5 SCOPE OF THE ENVIRONMENTAL IMPACT ASSESSMENT

5.1 INTRODUCTION

The scope of the EIA falls under three broad categories:

- technical scope;
- spatial scope; and
- temporal scope.

The scoping process for the Proposed Development involved setting out the scope of the EIA under these categories and then, based on knowledge of the intended activity at the time of scoping and the Proposed Development's environmental setting, identifying the key issues for the EIA to address.

The scoping process was informed by interaction with the Proposed Development design team and by public consultation on a Scoping Report, and has been further refined based on consultation with a range of stakeholders.

5.2 TECHNICAL SCOPE OF THE ASSESSMENT

Potential environmental issues associated with the Proposed Development have been evaluated as part of this ES preparation, informed by the scoping exercise in March 2015. This is to determine the extent to which topics should be included in the EIA, having regard to whether they are likely to give rise to significant effects, including direct effects and any indirect, secondary (1) , cumulative, short, medium and long-term, permanent and temporary, positive and negative effects. The approach to cumulative and indirect effects is described in more detail in *Sections 5.5* and *5.6*.

The environmental issues that comprise the technical scope of the EIA are set out in *Table 5.1* below.

The following chapters of this ES present the EIA for the topics listed in *Table 5.1*.

(1) For the purposes of this EIA, secondary effects are those effects which are part of a chain of actions which can be directly linked back to an action of the Proposed Development. For example nitrogen deposited to soils as a result of emissions to atmosphere may have secondary effects on plant ecology. As such the assessment of secondary effects is integral to the overall assessment and not a separate activity.

Table 5.1 Scope of Assessment for Environmental Topics

Topic	Scope of Assessment
Geology, ground conditions and water	• Assessment of potential impacts from activities on ground conditions and soils during construction and operation • Assessment of potential impacts on drainage quantity and surface water quality, and the potential for contamination mobilisation into ground water during construction and operation. • Assessment of potential impacts from operational discharges, with consideration of the assessment presented in *Chapter 7: Ecology and Nature Conservation.* • Assessment of potential effects from operational water demand (i.e. abstraction for cooling) with linkages to *Chapter 7: Ecology and Nature Conservation.* • Flood Risk Assessment in accordance with the NPPF, including a strategy for the management of surface water.
Ecology and nature conservation	• Assessment of potential effects on ecological receptors and nature conservation interests on and around the site including habitat loss, fragmentation and deterioration, faunal mortality due to traffic and vegetation clearance, secondary effects from changes in air quality, disturbance and displacement due to habitat loss, noise, vibration, lights, and human presence, and the introduction of invasive alien species. • Information to Inform Habitats Regulations Assessment: information provided to inform assessment by Competent Authority of effects alone and in combination on European Sites.
Noise and vibration	• Construction noise assessment to BS5228. • Operational noise assessment to BS4142. • Assessment of construction and operational traffic noise.
Air quality	• Assessment of emissions to air from traffic during construction, operation, and decommissioning. • Qualitative assessment of the potential for dust during construction using methodology based on that produced by the IAQM. • Modelling / assessment of emissions of effluent gases to air
Archaeology and cultural heritage	• Assessment of direct and secondary effects on non-designated heritage assets (noting that there are no designated sites within the site boundaries) and potential effects on setting at nearby designated sites.
Traffic and transport	• Assessment of potential impacts on road congestion and accident risk caused by increased road traffic during construction and decommissioning, using Institute of Environmental Management and Assessment (IEMA) Guidelines.
Socio-economic characteristics	• Assessment of socio-economic effects during construction, operation and decommissioning resulting from investment in the site, and changes to local employment, demography, access and traffic, land use, housing, and business operators. • The assessment makes reference to the HM Treasury's Green Book, English Partnerships Additionality Guidance, and the Department for Business Innovation and Skills research on Additionality.
Landscape and visual	• Identification of the zone of visual influence for the Proposed Development. • Assessment of potential effects on landscape character and visual amenity during construction and operation. • Landscape and visual assessment in line with Guidelines for Landscape and Visual Impact Assessment 3rd edition (2013), produced jointly by the Landscape Institute and the Institute of Environmental Management and Assessment.

