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TABLES

2.0 ASSESSMENT METHODOLOGY

2.1 Scoping

2.1.1 This Environmental Statement (ES) has been prepared to satisfy the requirements of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations') in relation to the planning application outlined within Chapter 1: Introduction.

2.1.2 Reference has also been made to the EIA Scoping Opinion (including individual consultee comments) received from North East Lincolnshire Council (NELC) dated 3rd September 2018 presented within Appendix 1B in 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 other consultations.

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

- air quality;
- noise and vibration;
- traffic and transport;
- ecology and nature conservation;
- landscape and visual amenity;
- geology, hydrogeology and land contamination;
- cultural heritage (including archaeology);
- water resources, flood risk and drainage;
- socio-economics;
- waste management; and
- cumulative and combined effects.

2.1.4 There has also been consideration of the impacts of nearby hazardous installations (as requested in the EIA Scoping Opinion) in the development design, as described at paragraph 2.1.18 below and in Chapter 6: Alternatives and Design Evolution.

2.1.5 The EIA Scoping Report presented within Appendix 1A in 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 EIA Scoping Opinion are described below.

Aviation

2.1.6 The Civil Aviation Authority (CAA) has a general interest in charting all known structures of 91.4 m (300 feet) or more above ground level and may also require lighting at the top of tall structures. The existing South Humber Bank Power Station stacks are 75 m in height and have lighting at the top for aviation purposes.

2.1.7 The Proposed Development is within 14 km of Humberside International Airport and is within the Safeguarding area for the Airport.

2.1.8 Humberside Airport provided a response to the EIA Scoping Report in which they stated they would not object to the Proposed Development unless the stack height was greater

than 171 m but would reserve comment until the actual location of the stack (to six figure grid reference) is known.

2.1.9 EP SHB will install aviation lighting on structures as necessary and is prepared for this to be secured by a planning condition.

2.1.10 The CAA will be consulted on the Proposed Development to review any requirements for aviation lighting on the stack and enable the Proposed Development to be charted in future and prior to construction if necessary.

Electronic Interference

2.1.11 As outlined within the EIA Scoping Report an assessment for electronic interference was considered not to be required.

2.1.12 Terrestrial television signals have ceased and are now transmitted in digital format. The only relevant interference mechanism affecting digital terrestrial television signals is attenuation due to buildings physically blocking (and absorbing) them. If the wanted signals are too weak then the pictures very quickly deteriorate into random 'blocks' and then disappear altogether. Since interference caused by temporary structures during construction, such as cranes and scaffolding, is difficult to predict and signals are expected to diffract around these features (which are relatively tall and thin), it has not been considered quantitatively.

2.1.13 Given the height and mass of the buildings and stacks in the Proposed Development, and the lack of nearby residential development, it was considered that an assessment of the Proposed Development's effect on electronic interference was not required.

2.1.14 No further comments on this topic were received within the EIA Scoping Opinion received from NELC on 3rd September 2018.

Accidental Events/Health and Safety

2.1.15 Accidental events such as the potential for fuel spillages and abnormal air emissions, and how the risk of these events will be minimised, have been discussed within the relevant chapters of the ES including Chapter 7: Air Quality, Chapter 12: Geology, Hydrogeology and Land Contamination, and Chapter 14: Flood Risk, Hydrology and Water Resources. In addition the majority of emergency response plans and contingency measures will be dealt with in the Environmental Permit, which is regulated by the Environment Agency.

2.1.16 Consultation has been carried out with the Health and Safety Executive (HSE) regarding consultation zones for nearby potentially hazardous installations and pipelines using the HSE's Land Use Planning Methodology.

2.1.17 The planning application boundary contains areas within the following HSE Consultation Zones: Inner Zone (IZ), Middle Zone (MZ) and Outer Zone (OZ).

2.1.18 The HSE has confirmed that it will issue a 'Do not Advise Against' response to the consultation on the planning application for the Proposed Development providing that any workplaces accommodating more than 100 occupants or with 3 or more storeys are situated in either the Middle or Outer Zones, or outside of the Consultation Zones altogether. This has been achieved in the Proposed Development layout, and has been demonstrated through a layout plan that has been submitted to NELC showing the relevant HSE Consultation Zones. HSE Consultation Zones are confidential so the boundaries are not marked on Figures in ES Volume II.

