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## TABLES

# 17.0 CUMULATIVE AND COMBINED EFFECTS

## 17.1 Introduction

17.1.1 This Chapter of the Environmental Statement (ES) provides an assessment of the potential for cumulative and combined effects to occur as a result of the Proposed Development. It draws on the assessment of impacts provided in Chapters 7 to 16 of this ES, and information in the public domain relating to other known developments within the Study Area. This assessment does not consider developments that are already constructed and operating, as existing operational facilities are accounted for in the baseline conditions established for the main assessments within Chapters 7 to 16 of this ES.

17.1.2 This Chapter is supported by Figure 17.1 in ES Volume II

## 17.2 Legislation and Planning Policy Context

17.2.1 The requirement for cumulative and combined impact assessments is stated in the relevant European Directive and domestic legislation, as detailed below:

- European Directive 2014/52/EU on the assessments of effects of certain public and private projects on the environment requires an assessment of "*the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium term and long-term, permanent and temporary, positive and negative effects of the project*".
- Schedule 4 Part 5 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 as amended which states the following: "*The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development…*"; and
- Schedule 4, (5)(e) of The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 as amended (Information for the inclusion in Environmental Statements) states the following required: "*a description of the likely significant effects of the development on the environment resulting from, inter alia (e) the cumulation of effects with other existing and / or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*."

## 17.3 Assessment Methodology

Impact Assessment and Significance Criteria

17.3.1 There is no standard prescriptive method for assessing cumulative and combined effects and, in relation to cumulative effects, the extent to which the effects of other developments can be assessed quantitatively depends on the level of information available about the other developments. Such effects are, therefore, assessed by professional judgement, although matrices and modelling are used where appropriate and where enough information regarding the other developments exists. Where environmental assessment information regarding other developments is not available or uncertain, the assessment is necessarily qualitative.

17.3.2 The other developments considered in this Chapter are either:

- approved projects (not yet constructed or operational); or

- projects not yet approved where it is considered likely that they will be approved prior to the submission of this ES (for completeness).

17.3.3 Section 8.2 of the Scoping Report submitted to North East Lincolnshire Council (NELC) in July 2018 defines cumulative and combined effects as follows:

- **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 planning consent) and are located within a realistic geographical scope where environmental impacts could act together to create a more significant overall effect.
- **Combined effects** are those resulting from a single development, '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).

17.3.4 This assessment aims to identify the potential for cumulative and combined effects expected to occur during the construction and operation of the Proposed Development and where possible, identify the possibility of significant effects. In determining the possible significance of such cumulative effects, the location and timing of the identified developments and their associated impacts/ effects have been taken into account wherever possible. Cumulative effects during decommissioning of the Proposed Development are not considered as there is no defined time at which decommissioning will take place and therefore no certainty of temporal overlap with other identified committed developments.

17.3.5 This Chapter only considers those receptors that would experience any residual effect associated with the Proposed Development. For receptors where the Proposed Development's residual effects are deemed to be neutral/ negligible as reported in this ES, it is considered that such receptors could not experience cumulative effects given that impacts resulting from the Proposed Development would be negligible/ very low, or the receptor would be of negligible/ very low sensitivity to result in such an effect.

17.3.6 A long list of developments in the vicinity of the Proposed Development was identified following a search of the relevant planning databases (NELC and North Lincolnshire Council (NLC)). From this long list a refined short list of schemes was prepared that were considered to be of relevance to the cumulative assessment given the nature of the Proposed Development and the potential effects.

17.3.7 Following information gathering from available sources, the effects of the Proposed Development have been considered by each technical discipline in conjunction with the potential effects from the developments included in the short-list where there is potential that environmental impacts could act together to create an effect that is more (or less) significant overall than the effect of the individual developments alone.

17.3.8 In assessing cumulative effects it is important to acknowledge the relative contributions the different developments make to a cumulative effect and to carefully consider whether a cumulative effect could occur at all.

Study Area and Identification of Long List

17.3.9 Cumulative effects are generally unlikely to arise unless the other future development sites are in close proximity to the Proposed Development, recognising that actual distance varies with the nature of the potential effect and the nature of the receptor, e.g. cumulative air quality effects could occur for developments a greater distance apart than noise effects. Construction projects are, as a matter of routine, required to employ

regulatory and managerial controls and employ best practice to mitigate construction impacts wherever possible. Nevertheless, consideration has been given to the presence of common pathways from nearby developments to a single receptor, and whether there is potential for impacts of a sufficient magnitude whereby a particular receptor could experience cumulative effects.

17.3.10 The study area for the consideration of cumulative and combined effects has been developed taking into account the predicted extent of impacts associated with the Proposed Development, and with the point at which the associated effects become insufficient to contribute in any meaningful way to those of another proposed development.

17.3.11 The study area for each environmental assessment topic is defined in the relevant ES technical chapters (Chapters 7 to 16). Information on the likely extent of impacts associated with other developments in the area has also been considered when determining the long and short list of schemes to be considered.

17.3.12 An initial screening exercise was undertaken to identify potential major developments within the vicinity of the Proposed Development for consideration within the cumulative impact assessment. This process identified potential major and other developments considered relevant to the assessment within a 15 km radius to create an initial long list for consideration. This initial long list is included as Table 17.1 below.

Consultation

17.3.13 NELC has provided comments on the scope of the cumulative assessment through the EIA Scoping process. Separate consultation on the initial long list was also carried out with NELC and NLC. Through this consultation process further developments were identified and have been included within this assessment where appropriate.

17.3.14 No response was received from NLC.

Identification of Short List of Other Developments for Assessment

17.3.15 The long list was subsequently screened, based on the potential for impact (e.g. cumulative landscape and visual impacts have potential to occur over a greater distance than, for example, cumulative noise or archaeology impacts) and a refined short list was developed for further, more detailed consideration. This selection process is summarised in Table 17.1.

17.3.16 The short list of other developments identified for the cumulative effects assessment are presented in Table 17.2 below, with details of their current status and comments regarding likely timescales.

17.3.17 Where individual technical disciplines have scoped out developments included on the short list, for the purposes of their cumulative assessment, the reasoning for this is set out in each section of this Chapter.

17.3.18 The approved or proposed boundaries and locations of the other developments included on the short list are shown in relation to the Proposed Development boundary on Figure 17.1.

**Table 17.1: Long list of developments to be considered for inclusion within the assessment of Cumulative Effects**

| APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SITE ADDRESS | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | CARRIED FORWARD TO SHORT LIST? |
|---|---|---|---|---|---|---|
| DM/0094/18/FUL | Construction and modifications of a single carriageway highway link with shared cycle & footway from Moody Lane/Woad Lane junction (to the south east) to Hobson Way Roundabout (to the north west) with associated works including drainage works, street lighting, fencing and landscaping. | Stallingborough Link Road, Energy Park Way, Grimsby, North East Lincolnshire | Immediately adjacent (to the south) | Approved with Conditions (September 2018) | Air Quality Assessment, Ecological Assessment, Transport Assessment, Flood Risk Assessment, Visual Impact Assessment, Habitats Regulations Assessment, Tree Report, Lighting Report, Geo-environmental Interpretative Report | Yes due to proximity – immediately adjacent to the Proposed Development Site. |
| DM/0099/18/FUL | Change of use from arable fields to mitigation area for a quality habitat area for Special Protection Area (SPA) birds with associated works including two water storage lagoons, shallow scrapes and ponds, bunding, a bird hide, footpaths, car parking, cattle and timber fencing, culverts and bridges.<br><br>Cress Marsh | Land Adj Poplar Farm South Marsh Road Stallingborough North East Lincolnshire | 230 m to the west | Approved with Conditions (August 2018)<br><br>Currently under construction | Heritage Impact Assessment, Geophysical Survey Report, Flood Risk Assessment, Habitats Regulations Assessment, | Yes due to proximity – within 1 km. |
| DM/0147/16/FUL | Engineering works and use of land for external car parking, internal site access works, boundary works, and other associated works. | Rear Of Paragon House Kiln Lane Stallingborough North East Lincolnshire | 410 m to the west | Approved with Conditions (June 2016) | Environmental Statement, Transport Assessment, Flood Risk Assessment, Landscape and Visual Scoping Report, Air Quality Screening Assessment, | Yes due to proximity – within 1 km |
| DM/0195/17/FUL | Erection of industrial building and adjoined two storey office/control room to create power plant (18MW Energy From Waste) including construction of associated access, hardsurfacing, erection of 55m chimney stack and installation of necessary plant and machinery.<br><br>Great Coates Renewable Energy Centre | Vireol Plc Energy Park Way Grimsby North East Lincolnshire DN31 2TT | 560 m to the south | Approved August 2017 with Conditions | Environmental Statement, Transport Statement, Outline Traffic Management Plan, Transport Assessment, Noise Assessment, Human Health Risk Assessment, Habitat Regulations Assessment, Flood Risk Assessment, Phase 1 Environmental Assessment, Cultural Heritage Desk Based Appraisal, Ecology Report, Landscape and Visual Appraisal, Air Quality Assessment | No – scheme re-submitted with amended details see DM/0329/18/FUL – scheme re-submitted with amended details see DM/0329/18/FUL. The covering letter accompanying application DM/0329/18/FUL states: "*This application is resubmitted in order to incorporate plant design amendments required to develop the most technically and commercially effective project. This design would operate in essentially the same way as set out in the original planning application; the changes would not result in any further significant environmental effects.* ") On this basis DM/0329/18/FUL has been included in the short list. |

| APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SITE ADDRESS | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | CARRIED FORWARD TO SHORT LIST? |
|---|---|---|---|---|---|---|
| DM/1050/16/FUL | Change of use to allow business (Use Class B1) and/or general industrial (Use Class B2) and/or storage and distribution (Use Class B8) across the site and reconfiguration of car parking. | Worldwide Way Kiln Lane Trading Estate Access Road Stallingborough Grimsby North East Lincolnshire DN41 8DY | 1.22 km to the north-west | Approved with Conditions (March 2017)<br><br>Development completed. | Flood Risk Assessment | No – development now completed and the type of development is highly unlikely to result in significant cumulative effects. |
| DM/0848/14/FUL | Development of a renewable power facility for the production of electricity using pre-treated fuel feedstocks including tyres and carpets processed on site with ancillary storage, lorry and car provision and widening of existing access off Europa Way. | Plot Q Kiln Lane Industrial Estate Europa Way Stallingborough North East Lincolnshire | 1.60 km to the north-west | Approved with Conditions (April 2016) | Ecology and Protected Species Survey, Transport Assessment, Environmental Risk Assessment, Flood Risk Assessment, Drainage Presentation, Supporting Emissions Statement, Permit Application, Emissions Evidence | Yes due to type of development and proximity – within 2 km. |
| DM/0449/17/FUL | Install 4 CHP boilers internally to include the erection of associated flues. | Selvic Shipping Ltd Netherlands Way Stallingborough Grimsby North East Lincolnshire DN41 8DF | 1.79 km to the north-west | Approved with Conditions (August 2017) | Emissions Report, Flood Risk Assessment | Yes due to proximity – within 5 km. |
| DM/0333/17/FUL | Develop waste tyre to energy pyrolysis plant at disused Immingham Railfreight Terminal. Erect industrial building and installation of various plant and machinery across the site to include the creation of access, hardstanding/parking, boundary fencing and balancing pond. | Immingham Railfreight Terminal Scandinavian Way Stallingborough Grimsby North East | 1.80 km to the north-west | Approved with Conditions (December 2017)<br><br>This is the same site footprint as application DM/0628/18/FUL i.e. only one of these two developments is likely to be implemented. | Landscape and Visual Impact Assessment, Contaminated Land Appraisal, Surface Water Drainage Strategy, Air Quality Assessment, Transport and Traffic Assessment, Flood Risk Assessment, Ecological Appraisal | Yes due to type of development and proximity – within 5 km. |
| DM/0717/16/FUL | Construction of access road, electricity sub-station and foul water pumping compound, including installation of surface water drainage (swales - as part of initial phase) and service ducts. | Land Adj Kiln Lane Roundabout Kiln Lane Stallingborough North East Lincolnshire | 2.05 km to the west | Approved with Conditions (Oct 2016) | Construction Management Plan, Ecology and Protected Species Survey, Flood Risk Assessment | No due to the type of development proposed and the fact that it is already partially completed it is highly unlikely to result in significant cumulative effects. |
| PA/2018/155 | Planning permission to construct 9 lagoons for the storage of surface water associated with the dewatering of cable trenches for the Hornsea Project One Offshore Windfarm Project. | Fields north of Chase Hill Road, fields west of East Field Road and land east and west of Top Road, South Killingholme | 4.8 km to the south-west | Approved with Conditions (March 2018) | Flood Risk Assessment, Ecological walkover technical note | No due to distance and that the type of development is highly unlikely to result in significant cumulative effects |

| APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SITE ADDRESS | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | CARRIED FORWARD TO SHORT LIST? |
|---|---|---|---|---|---|---|
| DM/0153/17/FUL | Additional area to be added to the temporary site construction compound to support the onshore cable installation and HDD for Hornsea Project One. | Site of Wind Farm Compound Grimsby Road Laceby North East Lincolnshire | 6.07 km to the south | Approved with Conditions (May 2017) | None | No due to distance and that the type of development proposed is highly unlikely to result in significant cumulative effects. |
| PA/2018/918 | Planning permission to construct a new gas-fired power station with a gross electrical output of up to 49.9 megawatts<br><br>VPI Immingham Energy Park A | VPI-Immingham Energy Park A, Rosper Road, South Killingholme DN40 3DZ | 6.73 km to the north-west | Approved with Conditions (Sept 2018) | Environmental Statement, Ecology Assessment, Air Quality Assessment, Noise and Vibration Assessment, Landscape and Visual Impact Assessment, Transport Statement, Flood Risk Assessment, Phase 1 Environmental Assessment, Cultural Heritage Assessment, Cumulative and Combined Effects | Yes, although outside of 5 km the type of development proposed has the potential to result in significant cumulative effects. |
| TWA 8/1/13 | A180 Port of Immingham Improvement | South Killingholme | 5.93 km to the north-west | Development Consent Granted (Feb 2015)<br><br>Development completed. | Environmental Statement, Air Quality Assessment, Cultural Heritage Assessment, Landscape and Visual Assessment, Ecology and nature Conservation Assessment, Geology and Soils Assessment, Materials Assessment, Noise and Vibration Assessment, Effects on All Travellers, Community and Private Assets Assessment, Road Drainage and Water Environment Assessment, Cumulative Effects Assessment. | No due to distance and completion of the development. |
| EN060004 | River Humber Gas Pipeline Replacement Project | | 12.35 km to the north-west | Development Consent Granted | | No due to distance. |
| DM/0329/18/FUL<br><br>(re-submission of DM/0195/17/FUL) | Erection of industrial building and adjoined two storey office/control room to create power plant (18MW Energy From Waste) including construction of associated access, hardsurfacing, erection of 65m chimney stack and installation of necessary plant and machinery (AMENDED PLANS/DESCRIPTION)<br><br>Great Coates Renewable Energy Centre | Vireol Plc Energy Park Way Grimsby North East Lincolnshire DN31 2TT | 560 m to the south | Application re-submitted and validated May 2018 – Pending Decision | Environmental Statement, Transport Statement, Outline Traffic management Plan, Noise Assessment, Human Health Risk Assessment, Habitat Regulations Assessment, Flood Risk Assessment, Phase 1 Environmental Assessment, Cultural Heritage Desk Based Appraisal, Ecology Report, Landscape and Visual Appraisal | Yes due to type of development and proximity – within 1 km. |

| APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SITE ADDRESS | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | CARRIED FORWARD TO SHORT LIST? |
|---|---|---|---|---|---|---|
| DM/0628/18/FUL | Partially demolish existing building and erect 20MW$_E$ waste to energy power generation facility and associated plant, machinery, parking and external works | Immingham Railfreight Terminal Scandinavian Way Stallingborough Grimsby North East Lincolnshire DN41 8DT | 1.80 km to the north-west | Pending Decision (validated September 2018)<br><br>This is the same site footprint as application DM/0333/17/FUL i.e. only one of these two developments is likely to be implemented. | Travel Plan, Transport Assessment, Noise Impact Assessment, Landscape and Visual Impact Assessment, Ecology Statement, Cultural Heritage Assessment, Socio-Economics, Major Accidents and Disasters, Flood Risk Drainage and Water, Noise, Human Health, Air Quality and Climate Change, Site Selection and Alternatives | Yes due to type of development proposed and proximity – within 2 km. |
| DM/0026/18/FUL | Erect an Energy Recovery Facility with an electricity export capacity of up to 49.5MW and associated infrastructure including a stack to 90m high, parking areas, hard and soft landscaping, access road, weighbridge facility and drainage infrastructure. | Land South of Queens Road, Immingham, North East Lincolnshire | c.1.96km to the north-west | Approved with Conditions (October 2018) | Landscape and Visual Impact Assessment, Ecology and Nature Conservation, Noise and Vibration, Air Quality and Human Health, Soils, Geology and Hydrogeology, Surface water and Flood Risk, Socio-Economics, Archaeology and Cultural Heritage. | Yes due to type of development proposed and proximity – within 5 km. |
| DM/0105/18/FUL | Hybrid application seeking outline consent with access, landscaping and scale to be considered for the development of a 62ha Business Park comprising up to 120,176 sq. m for B1 (Business), B2 (General Industrial) and B8 (Storage and Distribution), associated infrastructure and internal highways. Full application for the creation of a new roundabout, new access roads, associated highway works, substations, pumping stations, drainage and landscaping. | Land Off Stallingborough Interchange Kiln Lane Stallingborough North East Lincolnshire | 1.83 km to the west | Approved with Conditions (October 2018) | Transport, Noise and Vibration, Air Quality, Cultural Heritage, Ecology and nature Conservation, Ground Conditions and Contamination, Water Quality, Flood Risk and Drainage, Landscape and Visual, Land Use and Agricultural, Socio-economics, Cumulative | Yes due to type of development and proximity – within 2 km |
| DM/1146/17/FUL | Additional land for temporary dewatering areas (30m x 30m) including creation of bunding around a lagoon and the installation of a separate settlement tank and pump for Hornsea Project One Offshore Wind Farm (falls within Stallingborough, Laceby, Immingham, Habrough, Healing and Bradley Parishes). | North East Lincolnshire Area Keelby Road Stallingborough North East Lincolnshire | 4.76 km to the west (at closest point) | Pending Decision – revised plans submitted September 2018. | Ecological Walkover Survey Report | No, although just within 5 km the type of development proposed is highly unlikely to result in significant cumulative effects and limited environmental information available. |

| APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SITE ADDRESS | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | CARRIED FORWARD TO SHORT LIST? |
|---|---|---|---|---|---|---|
| PA/SCO/2017/155 | Request for Scoping opinion for VPI-Immingham<br>OCGT DCO | Land north of VPI Power Station, Rosper Road, South Killingholme, DN40 3DZ | 6.85 km to the north-west | Scoping Opinion Pending<br><br>Application not yet submitted | Scoping Report | Yes due to type of development. |

**Table 17.2: Short List of developments to be considered for inclusion within the assessment of Cumulative Effects**

| DEVELOPMENT REFERENCE (SEE FIGURE 17.1) | APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SHORT NAME | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | DEVELOPMENT TIMESCALES (IF KNOWN) |
|---|---|---|---|---|---|---|---|
| **1** | DM/0094/18/ FUL | Construction and modifications of a single carriageway highway link with shared cycle & footway from Moody Lane/Woad Lane junction (to the south east) to Hobson Way Roundabout (to the north west) with associated works including drainage works, street lighting, fencing and landscaping. | Stallingborough Link Road | Immediately adjacent (to the south) | Approved with Conditions (September 2018) | Air Quality Assessment, Ecological Assessment, Transport Assessment, Flood Risk Assessment, Visual Impact Assessment, Habitats Regulations Assessment, Tree Report, Lighting Report, Geo-environmental Interpretative Report | Construction start planned 2018, project complete mid-2020. |
| **2** | DM/0099/18/ FUL | Change of use from arable fields to mitigation area for a quality habitat area for Special Protection Area (SPA) birds with associated works including two water storage lagoons, shallow scrapes and ponds, bunding, a bird hide, footpaths, car parking, cattle and timber fencing, culverts and bridges. | Cress Marsh SPA Mitigation Area | 230 m to the west | Approved with Conditions<br><br>Schemes pursuant to pre-commencement conditions approved Sept 2018 (DM/0734/18/ CND) | Heritage Impact Assessment, Geophysical Survey Report, Flood Risk Assessment, Habitats Regulations Assessment, | Construction start planned 2018, project complete mid-2019. |
| **3** | DM/0147/16/ FUL | Engineering works and use of land for external car parking, internal site access works, boundary works, and other associated works. | Engineering works - Paragon House | 410 m to the west | Approved with Conditions (June 2016) | Environmental Statement, Transport Assessment, Flood Risk Assessment, Landscape and Visual Scoping Report, Air Quality Screening Assessment, | Timing details not available - assumed construction to start before June 2019 due to planning condition |
| **4** | DM/0848/14/ FUL | Development of a renewable power facility for the production of electricity using pre-treated fuel feedstocks including tyres and carpets processed on site with ancillary storage, lorry and car provision and widening of existing access off Europa Way. | Renewable power facility - Kiln Lane | 1.60 km to the north-west | Approved with Conditions (April 2016) | Ecology and Protected Species Survey, Transport Assessment, Environmental Risk Assessment, Flood Risk Assessment, Drainage Presentation, Supporting Emissions Statement, Permit Application, Emissions Evidence | The construction period for the scheme is forecast to be around 12 months. |
| **5** | DM/0449/17/ FUL | Install 4 CHP boilers internally to include the erection of associated flues. | Selvic Shipping CHP Boilers | 1.79 km to the north-west | Approved with Conditions (August 2017) | Emissions Report, Flood Risk Assessment | Not known. |

| DEVELOPMENT REFERENCE (SEE FIGURE 17.1) | APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SHORT NAME | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | DEVELOPMENT TIMESCALES (IF KNOWN) |
|---|---|---|---|---|---|---|---|
| **6** | DM/0333/17/ FUL | Develop waste tyre to energy pyrolysis plant at disused Immingham Railfreight Terminal. Erect industrial building and installation of various plant and machinery across the site to include the creation of access, hardstanding/parking, boundary fencing and balancing pond. | Waste Tyre Pyrolysis – Immingham Railfreight | 1.80 km to the north-west | Approved with Conditions (December 2017)<br><br>This is the same site footprint as application DM/0628/18/FUL.[1] | Landscape and Visual Impact Assessment, Contaminated Land Appraisal, Surface Water Drainage Strategy, Air Quality Assessment, Transport and Traffic Assessment, Flood Risk Assessment, Ecological Appraisal | Construction not yet started – application DM/0628/18/FUL is for the same site footprint. |
| **7** | PA/2018/918 | Planning permission to construct a new gas-fired power station with a gross electrical output of up to 49.9 megawatts | VPI-Immingham Energy Park A | 6.73 km to the north-west | Approved with Conditions (September 2018) | Environmental Statement, Ecology Assessment, Air Quality Assessment, Noise and Vibration Assessment, Landscape and Visual Impact Assessment, Transport Statement, Flood Risk Assessment, Phase 1 Environmental Assessment, Cultural Heritage Assessment, Cumulative and Combined Effects | Anticipated construction start early 2019 over 18 months to be completed mid-2020. |
| **8** | DM/0329/18/ FUL<br><br>(re-submission of DM/0333/17/ FUL) | Erection of industrial building and adjoined two storey office/control room to create power plant (18MW Energy From Waste) including construction of associated access, hardsurfacing, erection of 65m chimney stack and installation of necessary plant and machinery (AMENDED PLANS/DESCRIPTION) | Great Coates Renewable Energy Centre | 560 m to the south | Application re-submitted and validated May 2018 – Pending Decision | Environmental Statement, Transport Statement, Outline Traffic management Plan, Noise Assessment, Human Health Risk Assessment, Habitat Regulations Assessment, Flood Risk Assessment, Phase 1 Environmental Assessment, Cultural Heritage Desk Based Appraisal, Ecology Report, Landscape and Visual Appraisal | The construction period for the scheme is forecast to be around 30 months. |
| **9** | DM/0628/18/ FUL | Partially demolish existing building and erect 20$MW_E$ waste to energy power generation facility and associated plant, machinery, parking and external works | Waste to Energy - Immingham Railfreight | 1.80 km to the north-west | Pending Decision (validated September 2018)<br><br>This is the same site footprint as application DM/0333/17/FUL.[1] | Travel Plan, Transport Assessment, Noise Impact Assessment, Landscape and Visual Impact Assessment, Ecology Statement, Cultural Heritage Assessment, Socio-Economics, Major Accidents and Disasters, Flood Risk Drainage and Water, Noise, Human Health, Air Quality and Climate Change, Site Selection and Alternatives | Construction planned 2019 / 2020 and fully operational from 2021 with design life of 20 years. |
| **10** | DM/0026/18/ FUL | Erect an Energy Recovery Facility with an electricity export capacity of up to 49.5MW and associated infrastructure including a stack to 90m high, parking areas, hard and soft landscaping, access road, weighbridge facility and drainage infrastructure. | North Beck Energy Centre (NBEC) | c.1.96km to the north-west | Approved with Conditions (October 2018) | Landscape and Visual Impact Assessment, Ecology and Nature Conservation, Noise and Vibration, Air Quality and Human Health, Soils, Geology and Hydrogeology, Surface water and Flood Risk, Socio-Economics, Archaeology and Cultural Heritage. | The construction period for the scheme is forecast to be 39 month. The facility is programmed to open in early 2022. |

