VikingCCS

Viking CCS Pipeline

Environmental Statement Volume II – Chapter 20: Cumulative Effects Assessment

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Applicant: Chrysaor Production (U.K.) Limited,
a Harbour Energy Company
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20.1 Introduction

20.1.1 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 Viking CCS Pipeline (hereafter 'the Proposed Development').

20.1.2 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 20-1) (hereafter referred to as the 'EIA Regulations') set out a requirement to consider the cumulative environmental effects of a development project.

20.1.3 A range of public sector and industry-led guidance is available on the approach to assessing cumulative effects but at present there is no single, agreed industry standard methodology. As the Proposed Development is classified as a Nationally Significant Infrastructure Project (NSIP), the approach to the assessment of cumulative effects follows the guidance set out in the Planning Inspectorate Advice Note Seventeen (Ref 20-2) and guidance set out in the Institute of Environmental Management and Assessment (IEMA) 'State of Environmental Impact Assessment Practice in the UK' Report (Ref 20-4).

20.1.4 IEMA's report (Ref 20-4) recognises two major sources of cumulative effects:

- **Intra-project effects:** These combined effects occur where a single receptor is affected by more than one source of effect arising from different aspects of the project. An example of an intra-project effect would be where a local resident is affected by dust, noise and traffic disruption during the construction of a scheme, with the resulting cumulative effect on amenity being greater than each individual effect alone; and
- **Inter-project effects:** These effects occur as a result of a number of developments, which individually might not be significant, but when considered together could create a significant cumulative effect on a shared receptor and will include developments separate from and related to the project. An example of such an effect may be where construction traffic relating to two different developments impact on users of a single road link.

20.1.5 This chapter provides an assessment of both intra and inter-project effects. The assessment presented in this chapter draws on the assessment of impacts provided in this *ES Volume II Chapters 6 to 18 (Application Document Ref. 6.2),* and information in the public domain relating to other known developments within the Study Area, or Zone of Influence (ZoI) that was available up to a cut-off date of 31 May 2023.

20.1.6 The cumulative assessment does not consider other developments that are already constructed and operating, as such existing developments are already accounted for in the baseline conditions established for the main assessments within this *ES Volume II Chapters 6 to 18 (Application Document Ref.6.2)* of this ES.

20.1.7 Consultation was undertaken with each of the relevant Local Planning Authorities (LPA's) including North Lincolnshire Council, North East Lincolnshire Council, East Lindsey District Council, West Lindsey District Council along with Lincolnshire County Council, giving each of them the opportunity to review and comment on the proposed list of cumulative schemes which have been identified.

20.1.8 This assessment has been undertaken by competent experts with relevant and appropriate experience. Further details of the Project Team is included *within ES Volume IV: Appendix 1.1 (Application Document Ref. 6.4.1.1*)

20.1.9 This chapter is supported by further information presented in *ES Volume IV: Appendix 20.1 (Application Document Ref. 6.4.20.1).*

20.2 Legislation, Policy and Guidance

20.2.1 Due to the potential for cumulative effects to occur as a result of the construction and operation (including maintenance) of the Proposed Development, a cumulative assessment has been undertaken as part of the EIA.

20.2.2 The national legislation, planning policy and guidance relevant to the cumulative effects assessment comprises:

Legislation

- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 20-1); and
- Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018 (SI 2018/1232) (Ref 20-2).

Policy

- Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 20-5); and
- Draft Overarching NPS for Energy (EN-1) March 2023[1] (Ref 20-6).

Guidance

- Planning Inspectorates' Advice Note 9: Rochdale Envelope (Ref 20-7);
- Planning Inspectorates' Advice Note 17: Cumulative Effects Assessment (Ref 20-2); and
- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref 20-1).

Requirement for Cumulative Assessment

20.2.3 The requirement for cumulative effects assessments is stated in the EIA Regulations as detailed below:

- Schedule 4 Part 5 of the EIA Regulations requires: "*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". The EIA Regulations state that this description of likely significant effects "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*";
- Paragraph 4.1.3 of the Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 20-4)) states that: "*In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the Infrastructure Planning Commission [now the Planning Inspectorate] should take into account:*
    - *its potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and*

[1] It is anticipated that this draft will be finalised and published in 2023. Accordingly, the updated version of the NPS EN-1 will be considered as part of the cumulative assessment in the ES.