2.1.19 This advice has, therefore, been taken into account within the design of the Proposed Development.

2.2 Approach to Environmental Impact Assessment

2.2.1 This ES addresses the potential effects of the Proposed Development on the environment during construction, operation (including maintenance where relevant) and decommissioning.

2.2.2 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;
- adherence to legislation relevant to EIA;
- consideration of technical standards for the development of significance criteria;
- application of 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.

2.2.3 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.

2.2.4 Each technical chapter follows the same structure for ease of reference, as follows:

- 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.

2.3 Study Areas- Spatial Scope of the Assessments

2.3.1 The technical assessment chapters of this ES (Chapters 7 to 17) 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.

2.4 Assessment Years – Temporal Scope of the Assessments

2.4.1 The approach to assessment has been to identify the environmental impacts of the Proposed Development at key stages in its construction, operation and eventual decommissioning.

2.4.2 There are several scenarios being considered for the construction and subsequent operation of the Proposed Development. These scenarios are outlined in more detail in Chapter 4: The Proposed Development and Chapter 5: Construction Programme and Management. However for the purposes of the EIA, to ensure a robust assessment of environmental impacts, a worst case scenario has been identified and assessed for each topic in Chapters 7 to 16 of the ES.

2.4.3 The 'existing baseline' date is 2018 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 (if the Proposed Development did not progress) are identified for comparison with the predicted conditions with the Proposed Development.

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

- Existing Baseline (2018) without Proposed Development – the year that the baseline data has been collected;
- Future Baseline (2019-2022, 2022) without Proposed Development – for comparison respectively with the Construction and Operation scenarios described below;
- Construction (2019-2022) of the Proposed Development – particular chapters identify the relevant period or 'peak' of activity assessed within the three year construction programme;
- Opening (2022) and/or Operation of the Proposed Development – where Opening represents the start of operation; and
- Decommissioning (post 2052) of the Proposed Development.

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 baseline studies 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 environmental impacts. The key aspects where the design has evolved are described in Chapter 6: Alternatives and Design Evolution.

2.5.2 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 Guidance Notes). The initial assessment has been undertaken on the basis of these measures being implemented (i.e. they are 'embedded mitigation').

2.5.3 Implementation of the impact avoidance and minimisation measures relied on in the assessment will be secured through planning permission, either through the setting of

maximum parameters (e.g. specific heights Above Ordinance Datum (AOD)) or through planning conditions.

2.5.4 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. These measures are described in the Mitigation and Enhancement Measures sections of each technical chapter. The residual effects (after the implementation of mitigation) have then been assessed and presented at the end of each technical chapter. Significant residual effects are also summarised in Chapter 18: 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 judgment of the assessor.

2.6.3 Further details are provided in each technical assessment chapter where appropriate.

2.6.4 Where it has not been possible to quantify (quantitatively assess) effects, qualitative assessments have been carried out, based on available knowledge and professional judgment. Where any uncertainty exists, this has been noted as limitations to the assessment within the Limitations or Difficulties section of each technical chapter.

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 effect 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 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, British Standards), together with the use of value judgment 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 Short term effects are considered to be those associated with the construction phase and which ceases when construction works are completed; long term effects are those associated with the completed, operational development and which will last for the duration of the operational phase. Effects may also be permanent (irreversible) or temporary (reversible) and direct or indirect.

2.7 Cumulative and Combined Effects

2.7.1 In accordance with the EIA Regulations, consideration is given to the potential for cumulative and combined effects to arise as a result of the Proposed Development.

2.7.2 Cumulative effects are those that accrue over time and space from a number of development activities. The impact of the Proposed Development will be considered in conjunction with the potential impacts from other projects or activities which are both reasonably foreseeable in terms of delivery (i.e. have been submitted but not yet approved or have planning consent) located within a realistic geographical scope where environmental impacts could act together to create a more significant overall effect on a receptor and where sufficient environmental information is available.

2.7.3 Combined effects are those resulting from a single development, in this case the 'Proposed Development', on any one receptor that may collectively cause a greater effect (such as the combined effects of noise and air quality/ dust impacts during construction on local residents).

2.7.4 Cumulative and combined effects are assessed within Chapter 17 of this ES.