[1] Approved development reference no. 6 (DM/0333/17/FUL) occupies the same space as pending development reference no. 9 (DM/0628/18/FUL). Whilst the cumulative assessment would conventionally consider only the approved development, construction has not yet begun (to the best of knowledge at the time of undertaking this assessment) and as they occupy the same site both developments cannot be progressed (should DM/0628/18/FUL be approved). Therefore the approach adopted in relation to this site is to assess the development that represents the potential worst case scenario in terms of cumulative effects for each technical discipline.

| DEVELOPMENT REFERENCE (SEE FIGURE 17.1) | APPLICATION REFERENCE | NAME OF DEVELOPMENT / DESCRIPTION | SHORT NAME | DISTANCE FROM PROPOSED DEVELOPMENT | STATUS (AT TIME OF ASSESSMENT) | ENVIRONMENTAL INFORMATION AVAILABLE TO INFORM THE ASSESSMENT | DEVELOPMENT TIMESCALES (IF KNOWN) |
|---|---|---|---|---|---|---|---|
| **11** | DM/0105/18/FUL | Hybrid application seeking outline consent with access, landscaping and scale to be considered for the development of a 62ha Business Park comprising up to 120,176 sq. m for B1 (Business), B2 (General Industrial) and B8 (Storage and Distribution), associated infrastructure and internal highways. Full application for the creation of a new roundabout, new access roads, associated highway works, substations, pumping stations, drainage and landscaping. | Stallingborough Interchange – Business Park | 1.83 km to the west | Approved with Conditions (October 2018) | Transport, Noise and Vibration, Air Quality, Cultural Heritage, Ecology and nature Conservation, Ground Conditions and Contamination, Water Quality, Flood Risk and Drainage, Landscape and Visual, Land Use and Agricultural, Socio-economics, Cumulative | Phase 1A (26,353 $m^2$) 2018 – 2022<br><br>Phase 1B (43,103 $m^2$) 2020 – 2024<br><br>Phase 2 (50,720 $m^2$) 2023 – 2032 |
| **12** | PA/SCO/2017/155 | Request for Scoping opinion for VPI-Immingham OCGT DCO | VPI-Immingham OCGT DCO | 6.85 km to the north-west | Scoping Opinion Pending<br><br>Application not yet submitted | Scoping Report | 3 year construction programme, earliest operation in 2023. |

## 17.4 Electrical and Gas Connection Works

17.4.1 Chapter 4 of the ES provides a description of the Proposed Development and includes a brief description of the electrical and gas connections that will be required.

17.4.2 On site electrical connection works and gas connection works have been assessed as part of the EIA. However, any electrical connection works outside of Planning Application boundary, whilst required for the development, do not form part of the Planning Application and the relevant undertaker will rely either on their statutory powers or obtain the relevant consents prior to connection. Similarly, if a connection to an off-site gas distribution network were required, this would also require a separate consent. Any potential off-site works for these connections have therefore not been assessed in the EIA.

17.4.3 It is considered that consent would only be granted for these works once the relevant authority was satisfied that the works could be undertaken, in their own right, without the potential for any significant effect either in isolation or with regards to any other development being undertaken at that time. This would be demonstrated either through the planned implementation of best practice measures or by securing a commitment to any further mitigation measures deemed necessary by the consenting authority at that time.

17.4.4 On the basis of the above and taking into consideration the relatively minor nature of these works it is considered that there is no potential for any significant cumulative effects with the construction or the operation of the Proposed Development or the implementation of the developments included in Table 17.2.

17.4.5 The off Site electrical connection works and gas connection works are therefore not considered further in this Chapter.

## 17.5 Air Quality

17.5.1 Table 17.3 below summarises how each of the developments included in the short list (Table 17.2) have been considered with regards to potential cumulative effects.

**Table 17.3: Scope of Air Quality Cumulative Assessment**

| DEVELOPMENT REFERENCE | ADMS 5 DISPERSION MODELLING | ADMS ROADS MODELLING ASSESSMENT |
|---|---|---|
| 1. Stallingborough Link Road | **Scoped out**<br>Unquantifiable and likely minimal source emissions as a result of this development. | **Scoped in**<br>Traffic data included in the 2022 Base + Committed and 2022 Base + Committed +Operation scenarios |
| 2. Cress Marsh SPA Mitigation Area | **Scoped out**<br>Unquantifiable and likely minimal source emissions as a result of this development and is expected to be largely completed in advance of commencement of construction of the Proposed Development. | **Scoped out** |

| DEVELOPMENT REFERENCE | ADMS 5 DISPERSION MODELLING | ADMS ROADS MODELLING ASSESSMENT |
|---|---|---|
| 3. Engineering works – Paragon House | **Scoped out**<br>Minimal point source emissions. | **Scoped in**<br>Traffic data included in the 2022 Base + Committed and 2022 Base + Committed +Operation scenarios |
| 4. Renewable power facility – Kiln Lane | **Scoped out**<br>The information provided in the planning application is inconsistent with data that can be replicated by dispersion modelling software | **Scoped in**<br>Traffic data included in the 2022 Base + Committed and 2022 Base + Committed +Operation scenarios |
| 5. Selvic Shipping CHP Boilers | **Scoped out**<br>The information provided in the planning application is inadequate to undertake dispersion modelling. | **Scoped out** |
| 6. Waste Tyre Pyrolysis – Immingham Railfreight | **Scoped in** | **Scoped in**<br>Traffic data included in the 2022 Base + Committed and 2022 Base + Committed +Operation scenarios |
| 7. VPI Immingham Energy Park A | **Scoped in** | **Scoped out**<br>Traffic for this development is unlikely to affect the transport study area for the Proposed Development. |
| 8. Great Coates Renewable Energy Centre | **Scoped in** | **Scoped out**<br>Traffic for this development is unlikely to affect the transport study area for the Proposed Development. |
| 9. Waste to Energy Immingham Railfreight | **Scoped out**<br>This development occupies the same space as Development Ref: 6 and it is not possible for both developments to occur. Development Ref: 6 is included in the assessment on the basis that it represents the worst case scenario in terms of emissions. | **Scoped out**<br>This development occupies the same space as Development Ref: 6 and it is not possible for both developments to occur. Development Ref: 6 is included in the assessment on the basis that it represents the worst case scenario in terms of traffic (see section 17.7). |

| DEVELOPMENT REFERENCE | ADMS 5 DISPERSION MODELLING | ADMS ROADS MODELLING ASSESSMENT |
|---|---|---|
| 10. North Beck Energy Centre | **Scoped in** | **Scoped in**<br>Traffic data included in the 2022 Base + Committed and 2022 Base + Committed +Operation scenarios |
| 11. Stallingborough Interchange – Business Park | **Scoped out**<br>The information provided in the planning application is inadequate to undertake dispersion modelling. | **Scoped in**<br>Traffic data included in the 2022 Base + Committed and 2022 Base + Committed +Operation scenarios |
| 12. VPI Immingham OCGT DCO | **Scoped out**<br>Insufficient information available to inform an assessment of cumulative effects | **Scoped out**<br>Insufficient information available to inform an assessment of cumulative effects |

Construction Cumulative Effects – Human Receptors

*Dust*

17.5.2 The Air Quality assessment (see Chapter 7) concludes that, with appropriate mitigation in place, the dust and particulates arising as a result of activities undertaken during the construction phase would be likely to result in negligible effects at all of the identified human receptors and that the effect will not therefore be significant. On this basis there is no potential for a significant cumulative effect on receptors outside of the Site as a result of dust and particulates.

*Construction Traffic*

17.5.3 The magnitude of the change in pollutant concentrations due to construction traffic on the road network due to the Proposed Development is predicted to be imperceptible or very low for all pollutants at all receptor locations. A change of this magnitude is considered to have a negligible effect, which is considered to be not significant. On this basis there is no potential for a significant cumulative effect as a result of construction traffic.

Construction Cumulative Effects – Ecological Receptors

17.5.4 The Humber Estuary SPA/ SAC/ Ramsar site is over the screening distance of 50 m from the construction works; therefore an assessment of construction dust impacts on ecological receptors has not been undertaken and it is predicted that there will be no significant effect on this receptor. On this basis there is no potential for a significant cumulative effect on this receptor as a result of construction dust.

Operational Cumulative Effects - Human Receptors

*Odour*

17.5.5 The Air Quality assessment (see Chapter 7) concludes that fugitive odour emissions from the Proposed Development would be likely to result in very low or low impacts at all locations outside of the Site, producing effects of negligible significance. On this

basis there is no potential for a significant cumulative effect on human receptors outside of the Site as a result of odour.

*Proposed Development Stacks and Operational Road Traffic*

17.5.6 The advanced dispersion modelling ADMS 5 modelled the potential cumulative effects from the Proposed Development alongside the operation of the developments as identified in Table 17.3 above. The technical findings of the modelling can be found in Annex D of Appendix 7A in ES Volume III.

17.5.7 Annual mean nitrogen dioxide concentrations at all of the identified sensitive human receptor locations remain below the air quality standard. R8 (located just north of the A180) and R21 located within Grimsby AQMA are predicted to experience a minor adverse effect in terms of the change in nitrogen dioxide concentrations due to the emissions from the other modelled developments.

17.5.8 Annual mean particulate matter and fine particulate matter concentrations at all of the identified sensitive human receptor locations remain below the air quality standard. All sensitive human receptor locations are predicted to experience a negligible change in particulate matter concentrations due to the emissions from the other identified developments.

17.5.9 The maximum cumulative process contribution within the modelled domain for sulphur dioxide, carbon monoxide, hydrogen chloride, hydrogen fluoride, lead, mercury, antimony, cadmium, chromium, copper, manganese and vanadium remain below their representative environmental standards at all identified sensitive human receptor locations. Dioxins and furans remain well below the background pollutant concentrations.

17.5.10 Arsenic, chromium (VI), nickel and Polycyclic Aromatic Hydrocarbons (PAH) as benzo[a]pyrene required more specific modelling due to their contribution from each assessed development being greater than one percent of the environmental standard. Modelling undertaken using emission concentrations from similar energy from waste plants identified in the short list resulted in the total concentrations remaining small and insignificant. The maximum concentrations of chromium (VI), arsenic and nickel are located in the Humber Estuary far from the identified sensitive human receptor locations. The maximum concentrations of Polycyclic Aromatic Hydrocarbons (PAH) as benzo[a]pyrene are located adjacent to the Development Ref: 3 and Development Ref: 10 so cannot be attributed to the Proposed Development; the Proposed Development contribution at these locations represents 0.003% of the air quality standard, which can be screened as insignificant.

17.5.11 On the basis of the information available, the cumulative air quality assessment has not identified any significant cumulative air quality effects on human receptors as a result of the Proposed Development and the other developments identified and assessed.