- *its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts".*

- Paragraph 4.2.5 of NPS EN-1 goes on to state that when considering cumulative effects, *"the Environmental Statement (ES) should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence). The IPC may also have other evidence before it, for example from appraisals of sustainability of relevant NPSs or development plans, on such effects and potential interactions. […]"*; and
- Paragraph 4.2.6 of NPS EN-1 states that consideration should be given to *"how the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place";*
- Paragraph 4.1.5 of the Draft Overarching NPS for Energy (EN-1) March 2023 (Ref 20-6) expands on the text included in paragraph 4.1.3 of the Overarching National Policy Statement (NPS) for Energy (EN-1) (Ref 20-4)) relevant to cumulative impacts and states that: "*In considering any proposed development, and in particular when weighing its adverse impacts against its benefits, the Infrastructure Planning Commission [now the Planning Inspectorate] should take into account:*
  - *its potential benefits including its contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits; and*
  - *its potential adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy".*
- Paragraph 4.3.5 of the Draft Overarching NPS for Energy (EN-1) March 2023 (Ref 20-6) states that the ES should: *"The impacts of more than one development may affect people simultaneously, so the applicant should consider the cumulative impact on health in the ES where appropriate"; and*
- Paragraph 4.11.15 of the Draft Overarching NPS for Energy (EN-1) March 2023 (Ref 20-6) states that the Secretary of State should be satisfied, before consenting any potentially polluting developments, that: *"the effects of existing sources of pollution in and around the site are not such that the cumulative effects of pollution when the proposed development is added would make that development unacceptable, particularly in relation to statutory environmental quality limits".*

20.3 Scoping Opinion and Additional Consultation

20.3.1 A scoping exercise was undertaken in early 2022 to establish the content of the cumulative effects assessment and the approach and methods to be followed.

20.3.2 The Scoping Report records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria to be applied in the assessment to identify and evaluate the likely significant cumulative effects of the Proposed Development.

20.3.3 Following receipt of the Scoping Opinion, the following requirements presented in **Table 20-1** have been identified by the Planning Inspectorate which have been taken account of as part of the cumulative effects assessment presented in this chapter.

