidance measures that will be implemented. These include compliance with best practice guidance documents (*e.g.* Environment Agency pollution prevention guidelines). The initial assessment has been undertaken on the basis of these measures being implemented (*i.e.* they are 'embedded mitigation').

2.5.2 Implementation of the impact avoidance and minimisation measures relied on in the assessment will be secured through the DCO, either through the setting of limits of deviation (*e.g.* specific Above Ordinance Datum (AOD) heights and fixed grid references for emission points) or through DCO Requirements in relation to mitigation measures.

2.5.3 Once the likely effects have been identified and quantified, consideration has then been given to any further mitigation (over and above anything identified within the Development Design and Impact Avoidance sections of each technical chapter) that may be required to mitigate any significant adverse effects identified. The residual effects (after the implementation of

mitigation) have then been assessed and presented in each technical chapter. Significant residual effects are also summarised in Chapter 21: Summary of Significant Effects.

2.6 Impact Assessment Methodology and Significance Criteria

2.6.1 Impacts are defined as changes arising from the Proposed Development, and consideration of the result of these impacts on environmental receptors enables the identification of associated effects, and their classification (major, moderate, minor and negligible, and adverse, neutral or beneficial). Each effect has been classified both before and after mitigation measures have been applied. Effects after mitigation are referred to as 'residual effects'.

2.6.2 The classification of effects is undertaken with due regard to the following:

- extent (local, regional or national) and magnitude of the impact;
- effect duration (whether short, medium or long-term);
- effect nature (whether direct or indirect, reversible or irreversible);
- whether the effects occur in isolation, are cumulative or interactive;
- performance against environmental quality standards and in the context of relevant legislation, standards and accepted criteria;
- number of receptors affected;
- sensitivity of receptors;
- compatibility with environmental policies; and
- professional experience and judgement of the assessor.

2.6.3 Further details are provided in each technical assessment chapter.

2.6.4 Where it has not been possible to quantify effects, qualitative assessments have been carried out, based on available knowledge and professional judgment. Where any uncertainty exists, this has been noted in the relevant technical chapter in the Limitations section.

2.6.5 To enable comparison between technical topics and aid understanding of the EIA findings, standard terms are used wherever possible to classify effects throughout the ES (major, moderate, minor and negligible), and effects are also described as being adverse, neutral or beneficial. Where the quality standards for each technical discipline result in deviations in the standard assessment methodology, these are described in the relevant chapters as applicable.

2.6.6 Definitions of the standard terms are provided below:

- negligible – imperceptible effects to an environmental resource or receptor;
- minor – slight, very short or highly localised effect;
- moderate – limited effect (by extent, duration or magnitude);
- major – considerable effect (by extent, duration or magnitude) of more than local scale or in breach of recognised acceptability, legislation, policy or standards;
- adverse – detrimental or negative effects to an environmental resource or receptor;
- neutral – effects to an environmental resource or receptor that are neither advantageous or detrimental; and
- beneficial – advantageous or positive effect to an environmental resource or receptor.

2.6.7 Moderate and major effects are generally considered to be 'significant' for the purposes of the 2009 EIA Regulations, in accordance with standard EIA practice.

2.6.8 Each of the technical chapters provides further description and definition of the assessment criteria relevant to each topic. Where possible, this has been based upon quantitative and accepted criteria (for example, noise assessment guidelines), together with the use of value judgement and expert interpretation to classify effects.

2.6.9 In general, the classification of an effect is based on the magnitude of the impact and sensitivity or importance of the receptor, using the matrix shown at Table 2.1. Where there are deviations away from this matrix (due to the technical guidance for a specific assessment topic), this is highlighted within the relevant technical chapter and the reason for the variation explained.

Table 2.1: Classification of effects

Magnitude of impact	Sensitivity/ importance of receptor			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very low	Minor	Negligible	Negligible	Negligible

2.6.10 In the context of the Proposed Development, short term effects are considered to be those associated with the construction phase and which cease when construction works are completed; long term effects are those associated with the completed, operational development and which last for the duration of the operational phase. Effects may also be permanent (irreversible) or temporary (reversible) and direct or indirect.

2.6.11 Effects on areas on the scale of the North Yorkshire County or Selby District (or similar scale, even if they occur across local authority boundaries) are considered to be at a regional level, whilst effects that cover different parts of the country, or England as a whole, are considered to be at a national level. Smaller scale effects are considered to be at a local level.

2.6.12 There are no significant transboundary effects associated with the Proposed Development.

2.7 Cumulative and Combined Effects

2.7.1 As required by the 2009 EIA Regulations, the various technical chapters also consider the inter-relationships of effects, also sometimes referred to as combined effects (those that could be caused by various impacts of the Proposed Development acting in combination such as noise and dust impacts acting together at a single receptor). In particular these are considered in Chapter 10: Ecology and Nature Conservation, which considers the combined effects of noise, air quality, habitat loss, disturbance etc. on ecological receptors; Chapter 18: Sustainability and Climate Change; and Chapter 19: Human Health, and summarised in Chapter 20: Cumulative and Combined Effects.

2.7.2 In addition to combined effects, it is important to consider the potential for cumulative effects with other developments planned or consented in the vicinity of the Proposed Development. These issues are further explained and discussed in Chapter 20: Cumulative and Combined Effects.

2.8 References

Ofcom (2009) *Tall structures and their impact on broadcast and other wireless services*

Planning Inspectorate (2012) *Advice Note 9: Rochdale Envelope.* Version 2, republished April 2012.

Planning Inspectorate (2015a) *Advice Note 3: EIA Consultation and Notification.* Version 6, published June 2015.

Planning Inspectorate (2015b) *Advice Note 7: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping.* Version 5, published March 2015.

Planning Inspectorate (2015c) *Advice Note 17: Cumulative Effects Assessment*. Version 1, published December 2015.