<u>Operational Cumulative Effects - Ecological Receptors</u>

17.5.12 The modelling results show that the predicted impacts are within the criteria for insignificance at most of the selected receptors. A Process Contribution (PC) of more than 1% of the long term critical load has been predicted to occur at receptor E4, within the Humber Estuary SAC (Acid Fixed Dunes), in respect of acid deposition, in an area which already exceeds the relevant standard.

17.5.13 At the acid fixed dunes, the cumulative PC to acid deposition is 1.5% of the lower range critical load. The PC from the SHBEC alone was 0.6% of the lower range critical load.

17.5.14 The significance of the potential cumulative air quality effects on sensitive ecological receptors is discussed in Section 17.8 below.

## 17.6 Noise and Vibration

17.6.1 The developments that have been scoped into the cumulative noise and vibration assessment are:

- Stallingborough Link Road (Development Ref: 1)
- Cress Marsh SPA Mitigation Area (Development Ref: 2)
- Engineering works – Paragon House (Development Ref: 3)
- Great Coates Renewable Energy Centre (Development Ref:8)
- North Beck Energy Centre (Development Ref: 10)
- Stallingborough Interchange - Business Park (Development Ref: 11)

17.6.2 The other developments included on the short list (Table 17.2) have been scoped out of the noise and vibration cumulative assessment due to the distances from the Proposed Development Site and from the identified nearest sensitive receptors (NSRs) and/or limited availability of information. Cumulative impacts have been considered at different receptor locations should individual developments be constructed and/ or operated at the same time as the Proposed Development. An assessment has also been undertaken of the potential for significant cumulative effects on the NSRs identified for the Proposed Development as a result of all of the aforementioned developments collectively being progressed in parallel with the Proposed Development.

Stallingborough Link Road (Development Ref: 1)

17.6.3 The noise assessment undertaken for the Stallingborough Link Road considers receptors within a series of defined Study Areas. The receptors assessed include residential dwellings at Woad Lane (to the south of the A180 on the edge of Grimsby) and on identified Greenfield areas 2 km from the high tide of the Humber Estuary and the Humber Estuary SPA. The assessment considers two comparison scenarios; without the development against the project in 2016 and without the project in 2016 against with the project in 2026.

17.6.4 The assessment predicts a negligible magnitude of impact at all of the residential receptors on Woad Lane except one where there is predicted to be no change as a result of the project.

17.6.5 The assessment predicts that the noise impact on dwellings outside of the specified Study Areas is likely to be negligible and predicts that the noise impact of the project on both the Humber Estuary SPA and the Greenfield areas is negligible. Overall it is predicted that the noise effect on all receptors will not be significant.

17.6.6 The noise assessment undertaken for the Stallingborough Link Road predicts that noise levels ($L_{A10,18hr}$) in the short term or long term may increase by more than 1 dB or 3 dB because of the construction of a new link road – presumably within the defined Study Areas.

17.6.7 The NSRs identified for the Proposed Development, as detailed at Chapter 8 of this ES, fall outside of the Study Area for the Stallingborough Link Road. The NSR to the Proposed Development that is closest to the Study Area for the Stallingborough Link Road is R2.

17.6.8 On the basis that the noise assessment undertaken for the Proposed Development predicts that the magnitude of impact (for both construction and operational noise) will

be negligible at this location (R2) and therefore the effect will be negligible adverse (not significant), it is considered that the construction and operation of the Proposed Development at the same time as the construction or use of the new Link Road would not result in a significant cumulative noise effect.

Cress Marsh SPA Mitigation (Development Ref: 2)

17.6.9 The application for the SPA Mitigation did not include a noise assessment. On the basis of the description of the development it is considered that there would only be the potential for noise impacts during the construction phase, no operation noise impacts are anticipated.

17.6.10 The Construction Management Plan submitted pursuant to Condition 7 to the SPA Mitigation Area planning permission details the best practice measures that will be adopted for noise control on-site during construction.

17.6.11 On the basis that the submissions made to NELC pursuant to the pre-commencement conditions attached to the planning permission for the SPA Mitigation Area have been approved by NELC (DM/0734/18/CND) subject to implementation of the approved details, it is considered highly unlikely that there will be any overlap between the construction phase of the SPA Mitigation Area and the construction phase of the Proposed Development.

17.6.12 Notwithstanding this, the noise assessment included at Chapter 8 of this ES predicts that construction noise effects at R1 (Poplar Farm) and R2 (Cress Cottage), both of which are in close proximity to the SPA Mitigation Area, would be negligible.

17.6.13 There is therefore no potential for significant cumulative noise effects.

Engineering works - Paragon House (Development Ref: 3)

17.6.14 A noise assessment was not undertaken in relation to the construction or use of the additional car parking areas at Paragon House. The ecological impact assessment undertaken considers the indirect effect of noise and vibration (at both the construction and operational phases) on designated and non-designated ecological features and on specific species. The residual effects of the proposed works on ecological receptors are considered to be not significant.

17.6.15 Condition 9 of permission DM/0147/16/FUL requires the submission of a Construction Management Plan (including noise mitigation measures) prior to the development commencing. There are no subsequent submissions pursuant to the planning conditions for this development available on the NELC planning webpage.

17.6.16 On the basis that a noise impact assessment was not required in support of this application and that the ecological assessment considered the effects of noise and vibration on ecological features in the vicinity of the site to be negligible, it is considered reasonable to conclude that the potential for significant cumulative noise effects is highly unlikely.

*Road Traffic*

17.6.17 The Transport Assessment undertaken in relation to the construction and use of the works assesses the impact of road traffic noise as a result of the works, namely the change in road noise as a result in increases in traffic volumes. The assessment predicts that the works and use of the site will result in a predicted increase in road traffic noise at North Marsh Lane of 0.0 dB(A) and on the A1173 of 0.2 dB(A).

17.6.18 The increase in road traffic flows as a result of the operation of the Proposed Development has been predicted to increase $L_{A10,18hr}$ noise levels by 0.2 dB at Poplar Farm and 0.3 dB at Mauxhall Farm (to the north of the A1173).

17.6.19 Cumulative noise levels from changes in road traffic flows from the operation of both developments are therefore likely to result in an increase of up to 0.5 dB which is assessed as a negligible impact, resulting in a negligible adverse (not significant) effect.

Great Coates Renewable Energy Centre (Development Ref: 8)

*Construction Noise*

17.6.20 The noise assessment undertaken for the Great Coates Renewable Energy Centre (GCREC) includes a receptor in common with the noise assessment included at Chapter 8 of this ES; R1 (Poplar Farm)

17.6.21 The highest construction noise level predicted at Poplar Farm as a result of the GCREC is 41 dB, which is assessed as not significant. The highest predicted noise level from the construction of the Proposed Development at Poplar Farm is 48 dB, resulting in a cumulative construction noise level of 49 dB $L_{Aeq}$. This is 5 dB below the measured ambient noise level resulting in an assessment of no significant cumulative operational effect should the construction of the GCREC and the Proposed Development coincide.

*Construction Vibration*

17.6.22 A construction vibration assessment was not undertaken for the GCREC. Condition 9 of permission DM/0195/17/FUL requires the submission of a detailed specification of the type of piling or foundations to be used and a scheme to mitigate effects of piling with regard to noise and vibration.

17.6.23 The construction vibration assessment included at Chapter 8 of this ES predicts that construction vibration levels for the Proposed Development will not result in any significant vibration at the residential NSRs. Predicted effects as a result of construction vibration at the ecological NSR (Humber Estuary) and the fields to the north and south of the Site are assessed as being of minor significance provided that mitigation is applied, either by seasonally restricting drop hammer piling or using alternative piling techniques.

*Operational Noise*

17.6.24 With regards to the operation of the GCREC, the noise assessment undertaken predicts operational noise to be 29 dB LAeq(t) at Poplar Farm. The highest predicted noise level from the operation of the Proposed Development at R1 (Poplar Farm) is 35 dB, resulting in a cumulative operational noise level of 36 dB $L_{Aeq}$. The lowest typical background noise level at Poplar Farm during the day is 48 dB $L_{A90}$. With a +3 dB penalty for intermittency, the cumulative rating level from the operation of the GCREC and the operation of the Proposed Development would fall below the measured background noise level resulting in an assessment of no significant cumulative operational effect.

*Road Traffic*

17.6.25 Changes in road traffic noise in relation to the construction and operation of the GCREC were not assessed in the submitted ES (either in the Noise Assessment or the Transport Assessment).

North Beck Energy Centre (Development Ref: 10)

*Construction Noise*

17.6.26 The construction noise assessment undertaken for the proposed North Beck Energy Centre (NBEC) predicts that construction noise levels at all of the NSRs to the NBEC will result in a negligible impact, with a neutral significance of effect. As all of the NSRs to the Proposed Development are located further away from the NBEC than the NBEC NSRs, noise impacts upon the NRSs to the Proposed Development as a result of the construction of the proposed NBEC will also be negligible.

17.6.27 The construction noise assessment included at Chapter 8 of this ES predicts that construction noise levels for the Proposed Development will result in no significant effect at the residential NSRs to the Proposed Development, with a neutral significance of effect.

17.6.28 During drop hammer piling works, the impact of increased noise levels at the field to the south of the Site) is assessed as moderate adverse, however mitigation is proposed to reduce this effect to minor adverse as outlined above. In addition, due to the distance from the NBEC site to this field, no significant cumulative effect is anticipated.

17.6.29 On the basis of the above, should the construction phases of the proposed NBEC and the Proposed Development overlap then no significant cumulative construction noise effects are predicted.

*Construction Vibration*

17.6.30 The construction vibration assessment undertaken for the proposed NBEC predicts that the levels of vibration are likely to result in an impact magnitude of negligible, with a neutral significance of effect at all NSRs to the proposed NBEC.

17.6.31 The construction vibration assessment included at Chapter 8 of this ES predicts that construction vibration levels for the Proposed Development will not result in any significant vibration at the residential NSRs. Predicted effects as a result of construction vibration at the ecological NSR (Humber Estuary) are assessed as being of minor significance, while effects on the fields to the north and south of the Site are predicted to be minor adverse during piling works provided the outlined mitigation is applied.

17.6.32 On the basis of the above, should the construction phases of the proposed NBEC and the Proposed Development overlap then no significant cumulative construction vibration effects are predicted.

*Operational Noise*

17.6.33 The operational noise assessment undertaken for the proposed NBEC includes an assessment of daytime and night time. The NBEC operational daytime noise assessment predicts a negligible impact at all of the NSRs to the proposed NBEC, with a neutral significance of effect. The NBEC operational night time noise assessment predicts a negligible impact all of the NSRs to the proposed NBEC, with a neutral significance of effect.

17.6.34 The operational noise assessment included at Chapter 8 of this ES considers three scenarios:

- Scenario 1: Worst-case hour during the day (0900 - 1000)
- Scenario 2: Worst-case hour at night including HGVs (0600 – 0700); and
- Scenario 3: Typical one-hour at night – no HGVs (2300 – 0600)

17.6.35 The assessment predicts that operational noise levels for the Proposed Development in all three scenarios will result in a negligible impact with a negligible significance of effect at the residential NSRs. Predicted effects as a result of operational noise at the ecological NSRs (including the Humber Estuary) are also assessed as being of minor adverse or negligible significance.

17.6.36 On the basis of the above, it is predicted that the operation of the proposed NBEC and the Proposed Development would not result in a significant cumulative noise effect.

*Operational Road Traffic*

17.6.37 With regards to operational traffic along the A1173, an increase in road traffic noise levels of +0.1 dB $L_{A10,18h}$ is predicted as a result of the operation of the proposed NBEC. The increase in road traffic flows as a result of the operation of the Proposed Development has been predicted to increase $L_{A10,18hr}$ noise levels by 0.3 dB at Mauxhall Farm (to the north of the A1173).

17.6.38 Cumulative noise levels from changes in road traffic flows from the operation of both developments are therefore likely to result in an increase of up to 0.5 dB which is assessed as a negligible impact, with a negligible significance of effect.

<u>Stallingborough Interchange – Business Park (Development Ref: 11)</u>

*Construction Noise*

17.6.39 The NSR to the proposed Business Park that is closest to one of the NSRs to the Proposed Development (R1 at Poplar Farm) is Location B (a residential receptor on North Moss Lane). These two locations are within 300 m of each other.