Table 20-1: Summary of the EIA Scoping Opinion in relation to Cumulative Effects

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
Paragraph 19.3.4	Zone of Influence	The Scoping Report does not explain the reasoning behind the application of a 250 metre (m) zone of influence at this preliminary review stage, and it is not clear how this aligns with the other scoping zones of influence applied in the technical chapters of the Scoping Report. The zone of influence applied should be fully justified in the ES.	The zone of influence/Study Area to be used for the ES has been reviewed, taking into account comments received via the Scoping stage and Statutory Consultation. Further details are included in **Table 20-8**.
Paragraph 19.3.7	Long list of other development	The Inspectorate understands from the information provided that the long list will be updated and revised as consultation with stakeholders is undertaken and the ES is prepared. The ES should identify a 'cut-off' date with respect to this process so that the currency of it can be understood.	The identification of a cut-off date for the Long List considered within the assessment is provided in section 20.1.5.
Paragraph 19.4.2	Interaction with wider V Net Zero Transportation and System (now the Viking CCS project)	The 'bridging document' should be submitted as part of the ES and will be an important document to ensure that the key findings are brought into the cumulative effects assessment where applicable, following the methodology for assessment described in the ES.	A 'bridging document' *(Application Document Ref 6.12)* has been prepared which provides an overview of the overall Viking CCS Project and how the onshore and offshore elements interact. This is based on the available information related to the Offshore Project, as of the cut-off date of 30 August 2023.
East Lindsey District Council	Cumulative Effects	In Section 19 Cumulative Effects other projects to consider are the Radioactive Waste Management (REM) proposal with the entry site for a nuclear storage facility at TGT. The applicant is also advised to further consult with	Although the former Theddlethorpe Gas Terminal (TGT) site has been identified as a candidate site for a Geological Disposal Facility, there are no formal planning applications or tangible information to consider in a cumulative effects assessment.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
		ELDC, LCC and National Grid on emerging energy proposals.	It is also not certain that this development will proceed at Theddlethorpe. ELDC and LCC have been consulted on the Long List (refer to **Table 20-4**).
Environment Agency	Cumulative Effects	Table 19-1 identifies Hornsea Project Four Offshore Wind Farm as a development with the potential for inter-project impacts. The Hornsea Project Four development boundary lies entirely north of the Humber Estuary and the information under the 'approximate distance' column therefore appears incorrect.	This error had been noted and Hornsea Project Four Offshore Wind Farm has been removed from the Long List.
Lincolnshire County Council	Cumulative Effects	The suggested methodology is acceptable but would draw attention to the potential for another major infrastructure project in the Theddlethorpe area and therefore the local community sensitivity to this project should be considered carefully when undertaking community and stakeholder engagement in this area.	Information on the approach to the public consultations held in regard to the Proposed Development is summarised in *ES Volume II Chapter 4: Consultation (Application Document 6.2.4)*.
North Lincolnshire Council	Cumulative Effects	The LPA is satisfied with the approach to the assessment of cumulative effects.	This is noted.
		It is noted that further discussions with the LPA is proposed with regards to agreeing a short list of projects likely to result in cumulation impacts with the proposed development and that will be included in the assessment of cumulative effects. This further liaison is welcomed.	North Lincolnshire Council has been consulted on the Long List (refer to **Table 20-4**) however, a response was not received.
Theddlethorpe All Saints and St	Cumulative Risk and Other Projects	Page 305 identifies projects that could have an impact or be impacted by the proposed project. This list considers projects that have been either	Developments that are more speculative or in early development cannot generally be included in the cumulative effects assessment

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
Helens Parish Council		approved of have been submitted to planning departments within a specific distance of the proposed pipeline route. The list though does not consider other project proposals that are currently in the public domain yet have not reached the governments planning portal but are known to Chrysaor UK Ltd. We understand that some of these projects may not be at an engineering level suitable for detailed impact assessment but from a cumulative risk perspective they should not be ignored within this assessment.	as there is typically insufficient information upon which to base any meaningful cumulative assessment. However, based on consultation feedback received, one potentially speculative scheme has been included for further consideration (GDF at Theddlethorpe).
	Cumulative Risk and Other Projects	The following projects are currently in proposal stage and there may be a lot more and further discussion with Lincolnshire County Council & Government groups should be undertaken to produce a full list: • Nuclear Waste Services - Geological Disposal Facility intends to use the same site which will require a new offshore shipping pipeline (transport of waste mined clay from under the sea bed) & new train lines to be installed running to the site (to unload Nuclear Waste Material). The Parish Councils current perception is that there are 2 potential routes for a train line to be installed & both have the potential to cross the proposed pipeline route at some point. The pipeline route would probably be installed years before a train line, but installed & operated	Refer to **Table 20-2** where these projects are further discussed.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
		within the operational phase of the C02 project site. • Without the GDF proposal the local community have bene informed over the past 2 years that the relevant Authorities were already in discussion with the department of transport under the Beachings reversal scheme for a train line to be installed as part of the overall Governments levelling up scheme. So, some joined up thinking at this stage would be most welcome. • Neptune Energy have submitted applications for the storage or C02 offshore using the existing CMS Murdoch pipeline & offshore infrastructure. This project may be using a different chemical process or reaction to create the Hydrogen but equally it could use the CO2 provided from the installation of the new Chrysaor UK Ltd pipeline. The EN070008 proposal uses the 36" LOGGS pipeline & offshore infrastructure, with the Neptune Energy using the CMS/Murdoch pipeline which is currently is owned by Chrysaor, so it is difficult to understand why is there no mention of it or cumulative risk assessment from either a competing, complementary or partnership project?	
	Cumulative Risk and Other Projects	This section does not also consider alliances formed with other companies whom the project may also become part of, or projects that have	The CO_2 to be transported in the Viking CCS Pipeline will be captured, conditioned and