5.3 SPATIAL SCOPE OF THE ASSESSMENT

The spatial, or geographical, scope of the assessment has taken into account the following factors:

- the physical extent of the proposed works, as defined by the scheme design;
- the nature of the baseline environment and the manner in which the impacts are likely to be propagated; and
- the pattern of governmental administrative boundaries, which provide the planning and policy context for the Proposed Development.

Appropriate study areas have been considered for each environmental topic by the specialists undertaking that assessment, and in agreement with the relevant consultees. These are set out in *Table 5.2* below.

Table 5.2 Spatial Scope for Environmental Topics

Topic	Spatial Scope
Geology, ground conditions and water	Within the boundary of the Proposed Development site and the receiving watercourses identified in the Conceptual Site Model (CSM) for changes to soils, ground conditions, drainage and surface/ground water quality. Impacts on water resources associated with cooling water intake and discharge. Within the boundary of the Proposed Development site and adjacent land for changes to flood risk.
Ecology and nature conservation	Direct impacts on habitats within the Proposed Development site and buffer distances for species surveys. Impacts on aquatic habitats associated with cooling water intake and discharge. Ecological designations within 10 km of the Proposed Development site.
Noise and vibration	Identified receptors within and around the boundary of the Proposed Development site and also on traffic routes to and from the site.
Air quality	Construction impacts on: • human receptors within 350 m of the boundary of the site; or 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m form the site entrance; and • an ecological receptor within 50 m of the boundary of the site; or 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s). Operational impacts on: • sensitive human receptors within the modelled dispersion area of the Proposed Development; and • designated nature conservation sites within 10 km of the Proposed Development site.
Archaeology and cultural heritage	Direct impacts on buried heritage assets within the Proposed Development site boundary, and potential for secondary effects on setting of Keadby Lock Grade II Listed Building and Keadby Lock Scheduled Monument
Traffic and transport	The local highway network within the immediate vicinity of the Proposed Development site, and expected connection routes to the strategic highway network.
Socioeconomic characteristics	A two tiered assessment: • Local Area of Influence covering the overall footprint of Proposed Development site and the 'local area' within a 30 minute 'drive time'; • 'Wider region' to include the regions of Yorkshire and The Humber and the East Midlands; and • Tourism Area of Influence defined by a 15 km radius from the Proposed Development site.
Landscape and visual	Effects on landscape character and visual amenity up to 7.5-10 km from the Proposed Development site.

5.4 TEMPORAL SCOPE OF THE ASSESSMENT

5.4.1 General Considerations

The temporal scope of the assessment generally refers to the time periods over which effects may be experienced. This has been established for each technical topic, where appropriate through discussion with the relevant statutory consultees.

In general, the following terms have been used:

- short-term when the impact or effect is temporary and lasts for up to 12 months;
- medium-term when the impact occurs or effect lasts for up to 5 years; and
- long-term when the effect remains for a substantial time, perhaps permanently.

5.4.2 Construction Phase

Construction phase impacts may potentially arise during the whole of the construction works, which is expected to be a period of 36 months in total.

The assessment takes into account the time of day during which works are going to be undertaken, notably whether they are undertaken during daytime or night-time periods.

5.4.3 Operational Phase

For the operational phase, the temporal scope has been determined by the predicted date of the first electricity generation in 2021.

For the flood risk assessment, where effects are dependent on longer term considerations, such as climate change, a 50 year timeframe has been considered. For all other topics the operational life of the Proposed Development is assumed to be 25 years.

5.4.4 Decommissioning Phase

The Proposed Development will have a lifespan of at least 25 years and is not expected to result in any abnormal environmental conditions as a result of or following decommissioning.

5.5 CUMULATIVE EFFECTS

The Proposed Development has been considered in the context of both baseline conditions and together with schemes which are in development or may be developed in future, and the resultant environmental effects of the schemes coexisting. The Proposed Development has also been considered in the context of the existing Keadby I plant. These effects are termed cumulative effects.

The assessment considers the accumulation of effects on people and the environment, even if the Proposed Development, when assessed on an individual basis, has effects that are not significant.