17.6.40 The noise assessment undertaken for the proposed Business Park predicts construction noise levels at North Moss Lane in the region of 49 dB $L_{Aeq}$. The highest predicted noise level from the construction of the Proposed Development at R1 (Poplar Farm) is 48 dB, resulting in a cumulative construction noise level of 52 dB $L_{Aeq}$. This is 2 dB below the measured ambient noise level.

17.6.41 It is therefore considered that the construction of the proposed Business Park at the same time as the construction of the Proposed Development would not result in a significant cumulative noise effect.

*Construction Road Traffic*

17.6.42 The noise assessment undertaken for the proposed Business Park does not include a quantitative assessment of construction road traffic noise due to the lack of available data. The assessment predicts that the impact of construction traffic would be negligible when compared to the traffic volumes on the surrounding network and concludes that there will be no significant effect at dwellings.

*Construction Vibration*

17.6.43 The construction vibration assessment undertaken for the proposed Business Park concludes that because the distance between the proposed Business Park and all of the NSRs is greater than 100 m, the level of vibration is predicted to be well below levels at which there is a risk of causing damage to buildings or disturbance to residents.

17.6.44 On the basis of the above, and the predicted construction vibration impacts of the Proposed Development as previously outlined, even if the construction phases of the proposed Business Park and the Proposed Development overlap, no significant cumulative construction vibration effects are predicted.

*Operational Noise*

17.6.45 The noise assessment undertaken for the proposed Business Park does not provide a quantitative assessment of operation / use noise from the units proposed as at the time of writing specific operators / tenants of the units were not known. NELC would require individual operators to submit noise assessments to ensure operating levels do not exceed established criteria.

17.6.46 With regards to the operation of the business park, noise from on-site HGV movements and idling HGV refrigeration units is predicted to be in the region of 43 dB $L_{Aeq}$ at Location B (North Moss Lane). The highest predicted noise level from the operation of the Proposed Development at R1 (Poplar Farm) is 34 dB, resulting in a cumulative operational noise level of 44 dB $L_{Aeq}$. The lowest typical background noise level at Poplar Farm during the day is 48 dB $L_{A90}$. With a +3 dB penalty for intermittency, the cumulative rating level from on-site HGV movements and idle HGV refrigeration units at the proposed Business Park and the operation of the Proposed Development would fall below the measured background noise level resulting in an assessment of no significant cumulative operational effect.

*Operational Road Traffic*

17.6.47 The noise assessment undertaken for the proposed Business Park predicts that the proposed development will result in a negligible increase in road traffic noise levels within the local area and therefore no significant effects have been identified.

17.6.48 With regards to operational traffic along the A1173, an increase in road traffic noise levels of +0.1 dB $L_{A10,18h}$ is predicted as a result of the operation of the proposed Business Park. The increase in road traffic flows as a result of the operation of the Proposed Development has been predicted to increase $L_{A10,18hr}$ noise levels by 0.3 dB at Mauxhall Farm (to the north of the A1173).

17.6.49 Cumulative noise levels from changes in road traffic flows from the operation of both developments are therefore likely to result in an increase of up to 0.5 dB which is assessed as a negligible impact, with a negligible significance of effect.

17.6.50 On the basis of the information available, the cumulative noise assessment does not identify any significant cumulative noise effects as a result of the Proposed Development and the other individual developments identified and assessed.

17.6.51 A qualitative assessment has been undertaken of the undertaken of the potential for significant cumulative effects on the NSRs identified for the Proposed Development as a result of all of the aforementioned developments collectively being progressed in parallel with the Proposed Development, the findings of which are summarised as follows:

- the construction noise assessment (see Chapter 8) concludes that the Proposed Development will have a negligible effect on surrounding residential receptors. Consequently, there will be no significant cumulative noise effects resulting from site construction.
- the construction noise assessment (see Chapter 8 and Chapter 10 Ecology and Nature Conservation) concludes that there will be minor (i.e. not significant) effects on surrounding ecological receptors (Humber Estuary and fields immediately to the north and south of the Site) as a result of the Proposed Development. Given the distance between the other developments in the cumulative assessment and the ecological receptors, there will be no significant cumulative noise effects resulting from site construction.

- the construction traffic noise assessment concludes that there will be negligible effects on surrounding receptors as a result of the Proposed Development. Consequently, there will be no significant cumulative noise effects resulting from construction traffic on public roads;
- the construction vibration assessment concludes that there will be negligible effects on surrounding residential receptors as a result of the Proposed Development. Consequently, there will be no significant cumulative vibration effects resulting from site construction;
- the construction vibration assessment concludes that there will be minor (i.e. not significant) effects on surrounding ecological receptors (Humber Estuary and fields immediately to the north and south of the Site) as a result of the Proposed Development. Given the distance between the other developments in the cumulative assessment and the ecological receptors, there will be no significant cumulative vibration effects resulting from site construction;
- the operational noise assessment (see Chapter 8) concludes that there will be negligible effects on surrounding residential receptors as a result of the Proposed Development. Consequently, there will be no significant cumulative noise effects resulting from site operation;
- the operational noise assessment concludes that there will be negligible effects on surrounding ecological receptors (Humber Estuary and fields immediately to the north and south of the Site) as a result of the Proposed Development. Given the distance between the other developments in the cumulative assessment and the ecological receptors, there will be no significant cumulative noise effects resulting from site operation;
- the operational traffic noise assessment concludes that there will be negligible effects on surrounding receptors as a result of the Proposed Development. Consequently, there will be no significant cumulative noise effects resulting from operational traffic on public roads; and
- the operational vibration assessment concludes that there will be negligible effects on surrounding receptors as a result of the Proposed Development. Consequently, there will be no significant cumulative vibration effects resulting from site operation.

Cumulative Assessment Summary

17.6.52 On the basis of the information available, the cumulative noise assessment does not identify any significant cumulative noise effects as a result of the Proposed Development and the other developments identified and assessed – both individually and collectively.

## 17.7 Traffic and Transport

17.7.1 The Transport Assessment (TA) undertaken and reported in Chapter 9 of this ES incorporates other development (defined as Committed Development) into the assessment scenario for the future year analysis and as such the assessment presented in Chapter 9 is inherently a cumulative impact assessment.

17.7.2 The TA future year analysis includes project specific traffic data from the following developments (based on available information at the time of assessment):

- Engineering works – Paragon House (Development Ref: 3)
- Renewable Power Facility – Kiln Lane (Development Ref 4:

- Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)
- North Beck Energy Centre (Development Ref: 10)
- Stallingborough Interchange - Business Park (Development Ref: 11)

17.7.3 The TA takes into account the opening of the Stallingborough Link Road (Development Ref 1) in 2022 and the associated re-distribution of traffic by undertaking sensitivity testing at key junctions within the study area (see Section 10 of Chapter 9).

17.7.4 As noted earlier in this Chapter, Development Ref: 6 (Waste Tyre Pyrolysis) and Development Ref: 9 (Waste to Energy - Immingham Railfreight) are proposed to occupy the same area (red line boundaries are around the same site). The approach adopted for the TA was therefore to ascertain which of the developments represents the worst case scenario in terms of trip generation and include that development in the assessment. The Transport Statement submitted in support of Development Ref: 6 as compared to the TA submitted in support of Development Ref: 9, shows that Development Ref: 6 would generate slightly more traffic in the AM and PM Peak hours and is therefore included in the assessment.

17.7.5 The TA future year analysis incorporates the following developments within the background growth applied to the 2018 baseline flows:

- Cress Marsh SPA Mitigation (Development Ref: 2)
- Selvic Shipping CHP Boilers (Development Ref: 5)
- Great Coates Renewable Energy Centre (Development Ref: 8)
- VPI Immingham Energy Park A (Development Ref 7)
- VPI Immingham OCGT DCO (Development Ref: 12)

17.7.6 The Committed Development incorporated into the future year analysis in the TA also includes some of the developments identified in the Long List (see Table 17.1) as these developments have been specifically identified as contributing to future traffic flows in the area.

- Hornsea Project One – additional area (DM/0153/17/FUL)
- Change of Use – Worldwide Way (DM/1050/16/FUL)
- Construction of access road – Land Adj Kiln Lane (DM/0717/16/FUL)
- Additional temporary construction area – Site of Wind Farm Compound (DM0153/17/FUL)
- Construction of 9 Lagoons - South Killingholme (PA/2018/155)
- River Humber Gas Pipeline Replacement Project (EN060004)
- A180 Port of Immingham Improvement (TWA 8/1/13)

17.7.7 Section 11 of Chapter 9 concludes that, having taken into account the identified Committed Developments as part of the future year analysis; it is not considered that the Proposed Development will have a material impact in terms of highway capacity or safety and that the proposals represent acceptable development in highways and transport terms. There is therefore no potential for significant cumulative traffic effects.

Cumulative Assessment Summary

17.7.8 On the basis of the information available, the cumulative transport assessment does not identify any significant cumulative traffic effects as a result of the Proposed Development and the other developments identified and assessed.

## 17.8 Ecology

Construction

*Losses of Functionally Linked Habitat*

17.8.1 There is the potential for cumulative effects on waterbirds using functionally linked habitat surrounding the Estuary in the absence of mitigation, should multiple schemes proceed that result in the loss of such habitat. Only one of the schemes considered on the cumulative effects shortlist was identified as potentially combining with the Proposed Development to result in a cumulative adverse effect through this pathway; this is the Stallingborough Link Road(Development Ref: 1), which will result in the loss of functionally linked habitat to the south of the Proposed Development.

17.8.2 The applicant for the Stallingborough Link Road scheme, North East Lincolnshire Council, (NELC), has committed to commuting a sum of money via NELC Local Plan Policy 9 to the South Humber Gateway strategic mitigation scheme, which will draw down 6.3 ha of mitigation habitat. With mitigation, there will therefore be no cumulative adverse effects on the Humber Estuary SPA/ Ramsar with the Proposed Development, as a result of the loss of functionally linked habitat.

*Noise and Vibration Disturbance to Functionally Linked Habitats*

17.8.3 The cumulative noise and vibration assessment (see section 17.6) concludes that the construction of the Proposed Development at the same time as the construction or use of the new Link Road would not result in a significant cumulative noise effect. As described above NELC has committed to commuting a sum of money to enable mitigation habitat to be created. With this mitigation, and taking into account the Applicant's proposed contribution to the South Humber Gateway strategic mitigation scheme (see Chapter 10), there is therefore no potential for cumulative adverse effects the Humber Estuary SPA/ Ramsar as a result of construction disturbance to functionally linked habitat.

Operation

*Changes in Air Quality*

17.8.4 Potentially significant cumulative effects on the Humber Estuary designated sites may occur where the cumulative PC exceeds the 1% screening threshold of the critical level (rounded up or down to the nearest whole number) and the Predicted Environmental Concentration (PEC) exceeds the relevant critical level/ load. Unless both these criteria are exceeded, no likely significant effects on habitats within the designated sites would be predicted either because the relevant assessment threshold would not be breached, or because the other plans/ projects scoped into the cumulative effects assessment would collectively make an imperceptible contribution to emissions/ deposition.

*Cumulative Emissions of Nitrogen Oxides (NOx)*

17.8.5 The air quality assessment has identified that the cumulative process contribution of NOx at the nearest saltmarsh habitat to the Proposed Development (receptors E1_1, E1_2 and E1_3 in Chapter 7: Air Quality) is between 6.8 and 7.6%. This therefore exceeds the threshold for insignificance and indicates that further assessment is required.

17.8.6 On this basis, the total contribution from all schemes to the habitat (the PEC) has been examined to determine actual deposition rates for the year. The cumulative PEC results in total NOx of 31.2 – 31.4 µg/m$^3$ at these locations, which also exceeds the critical level for all vegetation types from the effects of NOx of 30 µg/m$^3$. However, the cumulative PEC will remain below the critical load for saltmarsh; being a maximum of 16.5 kg N/ha/yr compared to a minimum critical load of 20 kg N/ha/yr. This is therefore assessed as a neutral effect on the Humber Estuary SPA/ SAC/ Ramsar/ SSSI with other plans/ projects (not significant).