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
		been refused planning but are going through appeal and therefore the list may be incomplete.	compressed by emitters, including Phillips 66 and VPI Immingham. Provision has been made for approximately five connections from emitters to the Immingham Facility. The facilities to capture, meter and compress any captured CO2 for transport would be performed by the emitters themselves, such as at the Humber refinery operated by Phillips 66, or the Immingham combined heat and power plant operated by VPI (Vitol). Proposals by Phillips 66 and VPI (Humber Zero) are part of separate applications under the Town and Country Planning Act 1990 and, as such, these works do not form part of the Proposed Development. These applications form part of the Long List of other developments considered by the cumulative effects assessment in *ES Volume II Chapter 20 (Application Document 6.2.20).*
	Cumulative Risk and Other Projects	If it has not already taken place, could Chrysaor UK LTD undertake and sponsor a minor project with Lincolnshire County Council with regards to identifying other potential uses for the excavation trenching that would need to take place for such a large disturbance should it be approved (i.e., make the most out of a 53 km pipeline excavation) so that additional trenching would not be needed for other future projects. This trenching could have facilities incorporated	For reasons of asset protection, it is not possible to include third party assets within the pipeline trench. The Applicant does recognise the potential impacts construction can bring and will aim to minimise these as far as possible.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
		into it (cable troughs or pipework routes for wind farm cabling, green electrical ring main, fresh water supply or digital communication conduits) for future projects to prevent disturbance of the Lincolnshire Countryside & reduce environmental impact from the carving up of the Country side by multiple individual developers.	
West Lindsey District Council	Cumulative Effects – Table 19-1	It is advised that the Humber Low Carbon Pipeline NSIP (EN070006) is scoped into the 'Other Developments with the Potential for Inter-Project Impacts'.	The Humber Low Carbon Pipeline NSIP (EN070006) forms part of the Long List.

20.3.4 The other prescribed consultees who commented on the cumulative effects assessment section of the Scoping Report comprised of East Lindsey District Council, Lincolnshire County Council, North Lincolnshire Council, Theddlethorpe All Saints and St Helens Parish Council, West Lindsey District Council, Environment Agency and Natural England. Within these comments, it was requested that various other projects are considered.

20.3.5 **Table 20-2** sets out these projects and explains how they have been considered and whether they have been added to the Long List.

Table 20-2: Additional Projects to Consider for Long List

Comment	Consideration	Added to Long List?
Nuclear Waste Services - Geological Disposal Facility at Theddlethorpe	Although the former Theddlethorpe Gas Terminal (TGT) site has been identified as a candidate site for a Geological Disposal Facility, there are no formal planning applications or tangible information to consider in a cumulative effects assessment. It is also not certain that this development will proceed at Theddlethorpe.	Yes
Neptune Energy Projects for the storage of CO_2 offshore using the existing CMS Murdoch pipeline and offshore infrastructure	It is likely this comment refers to Neptune Energy's DelpHYnus blue hydrogen and CCS project which did not receive Track 1 funding. The team have reviewed publicly available information relating to this scheme and it appears that no specific plans have been further developed, nor any planning applications made. On this basis, there is insufficient project information available to undertake an assessment of cumulative effects for this development.	No
Humber Low Carbon Pipeline	Humber Low Carbon Pipeline is currently being developed and comprises the construction of dual pipelines to transport CO_2 (to facilitate carbon capture, usage and storage (CCUS)) and hydrogen between Drax in North Yorkshire to a landfall point on the Holderness coast in East Riding of Yorkshire. Humber Low Carbon Pipeline is also an NSIP and is at the pre-application phase. The Humber Low Carbon Pipeline's Scoping Boundary is located approximately 2.6 kilometres (km) west of the Project's DCO Site Boundary. Humber Low Carbon	Yes

Comment	Consideration	Added to Long List?
	Pipeline has been added to the Long List.	
There are two potential routes for a train line to be installed & both have the potential to cross the proposed pipeline route at some point. The pipeline would likely be installed years before a train line and thus the train line would likely be installed during the operational phase of the Proposed Development	No additional details are currently available on this scheme, and thus as the realisation of it would remain many years away, it has not been considered further in the cumulative assessment.	No

Feedback on the Preliminary Environmental Information Report

20.3.6 Since the Scoping Report was produced and the Scoping Opinion received, both non-statutory and statutory consultation has taken place relating to the Proposed Development. The Statutory Consultation included the preparation of a Preliminary Environmental Information Report (PEIR), which included a chapter on Cumulative Effects (Chapter 20). More details are provided in *Chapter 4 Consultation (Application Document 6.2.4)* of this ES.