EN-1 (1) makes reference to consideration of cumulative effects in paragraph 4.2.5, stating that:

> *"The ES should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)."*

Further, the 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions' (2) provides the following guidance on cumulative effects:

> *"In practical terms, the extent of the assessment in terms of how far into the past and into the future will be dependent upon the availability and quality of information…"*
>
> *"…it is only reasonable to consider current events and those that will take place in the foreseeable future. Furthermore, the assessment can only be based on the data that is readily available."*

It should be noted that for a scheme to be considered in the cumulative assessment, the principles set out in the guidance documents discussed above have been followed, meaning that only schemes that could reasonably be presumed to go ahead and for which sufficient information was available have been taken into account.

For the purposes of this EIA, this has been taken to comprise those schemes that have planning permissions or for which planning applications have been submitted to the relevant authority, and are of a scale and nature to have potential cumulative effects. The Company has discussed emerging and consented schemes with North Lincolnshire Council and also reviewed the local plan, focusing on developments in proximity to the Proposed Development which may generate significant levels of construction traffic, generate emissions to atmosphere, or fall within the Proposed Development boundary. Generally, only schemes where an EIA was required were considered appropriate for inclusion. The schemes identified as having potential to result in cumulative effects with the Proposed Development are set out in *Table 5.3* and also shown in *Figure 14.1*. Each of these schemes has been screened to establish the likelihood of adverse cumulative effects with the Proposed Development. Where potential cumulative environmental effects have been identified, these have been considered in the relevant topic assessments in this ES.

(1) Overarching National Policy Statement for Energy (EN-1), July 2011

(2) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (http://ec.europa.eu/environment/eia/eia-studies-and-reports/guidel.pdf).

Table 5.3 Cumulative Schemes Considered in this EIA

Scheme	Nature of scheme	Status	Outcome of screening
Lincolnshire Lakes	Up to 3,500 new units in two villages on the Lucent landholding Commercial park New primary school Flood defences A new terminating junction for the M181 will be delivered to the north of Brumby Common Lane, allowing access to the development land east and west of the junction	Consented	**Land and Water Quality:** The Proposed Development is not likely to increase flood risk at the Lincolnshire Lakes. In any case, the Lincolnshire Lakes scheme includes substantial flood defence works. It is not expected that there will be any resultant flood risk at the Proposed Development from the works at Lincolnshire Lakes. Within the shared area of influence of the developments there is potential for cumulative effects upon flood plain storage capacity or surface water run-off (quantity and quality) as a result of these additional planned / proposed properties. **Ecology and Nature Conservation:** Lincolnshire Lakes is located over 2 km from the Proposed Development and will not have cumulative effects on the same sensitive receptors. **Noise**: Lincolnshire Lakes is located over 2 km from the Proposed Development and will not have cumulative effects on the same sensitive receptors. **Air Quality:** Lincolnshire Lakes is located over 2 km from the Proposed Development and will not have cumulative effects on the same sensitive receptors. The Proposed Development will not have significant air quality effects on the Lincolnshire Lakes scheme. **Cultural Heritage:** Lincolnshire Lakes is located over 2 km from the Proposed Development and will not have cumulative effects on the same sensitive receptors. **Traffic:** The construction traffic associated with Lincolnshire Lakes is unlikely to result in significant cumulative effects with the Proposed Development, as confirmed with NLC. **Socio-economic Characteristics:** The residential nature of the Lincolnshire Lakes scheme means that there will be no adverse significant effects as a result of the Proposed Development and there may be positive effects through employment generation for residents of the Lincolnshire Lakes scheme. **Landscape and Visual:** Lincolnshire Lakes is located over 2 km to the southeast from the Proposed Development. The Proposed Development will not have significant visual effects on the Lincolnshire Lakes scheme.