17.8.7 Moreover, it is important to note that the experimental studies that underlie conclusions regarding the sensitivity of saltmarsh to nitrogen deposition, and the selection of 20 kg N/ha/yr as the minimum critical load have "… *neither used very realistic N [nitrogen] doses nor input methods i.e. they have relied on a single large application more representative of agricultural discharge*" (APIS website), which is far in excess of anything that would be deposited from atmosphere. For coastal saltmarshes such as those for which Humber Estuary SAC is partly designated, nitrogen inputs from air are not as important as nitrogen effects from other sources because the effect of any deposition of nitrogen from atmosphere is likely to be dominated by much greater flushes of more readily utilized nitrogen from marine, fluvial or agricultural sources. This is reflected on APIS itself, which states regarding saltmarsh that "*Overall, N deposition [from atmosphere] is likely to be of low importance for these systems as the inputs are probably significantly below the large nutrient loadings from river and tidal inputs*". In addition, the nature of intertidal saltmarsh in this area means that there is flushing by tidal incursion twice per day. This is likely to further reduce the role of nitrogen from atmosphere in controlling botanical composition.

17.8.8 An additional saltmarsh habitat receptor within the designated site (receptor E3_1) slightly exceeds the 1% process contribution threshold (1.2%), although the total PEC results in a cumulative contribution of 37.4 µg/m$^3$. However, as the baseline levels of NOx at this receptor are already exceeding the critical level (baseline level is 37.2 µg/m$^3$), this small additional contribution is not reasonably considered to result in any adverse effects on the designated site, in combination with other plans/ projects.

*Cumulative Nutrient Nitrogen (N) Deposition*

17.8.9 The air quality impact assessment has concluded that the annual N deposition rate (kg N/Ha/year) process contribution at the nearest saltmarsh habitat would be between 3.7% and 4.1% of the critical load at receptors E1_1, E1_2 and E1_3. As this is above the 1% insignificance screening threshold, it is therefore necessary to examine the output from the modelling in greater detail to establish whether this elevation in N deposition would result in any significant effects on the saltmarsh habitat.

17.8.10 The total cumulative annual N deposition predicted at these three receptors is 0.7 – 0.8 kg N/ha/yr, resulting from NOx and ammonia ($NH_3$), compared to the background deposition of 15.7 kg N/ha/yr. With the Proposed Development there would therefore be no exceedance of the critical load for this habitat type, which is 20 – 30 kg N/ha/yr. It is therefore assessed that N deposition resulting from the Proposed Development will result in a neutral effect on the Humber Estuary SPA/ SAC/ Ramsar/ SSSI with other plans/ projects.

*Cumulative Acid Deposition*

17.8.11 For acid deposition (keq/Ha/year), the air quality impact assessment identified that at the nearest sensitive receptors (sand dune habitats at E4_1, E4_2, E4_3, E4_4 and E4_5, E4_6) the cumulative process contribution would slightly exceed the 1% insignificance screening threshold for potential adverse effects on sensitive habitat

types within the Humber Estuary SAC/ SPA/ Ramsar/ SSSI (predicted to be between 1.4 and 1.5%). However, given the very small process contribution resulting from these schemes, it is assessed that there would be no significant effects on the Humber Estuary designated site as a result of acid deposition in combination with other plans/ projects.

*Cumulative Emissions of Sulphur Dioxide ($SO_2$)*

17.8.12 For $SO_2$, the air quality impact assessment identified that there would be exceedances of the 1% critical level insignificance screening threshold at receptors E1_1, E1_2 and E1_3 (nearest saltmarsh habitat) within the Humber Estuary SAC/ SPA/ Ramsar/ SSSI of 2.3 – 2.5%. However, the PEC for sulphur dioxide is not exceeded, and therefore it is concluded that there will be a neutral effect on the Humber Estuary SAC/ SPA/ Ramsar/ SSSI in combination with other plans/ projects.

17.8.13 As a result of the Air Dispersion Modelling used to inform the air quality assessment (see Appendix 7A in ES Volume III) and the cumulative air quality assessment undertaken, it is concluded that there would be no adverse cumulative air quality effects on the Humber Estuary SAC/ SPA/ Ramsar/ SSSI.

*Noise Disturbance to Functionally Linked Habitat*

17.8.14 The cumulative noise and vibration assessment (see section 17.6) concludes that the construction and operation of the Proposed Development at the same time as the construction or use of the new Link Road would not result in a significant cumulative noise effect. NELC has also committed to commuting a sum of money via Local Plan Policy 9 to the South Humber Gateway strategic mitigation scheme, which will draw down 6.3 ha of mitigation habitat. With this mitigation, and taking into account the Applicant's proposed contribution to the South Humber Gateway strategic mitigation scheme (see Chapter 10), there is therefore no potential for cumulative adverse effects the Humber Estuary SPA/ Ramsar as a result of operational disturbance to functionally linked habitat.

Cumulative Assessment Summary

17.8.15 On the basis of the information available, the cumulative ecology assessment does not identify any significant cumulative ecology effects as a result of the Proposed Development and the other developments identified and assessed.

## 17.9 Landscape and Visual Amenity

17.9.1 The landscape cumulative assessment assesses the cumulative effects on identified landscape and visual receptors within the Study Area. Receptors that have been assessed in the landscape and visual impact assessment (see Chapter 11: Landscape and Visual Amenity) as experiencing negligible adverse effects as a result of the Proposed Development have not been included in the assessment of cumulative effects, as it is considered unlikely that the addition of negligible adverse effects would lead to a significant cumulative impact.

17.9.2 The developments potentially giving rise to cumulative effects are listed in Table 17.2. They are allocated within Landscape Type (LT) 1: Industrial Landscape (NELC, 2015) and as such this LT is likely to experience cumulative effects. The detailed landscape cumulative assessment is contained within Tables 17.4 below.

17.9.3 For the assessment of operational effects, the anticipated year of opening has been selected as a worst case for cumulative landscape assessment (because there would be a greater amount of built development present in the landscape).

Cumulative Effects on Landscape Character

17.9.4 Cumulative effects on landscape character are assessed at identified landscape receptors within the 5 km Study Area. Landscape receptors that have been assessed as experiencing negligible effects as a result of the Proposed Development have not been included in the assessment of cumulative effects as set out above.

Cumulative Effects on Visual Amenity

17.9.5 For the assessment of cumulative visual impacts the following other developments have been scoped out as a result of no intervisibility with the Proposed Development, the scale of the cumulative development (mass/height) or distance:

- Cress Marsh SPA Mitigation (Development Ref 2) – due to the nature of the works proposed at ground level. No planting works are currently proposed;
- Selvic Shipping CHP Boilers (Development Ref 5) – due to small scale of the proposed works;
- VPI Immingham Energy Park A (Development Ref 7) – due to distance from the Proposed Development and lack of inter-visibility; and
- VPI Immingham OCGT DCO (Development Ref: 12) – due to distance from the Proposed Development and lack of intervisibility.

17.9.6 Potential cumulative visual effects of the Proposed Development in comparison with the future baseline visual context are considered in Table 17.5 to 17.11 below by reference to representative viewpoints. The assessments contained within these Tables 17.5 to 17.11 should be read in conjunction with Figures 11.6 to 11.15 (ES Volume II) which illustrate the baseline conditions at each viewpoint.

**Table 17.4: Assessment of cumulative landscape effects**

| | | |
|---|---|---|
| **LANDSCAPE TYPE** | **NORTH EAST LINCOLNSHIRE LANDSCAPE CHARACTER ASSESSMENT 2015** | Industrial Landscape :LT1 |
| **Construction** | | |
| **Sensitivity of receptor** | | Low |
| **Description of impact** | Other proposed developments will introduce further construction activities within the Landscape Type (LT). These will introduce additional mobile plant including piling rigs, heavy plant machinery and cranes and require further removal of grassland and vegetation within the LT. Construction activities related to the other developments will increase the geographical extent in which construction activity occurs and the density and massing of large scale structures under construction in relation to the Proposed Development. Additional indirect effects resulting from construction traffic will occur. Due to amount of construction activity introduced, there is potential to affect the tranquillity, perceptive qualities and landscape character of the LT. Such effects will be temporary, short term and reversible but occur across a considerable proportion of the LT. The magnitude of impact on the landscape character is assessed as medium, reflecting the geographical extent of change and the introduction of uncharacteristic landscape elements required by construction. | |
| **Predicted magnitude of impact** | | Medium |
| **Classification of effect** | | Minor adverse (not significant) |
| **Opening** | | |
| **Sensitivity of receptor** | | Low |
| **Description of impact** | Areas of industrial and commercial land use will be extended. Some agricultural land will be lost to extended large scale car parking behind Paragon House off Kiln Lane; agricultural land off Stallingborough Interchange will be lost to the proposed Business Park; a waste to energy plant will occupy the former Immingham Railfreight Terminal site with an adjacent energy recovery facility; an Energy From Waste plant will be introduced at Vireol PLC Energy Park Way and a single carriageway from the Moody Lane/Woad Lane to Hobson Way Roundabout will extend the road network within the LT. The other developments will extend the presence of large scale built form and associated hard and soft landscaping; road infrastructure; energy infrastructure including ancillary structures; hardstanding and car parking within the LT. A habitat area including storage lagoons will be introduced as part of a mitigation area. Several tall elements will be introduced by the other developments including stacks of 90 m and 55 m height, increasing the amount of tall structures already present. Changes resulting from the other developments will be long term and reversible. These will occur over an area larger than the Proposed Development in isolation and as a result, will have a larger effect on landscape character. As the LT is characterised by industry and the other developments are generally similar in nature and scale to existing developments and structures, the LT is considered to have low sensitivity to the other developments. In conjunction with the Cress Marsh SPA Mitigation Area the potential impacts on landscape character are considered to be low. Overall, due to these considerations, the cumulative effect on landscape character is regarded as minor adverse and not significant. | |
| **Predicted magnitude of impact** | | Low |
| **Classification of effect** | | Minor adverse (not significant) |

**Table 17.5: Assessment of cumulative effects on visual amenity – VP1**

| **VIEWPOINT 1: FARMSHOP HOTEL, A180** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 518804, 411844 | Hotel and Business users | 13.4 | 4.40 | East-north-east |
| **Other Developments**<br>• Stallingborough Link Road (Development Ref: 1)<br>• Renewable power facility - Kiln Lane (Development Ref: 4)<br>• Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)<br>• Great Coates Renewable Energy Centre (Development Ref 8)<br>• Waste to Energy – Immingham Railfreight (Development Ref: 9)<br>• North Beck Energy Centre (NBEC) (Development Ref: 10)<br>• Stallingborough Interchange – Business Park (Development Ref 11) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | **Value of view** | | **Visual susceptibility to change** | |
| Medium. | Low | | Medium | |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Medium range views of construction activities will be limited to upper level activities as a result of intervening low level vegetation. Construction activities will be visible to the front and right of the existing SHBPS in the far distance. Construction of the proposed Stallingborough Interchange Business Park will largely be screened by intervening vegetation. Construction of the stack within the Great Coates Renewable Energy Centre will be seen as separate from that related to the Proposed Development and viewed in the context of surrounding farmland extending from the near to far distance. Progressive construction of tall structures will increase their visual impact. The impact of construction phases will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | Low | |
| **Significance of effect at construction** | Hotel/Farmshop visitors | | Minor adverse (not significant) | |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | **Value of view** | | **Sensitivity of receptor** | |
| Medium | Low | | Medium | |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| Views of ground level structures will be limited by intervening vegetation. The Proposed Development will extend the presence of the existing SHBPS, and the stacks here and at the Great Coates Renewable Energy Centre will be new elements on the skyline. To the north, built form within the proposed Stallingborough Interchange Business Park will be largely characteristic of the existing skyline view extending south with large power lines on the horizon the north. Structures within the Proposed Development will extend the visual presence of the existing SHBPS and the stack at Great Coates Renewable Energy Centre will be isolated but prominent within the view. Impacts will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | Low | |
| **Significance of effect at operation** | Hotel/Farmshop visitors | | Minor adverse (not significant) | |