20.3.7 **Table 20-3** presents the feedback received on the PEIR during Statutory Consultation and provides a project response.

Table 20-3: Cumulative Effects Assessment on PEIR

Stakeholder	Stakeholder Comment	Project Response
North Lincolnshire Council	Having considered Chapter 19 of the PEIR, NLC would advise that consideration should be given as to whether the below proposed Development Consent Orders should be included: • Immingham Green Energy Terminal (DCO); • Immingham Eastern Ro-Ro Terminal (DCO); • VPI Immingham OCGT (DCO); • A160 – A180 Port of Immingham Improvement (DCO); • two storage tanks to store FAME (Bio-diesel) (application reference PA/2021/274); and • Monopile manufacturing facility (application reference PA/2021/1525).	All of these projects were considered as part of the Long List *(ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1)).* The Immingham Green Energy Terminal, Immingham Eastern Ro-Ro Terminal, Able UK Limited - Monopole Manufacturing Facility (PA/2021/1525) have been included in the Short List (**Table 20-9**).
	In addition to these projects, the LPA are aware that the Humber Nature Partnership now maintain an In Combination Database for the Humber Estuary. This was developed to aid in combination assessments for HRA's for projects adjacent to the Estuary but is a useful tool for	An email was sent to Humber Nature Partnership on 19 June 2023 to query the In Combination Database. A response

Stakeholder	Stakeholder Comment	Project Response
	cumulative impact assessments as part of an ES also. It may be worthwhile checking with the Humber Nature Partnership to see if their database flags any additional developments that have not been identified via other means.	was received on 22 June 2023, which stated the database would be checked against the Long List for anything missing. It was noted that the system is in Beta and the list of plans is not complete. On 31 July 2023, Humber Natureship Partnership granted the Project team with access to the database to check against the Long List. All developments in the database were reviewed however no new developments were added to the Long List as they were either already included or did not meet the criteria set out in Section 20.4.8.
Natural England	A 'Long List' of existing and proposed developments that fall within the ecological Zone of Influence was drawn up and a short list produced. The assessment once undertaken will be reported within the ES. The Long List will be kept under continual review up until the point of determination of the DCO application. Where schemes have been discounted, they will continue to be monitored to ensure that any changes to those schemes are identified and their omission from the short list is reassessed. The ZoI comprises 10km from the Draft Order Limits for Statutory designated sites, and 2km for all other receptors. However, the Habitat Regulations Assessment (HRA) which will be produced for the DCO application and assess the effects on Statutory designated sites resulting from the Project in combination with the projects in the Long List and so this will not be repeated in the full CIA. Natural England is happy to provide feedback.	This response has been noted and the Long List was reviewed on a regular basis up to the cut-off date of June 2023.

Additional Consultation

20.3.8 The relevant Local Planning Authorities (LPA) were consulted on 16 May 2023 on the production of the Long List of Other Developments to be considered as part of the Cumulative Effects Assessment. The relevant LPAs comprise of:

- North Lincolnshire Council;
- North East Lincolnshire Council;
- West Lindsey District Council;
- East Lindsey District Council; and
- Lincolnshire County Council.