Scheme	Nature of scheme	Status	Outcome of screening
Overhead lines	Construction of a new overhead power line connecting the Keadby II power station to the National Grid Electricity Transmission System and the realignment of an existing overhead line connecting the Keadby I power station to the system	Planned	**Land and Water Quality:** There are no water supply issues, or any anticipated effects on land quality or geology. There will be no resultant flood risk at the Proposed Development from the overhead lines works. **Ecology and Nature Conservation:** The overhead lines will not result in significant effects on ecology receptors and will not have cumulative effects on the same sensitive receptors as the Proposed Development. **Noise**: Noise will primarily derive from the temporary construction period and will not have cumulative effects on the same sensitive receptors as the Proposed Development. **Air Quality:** There will be no significant effects on air quality. **Cultural Heritage:** No known features of cultural heritage value will be affected by construction of the overhead lines so there will be no direct cumulative effects. Given the presence of numerous overhead lines in the area, coupled with the industrial use at the site and its surroundings (i.e. the windfarm), the overhead lines will not result in cumulative effects on setting of the same sensitive receptors as the Proposed Development. **Traffic:** The construction traffic associated with the overhead lines is unlikely to result in significant cumulative effects with the Proposed Development. **Socio-economic Characteristics:** The nature of the overhead lines development means that there will be no cumulative effects with the Proposed Development. **Landscape and Visual:** Given the presence of numerous overhead lines in the area, coupled with the industrial use at the site and its surroundings (i.e. the windfarm), the overhead lines will not result in cumulative effects on the same sensitive receptors as the Proposed Development.

Scheme	Nature of scheme	Status	Outcome of screening
White Rose Carbon Capture and Storage (CCS) Project	Construction and operation of a new coal-fired power station with carbon capture and storage capability in Selby, North Yorkshire.	Planned	**Land and Water Quality:** There are no water supply issues, or any anticipated effects on land quality or geology. It is not expected that there will be any resultant flood risk at the Proposed Development from the works at White Rose CCS. **Ecology and Nature Conservation:** There is potential for emissions from operation of the White Rose CCS project to affect European protected sites that are also affected by operational emissions from the Proposed Development. These comprise Humber Estuary SAC, SPA and Ramsar site, and Thorne Moor SAC and SPA. **Noise**: The White Rose CCS project is located over 15 km from the Proposed Development and will not have cumulative effects on the same sensitive receptors. **Air Quality:** There is potential for emissions from operation of the White Rose CCS project to affect European protected sites that are also affected by operational emissions from the Proposed Development. These comprise Humber Estuary SAC and SPA, and Thorne Moor SAC and SPA. **Cultural Heritage:** The White Rose CCS project is located over 15 km from the Proposed Development and will not have cumulative effects on the same sensitive receptors. **Traffic:** Given that the distance between the project locations is over 15 km, the construction traffic associated with the White Rose CCS project is unlikely to result in significant cumulative effects with the Proposed Development. **Socio-economic Characteristics:** No significant adverse cumulative effects are expected to result from the Proposed Development and the White Rose CCS project. There may be positive effects through employment generation for within the region. **Landscape and Visual:** The White Rose CCS project is located over 15 km to the northwest of the Proposed Development. The Proposed Development will not result in cumulative visual effects on the same sensitive receptors as the White Rose CCS project.

Although the North Killingholme Power Project (NKPP) is considered in the Information to Inform Appropriate Assessment (*Annex E4*), at a distance away of 35 km the effects of this project and the Proposed Development do not overlap and so the NKPP is not included here as a cumulative scheme. Also while the relocation of Scunthorpe United Football stadium is considered separately in *Chapter 11* for traffic, in terms of cumulative effects assessment it can be included with the Lincolnshire Lakes scheme.

5.6 INDIRECT EFFECTS

In order to operate, the Proposed Development will require connection to the National Grid Electricity Transmission System, directly to the north of the Proposed Development Site. This will involve connection from the Proposed Development to an existing tower (pylon) and realignment of an existing connection from Keadby I to the transmission system via a new tower. These works will be carried out under Permitted Development rights or consent under Section 37 of the Electricity Act 1989. In the latter instance and according to the 2000 EIA Regulations, these lines would fall under Schedule 2 Part 3 by virtue of being an electric line installed above ground with a voltage of more than 132 kilovolts or more, a length of less than 15 km and being located outside defined 'sensitive areas'. They may constitute EIA development under the 2000 Regulations and this requirement will be determined through a screening process.

Notwithstanding the above considerations, the overhead lines can be regarded as an indirect (or induced) result of the Proposed Development, as the need for the lines is a direct result of the Proposed Development and lead to their own specific impacts.

The conclusions of a preliminary screening exercise are presented in *Chapter 14* of this ES.

In any case, and given the immediate proximity to the Proposed Development site, the overhead lines development for the new connection of the Proposed Development and realignment of the Keadby I connection are considered in this EIA as having the potential for cumulative effects, as described in *Section 5.5*.