**Table 17.6: Assessment of cumulative effects on visual amenity – VP2**

| **VIEWPOINT 2: BRICKFIELD HOUSE, SOUTH MARSH RD** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 521293, 412788 | Residential | 8.7 | 1.75 | East-north-east |
| **Other Developments**<br>• Stallingborough Link Road (Development Ref:1)<br>• Engineering Works – Paragon House (Development Ref 3)<br>• Great Coates Renewable Energy Centre (Development Ref 8) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| High | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Oblique views of ground level construction operations in the far distance within the Proposed Development, Great Coates Renewable Energy Centre and North East Lincolnshire Link Road would be limited by intervening vegetation while those in the middle ground at the mitigation area and car parking in the middle distance will be largely obscured by a close proximity garden boundary beech hedge. The tallest structures to be constructed will progressively become more visible from upper storey gable end window. The impact of construction phases will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Low |
| **Significance of effect at construction** | | Residents | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| High | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| The Proposed Development and Great Coates Renewable Energy Centre will extend the presence of industrial structures in the view. These will be largely characteristic of the type of industry locally. The extended car parking at Paragon House to the north will largely be screened by roadside planting. Impacts will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Low |
| **Significance of effect at operation** | | Residents | | Minor adverse (not significant) |

**Table 17.7: Assessment of cumulative effects on visual amenity – VP3**

| **VIEWPOINT 3: CARR LANE PROW** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 521096, 412143 | Footpath users | 4.3 | 2.25 | North-east |
| **Other Developments**<br>• Stallingborough Link Road (Development Ref: 1)<br>• Great Coates Renewable Energy Centre (Development Ref 8) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Views of ground level construction operations would be limited by the A180 road embankment and associated scattered trees. Impacts would largely remain the same as the Proposed Development in isolation with the addition of the progressive increase in visual impact of the stack within Great Coates Renewable Energy Centre. The impact of construction phases will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Low |
| **Significance of effect at construction** | | Footpath users | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| Visual impacts will largely remain the same as at construction. The Proposed Development and Great Coates Renewable Energy Centre will increase the presence of industrial elements on the skyline. Massing and placement of the stacks will reduce this impact. Impacts will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Low |
| **Significance of effect at operation** | | Footpath users | | Minor adverse (not significant) |

**Table 17.8: Assessment of cumulative effects on visual amenity – VP4**

| **VIEWPOINT 4: PRIMROSE COTTAGE** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 521902, 412050 | Residential | 1.4 | 1.65 | North-east |
| **Other Developments**<br>• Stallingborough Link Road (Development Ref: 1)<br>• Engineering Works – Paragon House (Development Ref: 3)<br>• Renewable power facility - Kiln Lane (Development Ref: 4)<br>• Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)<br>• Great Coates Renewable Energy Centre (Development Ref 8)<br>• North Beck Energy Centre (NBEC) (Development Ref: 10) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| High | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Views of low level construction operations would be screened by property boundary trees and intervening vegetation to the north east but more open to views of developments located to the north west. The impact of construction phases will greater than for the Proposed Development in isolation and will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Low |
| **Significance of effect at construction** | | Residents | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| High | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| The completed Proposed Development, Great Coates Renewable Energy Centre and the cluster of developments to the north west of the property will increase the massing and size of structures within the view while increasing the dominance of industrial structures. Great Coates Renewable Energy Centre will be visually assimilated into existing structures. Impacts will be greater than the Proposed Development in isolation and will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Low |
| **Significance of effect at operation** | | Residents | | Minor adverse (not significant) |

**Table 17.9: Assessment of cumulative effects on visual amenity – VP5**

| **VIEWPOINT 5: BEECHWOOD FARM CARVERY** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 523357, 411478 | Inn/Restaurant | 15.3 | 1.85 | North |
| **Other Developments**<br>• Stallingborough Link Road (Development Ref: 1)<br>• Engineering Works – Paragon House (Development Ref: 3)<br>• Renewable power facility - Kiln Lane (Development Ref: 4)<br>• Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)<br>• Great Coates Renewable Energy Centre (Development Ref 8)<br>• North Beck Energy Centre (NBEC) (Development Ref: 10) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Views of low level construction operations would be screened by the existing Lenzing Fibres buildings and intervening vegetation. Clear views of operations above this level at the Proposed Development and Great Coates Renewable Energy Centre would be available. The impact of construction phases will largely be the same as for the Proposed Development in isolation and will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Low |
| **Significance of effect at construction** | | Visitors/Customers | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| The completed Proposed Development and Great Coates Renewable Energy Centre will increase the massing and size of structures within the view while increasing the dominance of industrial structures. Great Coates Renewable Energy Centre will be visually assimilated into existing structures. Impacts will largely be the same as the Proposed Development in isolation and will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Low |
| **Significance of effect at operation** | | Visitors/Customers | | Minor adverse (not significant) |

**Table 17.10: Assessment of cumulative effects on visual amenity – VP7**

| **VIEWPOINT 7: IMMINGHAM SOUTH, PROW** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 518577, 413771 | Residents and footpath users | 6.7 | 4.35 | East-south-east |
| **Other Developments**<br>• Renewable power facility - Kiln Lane (Development Ref: 4)<br>• Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)<br>• Waste to Energy – Immingham Railfreight (Development Ref: 9)<br>• North Beck Energy Centre (NBEC) (Development Ref: 10)<br>• Stallingborough Interchange – Business Park (Development Ref 11) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Long range views of construction will be limited to upper level activities as a result of intervening vegetation. Waste to Energy, Immingham Railfreight and North Beck Energy Centre will be the most visible developments, due to their mass, height of structures and close proximity. The views beyond to the Renewable power facility at Kiln Lane and the Waste Tyre to Energy Pyrolysis Plant will be partially screened by these developments. The impact of construction phases will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Low |
| **Significance of effect at construction** | | Residents and footpath users | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| There is no change to susceptibility at this assessment scenario. Therefore susceptibility is considered to be medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| The Proposed Development will be partially visible as a separate entity to the left of the existing South Humber Bank Power Station. The Waste to Energy, Immingham Railfreight and North Beck Energy Centre developments will increase the presence of industrial elements on the skyline to the north. These developments will extend the presence of industrial structures in the view. These will be largely characteristic of the type of industry locally. Impacts will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Low |
| **Significance of effect at operation** | | Residents and footpath users | | Minor adverse (not significant) |

**Table 17.11: Assessment of cumulative effects on visual amenity – VP8**

| **VIEWPOINT 8: MAUXHALL FARM, PROW** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 519177, 413200 | Residents and footpath users | 3.6 | 3.75 | East |
| **Other Developments**<br>• Stallingborough Link Road(Development Ref: 1)<br>• Engineering Works – Paragon House (Development Ref: 3)<br>• Great Coates Renewable Energy Centre (Development Ref: 8)<br>• Stallingborough Interchange – Business Park (Development Ref 11) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Construction activity at ground level will largely be obscured by intervening vegetation and landform. Progressive construction of the tallest structures within the Stallingborough Interchange Business Park will extend across a large proportion of the view with Engineering Works, Paragon House and the Proposed Development behind. The stack at Great Coates Renewable Energy Centre will be visible in the far distance and isolated from other development. Due to extent of construction activity in view resulting from the Business Park construction, the impact of construction phases will be larger than for the Proposed Development in isolation, while remaining short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Low |
| **Significance of effect at construction** | | Residents and footpath users | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| An extended presence of industrial and large scale structures would be observed, partially screened by intervening vegetation and the A1173. The uppermost sections of stacks and larger buildings within the Business Park in the middle distance will be visible, with the latter extending across the view. Lower parts will be obscured with traffic on the A1173 also filtering the view. Impacts will be greater than the Proposed Development in isolation due to the relatively close proximity of the Business Park and will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Low |
| **Significance of effect at operation** | | Residents and footpath users | | Minor adverse (not significant) |

**Table 17.12: Assessment of cumulative effects on visual amenity – VP9**

| **VIEWPOINT 9: MIDDLE DRAIN PROW** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 522276, 413642 | Footpath users | 5.0 | 0.65 | East-south-east |
| **Other Developments**<br>• Stallingborough Link Road (Development Ref: 1)<br>• Engineering Works – Paragon House (Development Ref 3)<br>• Renewable power facility - Kiln Lane (Development Ref: 4)<br>• Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)<br>• Great Coates Renewable Energy Centre (Development Ref 8)<br>• Waste to Energy – Immingham Railfreight (Development Ref: 9)<br>• North Beck Energy Centre (NBEC) (Development Ref: 10) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| Medium. | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| An open view of construction activities in the near to middle distance will be observed. Activities related to the Proposed Development will be seen to immediate left of the existing SHBPS. Construction of the uppermost parts of the stack within Great Coates Renewable Energy Centre will be viewed within the context of existing industrial development. The impact of construction phases will be similar to the Proposed Development in isolation and will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Medium |
| **Significance of effect at construction** | | Footpath users | | Moderate adverse (significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| Medium | | Low | | Medium |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| Views of the completed projects will result in the increased presence of industrial structures forming part of the skyline. These would be visually assimilated into the existing SHBPS. Resulting impacts will be similar to those for the Proposed Development in isolation due to distance and the prominence of the existing SHBPS within the views and will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Medium |
| **Significance of effect at operation** | | Footpath users | | Moderate adverse (significant) |

**Table 17.13: Assessment of cumulative effects on visual amenity – VP10**

| **VIEWPOINT 10: Irby Holmes Wood PRoW** | | | | |
|---|---|---|---|---|
| **Grid reference** | **Receptor type** | **Elevation (mAOD)** | **Distance from Proposed Development (km)** | **Direction of view** |
| 520833, 403354 | Footpath users | 71.5 | 10.2 | North-north-east |
| **Other Developments**<br>• Engineering Works – Paragon House (Development Ref 3)<br>• Renewable power facility - Kiln Lane (Development Ref: 4)<br>• Waste Tyre Pyrolysis – Immingham Railfreight (Development Ref: 6)<br>• Great Coates Renewable Energy Centre (Development Ref 8)<br>• Waste to Energy – Immingham Railfreight (Development Ref: 9)<br>• North Beck Energy Centre (NBEC) (Development Ref: 10) | | | | |
| **TWO PHASE CONSTRUCTION** | | | | |
| **Visual susceptibility to change** | | **Value of view** | | **Sensitivity of receptor** |
| High | | High | | High |
| **Size/ scale, duration and reversibility of impact at construction** | | | | |
| Long range views of construction activities related to new developments will be extremely limited due to distance and as a result of intervening vegetation for lower level activities. As the tallest structures are constructed they will be barely visible on the horizon within the wider panoramic view and the context of existing large scale structures and as an addition to the existing power station structures. The impact of each construction phase will be short term and reversible. | | | | |
| **Magnitude of impact at construction** | | | | Very low |
| **Significance of effect at construction** | | Footpath users | | Minor adverse (not significant) |
| **OPERATION** | | | | |
| **Visual susceptibility to change at operation** | | **Value of view** | | **Sensitivity of receptor** |
| High | | High | | High |
| **Size/ scale, duration and reversibility of impact at operation** | | | | |
| The extended presence of industrial and large scale developments would be observed at a distance that would make individual structures indistinguishable. Resulting impacts will be similar to those for the Proposed Development in isolation due to distance and prominence of the existing SHBPS and industrial infrastructure developments within the views. Impacts will be long term and reversible. | | | | |
| **Magnitude of impact at operation** | | | | Very low |
| **Significance of effect at operation** | | Footpath users | | Minor adverse (not significant) |

Cumulative Assessment Summary

17.9.7 The cumulative viewpoint assessment identifies significant effects at one viewpoint, as a result of both the Proposed Development and the listed 'other developments' that can be seen from this location:

17.9.8 Viewpoint 9 (Footpath users) would experience moderate adverse (significant) cumulative effects during construction and operation that are similar to those experienced at the receptor as a result of the Proposed Development in isolation (see Chapter 11). Visual impacts as a result of the proposed Business Park at Stallingborough Interchange and Great Coates Renewable Energy Centre would have negligible visual effects.

17.9.9 Minor adverse cumulative effects that are not significant are predicted at Viewpoints 1, 2, 3, 4, 5, 7, 8 and 10. These cumulative effects are generally similar to the effects of the Proposed Development in isolation and are therefore not considered to result in a significant cumulative effect.

## 17.10 Geology, Hydrogeology and Land Contamination

17.10.1 The following developments have been considered and are all anticipated to result in negligible geological, hydrogeological and land contamination effects individually:

- Stallingborough Link Road (Development Ref 1);
- Cress Marsh SPA Mitigation (Development Ref 2);
- Engineering works – Paragon House (Development Ref 3); and
- Great Cotes Renewable Energy Centre (Development Ref 8).

17.10.2 It is therefore considered that there is no potential for significant cumulative geological, hydrological or land contamination effects with the Proposed Development.

17.10.3 The following developments are located further than 1 km away from the Proposed Development and it is considered that there is therefore no potential for significant cumulative geological, hydrological or land contamination effects.

- Renewable power facility – Kiln Lane (Development Ref 4);
- Shipping CHP Boilers (Development Ref 5);
- Waste Tyres Pyrolysis – Immingham Railfreight (Development Ref 6);
- VPI Immingham Energy Park A (Development Ref 7);
- Waste to Energy Immingham Railfreight. (Development Ref 9);
- North Beck Energy Centre (Development Ref 10);
- Stallingborough Interchange – Business Park (Development Ref 11); and
- VPI Immingham OCGT DCO (Development Ref 12).

## 17.11 Cultural Heritage

17.11.1 For a cumulative impact to arise as a result of physical impacts during construction, another development would have to share a boundary with the Site in order to potentially impact the same buried archaeological resource during construction. Only one of the other proposed developments is immediately adjacent to the Site, so there is no potential for cumulative physical effects on archaeological resources as a result of any of the other identified developments.

17.11.2 Whilst the Stallingborough Link Road scheme shares a common boundary with the Application Area of the Proposed Development, the Main Development Area is located approximately 250 m to the north-east.

17.11.3 An aerial photograph (see Appendix 13B in ES Volume III), displayed at the entrance of the existing SHBPS, shows the Main Development Area during the construction of the existing SHBPS. In this photograph the Main Development Area is shown to have been subject to a topsoil strip and appears to have been used as a laydown area and construction compound. Due to the nature of the archaeological features identified in the adjacent field, it is considered that any features extending into this area would have been disturbed by the works relating to the construction of the power station. As a consequence, there will not be any effect on archaeology, resulting in a neutral effect.

17.11.4 The application for the Stallingborough Link Road did not include a Cultural Heritage Assessment and the consultation response from the ENGIE Partnership Archaeologist (dated 28/03/2018) states that "*the potential damage to archaeological deposits by this scheme will be minimal*". Planning permission DM/0094/18/FUL does not require the submission of any further details in relation to archaeology.

17.11.5 On this basis it is considered that there is no potential for significant cumulative effects on archaeology arising from either the construction or the operation of the Proposed Development.

17.11.6 With regards to setting, cumulative impacts can arise where the above ground built elements of a development, when viewed alongside the above ground built elements of the Proposed Development; contribute to changes to setting that affect an asset's significance (importance).

17.11.7 The Cultural Heritage assessment included at Chapter 13 of this ES concludes that the Proposed Development will have either no impact or minimal impact on all the heritage assets identified. In all cases the residual significance of effect is either minor or negligible adverse i.e. not significant.

17.11.8 The location and scale of the other developments identified in the area have been assessed and it is considered that due to the existing industrial context, the Proposed Development would not result in any significant cumulative effects upon the setting of any designated heritage assets within the study area.

## 17.12 Water Resources, Flood Risk and Drainage

17.12.1 The majority of the other developments included on the short list (Table 17.2) have been scoped out of the water resources cumulative assessment due to the distances from the Proposed Development Site and/or the lack of connectivity to water resource receptors.

17.12.2 The following three developments were given further consideration due to their proximity to the Proposed Development and the available information for each site was reviewed:

- Stallingborough Link Road (Development Ref: 1);
- Cress Marsh SPA Mitigation (Development Ref: 2); and
- Engineering works – Paragon House (Development Ref: 3)

17.12.3 All developments are required to accord with the National Planning Policy Framework (NPPF) (Department for Communities and Local Government (DCLG), 2018) and local drainage policies to ensure the risk of flooding from all sources does not increase; therefore no further cumulative assessment of flood risk has been undertaken.

17.12.4 Potential cumulative impacts to water resources during construction processes are associated with the generation of sediments and the release into the sewer drainage network, spillage and leakage of oils and fuels, leakage of wet concrete and cement, disturbance of contaminated land, suspended sediments, and disturbance to groundwater and foul drainage.

17.12.5 There is also the potential that changes to water resources and drainage arrangements, as a result of the identified developments, could result in additional discharges into local water courses and changes in overall water quality. However, existing regulatory controls at both the planning and permitting (if relevant) stage would require sufficient measures to be in place during construction and operation to manage the risk of accidents and to mitigate any potential effects to an acceptable level. All developments proposing to discharge into a watercourse are required to have a discharge permit from the Environment Agency. Through the Environment Agency's permitting procedures, and in conjunction with engagement with NELC and North East Lindsey Internal Drainage Board, any issues compromising the safeguarding of water quality would be addressed at that point and monitoring controls put in place to ensure ongoing compliance. On this basis it is not considered that the construction or operation of the Proposed Development will give rise to any significant cumulative effects in conjunction with the other developments identified.

## 17.13 Socio-Economics

17.13.1 All of the developments identified will generate additional employment opportunities and associated socio-economic benefits to add to the benefits of the Proposed Development during both construction and operation. Whilst there might be a short-term risk of temporary labour shortage or local accommodation shortage should multiple projects progress simultaneously, the cumulative socio-economic effects of the other developments in the short list, together with the Proposed Development, are considered to be significantly beneficial overall.

## 17.14 Waste

17.14.1 As part of its regional planning responsibilities, NELC (the Waste Disposal Authority) has a responsibility to plan for waste management and to ensure that sufficient sites are available to provide the necessary capacity during the planning period. Further capacity may also be provided on a regional basis by waste transfers within the wider region.

17.14.2 Within this wider context, the effects of waste generated from the Proposed Development on the regional capacity for waste management are at such a low level that no significant cumulative effects with other developments are anticipated.

## 17.15 Combined Effects Assessment

17.15.1 Section 8.2 of the Scoping Report submitted to NELC in July 2018 defines combined effects as 'those resulting from a single development, 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)'. There is no direct connection between the effects, other than that both could cause annoyance, whether experienced separately or together. Mitigation of combined effects is best achieved through management of operation to prevent the individual impacts themselves and reduce the likelihood of such interactions occurring. Table 17.14 below provides a qualitative assessment of the potential for combined effects.

**Table 17.14: Potential for Combined Effects**

| POTENTIAL COMBINED EFFECT | ASSESSMENT |
|---|---|
| Combined effects of air quality, noise, traffic and visual amenity impacts on human receptors | <u>Construction</u><br>The assessment of dust impacts on human receptors during the construction of the Proposed Development finds the residual effect to be negligible (not significant) in all cases. Noise effects at all residential receptors during construction of the Proposed Development are predicted to be negligible (not significant) and noise effects as a result of changes in road traffic levels during construction are also predicted to be negligible (not significant). Traffic related effects on roadside receptors during construction (severance, pedestrian amenity, fear and intimidation, highway safety and driver delay) are predicted to either be minor adverse (not significant) or negligible adverse (not significant). The assessment of visual impact on identified receptors finds that there will be a moderate adverse (significant) effect on users of the footpath at Viewpoint 9 (Middle Drain PRoW) during construction activities.<br><br>On the basis of these findings and taking into account that the construction phase is short-term it is not considered that human/residential receptors will experience significant combined effects as a result of dust, noise, road traffic and visual during the construction phase with the exception of users of the footpath at Viewpoint 9 (Middle Drain PRoW) where the visual effect in isolation is predicted to result in a moderate adverse (significant effect). It is not considered however that the combined effects considered here would alter that finding or worsen the effect.<br><br><u>Operation</u><br>The Air Quality assessment undertaken finds the effect of the operation of the Proposed Development on the identified human receptors to be either minor adverse (not significant) or negligible (not significant). Noise effects at all residential receptors during the operation of the Proposed Development are predicted to be negligible (not significant) and noise effects as a result of changes in road traffic levels during operation are predicted to be negligible (not significant). Traffic related effects on roadside receptors during operation (severance, pedestrian amenity, fear and intimidation, highway safety and driver delay) are predicted to either be minor adverse (not significant) or negligible adverse (not significant). The assessment of visual impact on identified receptors finds that there will be a moderate adverse (significant) effect on users of the footpath at Viewpoint 9 (Middle Drain PRoW) during the operation of the Proposed Development.<br><br>On the basis of these findings it is not considered that human/residential receptors will experience significant combined effects as a result of dust, noise, road traffic and visual during the operation of the Proposed Development with the exception of users of the footpath at Viewpoint 9 (Middle Drain PRoW) where the visual effect in isolation is predicted to result in a moderate adverse (significant effect). It is not considered however that the combined effects considered here would alter that finding or worsen the effect. |
| Combined effects of air quality/ dust, noise, water quality | <u>Construction</u><br>The Ecology chapter considers the combined effects of noise, air quality, water quality impacts on ecological receptors in the vicinity of the Site during construction. Potential for a significant noise effect on birds if piling is undertaken during the winter period has been identified and appropriate |

| POTENTIAL COMBINED EFFECT | ASSESSMENT |
|---|---|
| impacts on ecological receptors | mitigation will be implemented (such as using Continuous Flight Auger piling techniques or applying seasonal restrictions) to reduce the effect. The loss of semi-improved grassland from the Site is also identified as a significant adverse effect, which will be mitigated by the creation of species-rich grassland within the Site to reduce the effect. No significant residual effects are identified and no significant combined effects on ecological receptors are identified.<br><br><u>Operation</u><br>No significant effects or significant combined effects on ecological receptors are identified as a result of the operation of the Proposed Development. |

## 17.16 Limitations

17.16.1 Any limitations that were encountered during the individual assessments are detailed within each of the Chapters referenced.

17.16.2 The cumulative assessment is based on the currently available information on other potential or committed developments in the vicinity of the Proposed Development.

## 17.17 Conclusions

17.17.1 The assessment of cumulative effects has considered a number of other developments within the vicinity of the Site and the potential for significant cumulative effects to arise from the other identified developments together with the Proposed Development.

17.17.2 Through the consideration of the information available (at the time of assessment) it is concluded that there is the potential for:

- significant adverse cumulative visual effects at one receptor during construction (but no greater than for the Proposed Development in isolation).

17.17.3 All other assessment topics have concluded that there is no potential for significant cumulative effects to arise as a result of the construction or operational phases of the Proposed Development when considered alongside the other identified developments.

17.17.4 The assessment of combined effects has not identified any significant combined effects where the combination of effects would result in a different rating of effect to that already predicted in the individual technical assessment.

## 17.18 Referenced Planning Applications

- DM/0094/18/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P34286LJHRX00
- DM/0099/18/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P3BP97LJHY700
- DM/0147/16/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=O2FV60LJJC300
- DM/0195/17/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=OLSEPFLJJ9B00
- DM/1050/16/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=OFYXRQLJMCB00
- DM/0848/14/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=N9MK1VLJJO600
- DM/0449/17/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=OPQDU9LJMEY00
- DM/0333/17/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=ONOJKJLJKS400
- DM/0717/16/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=OAPUT0LJI3T00
- PA/2018/155 - https://apps.northlincs.gov.uk/application/pa-2018-155
- DM/0153/17/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=OLBAPXLJIUY00
- PA/2018/918 - https://apps.northlincs.gov.uk/application/pa-2018-918
- TWA 8/1/13 - https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010007/TR010007-000088-6.1.1%20Non-Technical%20Summary%20of%20the%20Environmental%20Statement%20(APP14a).pdf
- EN060004 - https://www.skanska.co.uk/expertise/projects/199402/River-Humber-Gas-Pipeline-Replacement-Project
- DM/0329/18/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P7SKY0LJLJ200
- DM/0628/18/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=PCFBTYLJHHS00
- DM/0026/18/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P2C4HALJ02B00
- DM/0105/18/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P3F907LJI1400

- DM/1146/17/FUL - http://planninganddevelopment.nelincs.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=P0LHNCLJFQN00
- PA/SCO/2017/155 - https://infrastructure.planninginspectorate.gov.uk/projects/north-east/vpi-immingham-ocgt/?ipcsection=advice