20.3.9 The Long List of Other Developments is provided in *ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1).*

20.3.10 The following feedback was received which is presented in **Table 20-4** with a project response.

Table 20-4: Consultation with LPA

LPA	Date of Communication	LPA Comments	Project Response
North Lincolnshire Council	6 May 2023	North Lincolnshire Council responded to confirm that the list of Other Developments appears to be robust, and no additional application should be added to the list.	This is noted.
North East Lincolnshire Council	24 July 2023	North East Lincolnshire Council responded to confirm that only one Planning Application (DM/0508/23/OUT) had been identified which had already been shared with the Applicant via email on 11 July 2023 as a formal consultation for the outline planning application for seven bungalows which is directly positioned upon the proposed route of the Viking CCS Pipeline.	This application has been added to the Long List in *ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1)*.
West Lindsey District Council	22 May 2023	West Lindsey District Council responded to say there are no applications to add.	This is noted.
East Lindsey District Council	6 June 2023	East Lindsey District Council responded to say there were two applications to add to the Long List as detailed below: • N/105/01961/19 - Planning Permission - Erection of 237no. dwellings, associated garages, provision of 3no. attenuation ponds, areas of open space and children's play areas, erection of a pumping station and a substation, construction of vehicular and pedestrian accesses and internal access roads; and • N/105/00593/19 - Planning Permission - Erection of 2no. detached bungalows, 4no. pairs of semi-detached houses, 28no. detached houses, 1no. block of 6no. terraced houses, 3no. blocks of 4no. terraced houses, 1no. block of 4no. bungalows (60no. houses in total) and associated garage blocks, provision of an attenuation pond and play area and construction of internal access roads.	These two applications have been added to the Long List in *ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1).*
Lincolnshire County Council	8 June 2023	Lincolnshire County Council responded with a number of applications to add to the Long List as detailed below: • E.2328.13; Demolition of buildings together with the construction of a new fire station, training tower and associated hardstanding areas;	These additional applications added to the Long List in *ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1)* for consideration.

LPA	Date of Communication	LPA Comments	Project Response
		• PL/0091/20: For the expansion of existing SEND school, consisting of two storey new school building, internal re-modelling of existing school and extension/re-modelling of existing residential building; • E.0654.13: To construct an above ground gas handling treatment installation; • E.0800.13: Application seeking hazardous substances consent for the storage of natural gas; • E.0526.14: The Environment Act 1995 - review of mining site the first period review of the mining site at Saltfleetby a wellsite. Mineral permission relating to the site, and which is subject to review is (e)n158/0097/99; • E.0711.15: Erection of a new building following fire damage; • E.1377.15: Proposed sidetrack gas production borehole including drilling, testing and production phases; • E.2032.15: Application for hazardous substance consent; • E.0071.16: To replace fire damaged building for machinery storage and cardboard processing, accompanying application pl/0045/15; • E.1754.16: Retrospective application for a new propane refrigeration system; • E.2010.17: Retention of 2no. portable office buildings; • E.2097.17: Waste transfer station and aggregate storage facility; • E.1978.18: For the construction of a motor control centre (MCC) kiosk, ammonia kiosk and landscape bund; • PL/0068/19: Retention of 2no. stacked portable office buildings; • PL/0180/19: Application for prior notification of proposed demolition; • PL/0052/20: For prior approval of development ancillary to mining operations comprising the installation of processing facilities, including metering refrigeration unit manifold, glycol dehydration	

LPA	Date of Communication	LPA Comments	Project Response
		unit, acoustically - housed compression and generation equipment; • PL/0060/20: Installation and operation of an underground gas pipeline up to 750 metres in length, connecting the existing Saltfleetby/Theddlethorpe underground gas pipeline to the National Grid National Transmission System, Theddlethorpe, via the Uniper gas distribution; • PL/0073/21: For a sidetrack drilling operation from an existing borehole at Saltfleetby B wellsite to enable a lateral borehole to be drilled up to 1500m to the south west; • PL/0077/21: To install and operate oil-fired drying kiln and associated oil storage vessel with bunding; • PL/0012/22: For the demolition of dilapidated single storey buildings, construction of new extension to accommodate processing machinery; • PL/0036/22: Application for prior approval of development ancillary to mining operations, comprising the installation of new plant and equipment to support gas production operations; • EIA/36/22: For an anaerobic digestor and fertiliser production plant; and • PL/0037/23: For an anaerobic digestor and fertiliser production plant.	

20.4 Assessment Method

Assessment of Intra-project effects

20.4.1 The Planning Inspectorate's "Cumulative Effects Assessment - Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects (Ref 20-2) does not cover intra-project effects and so a bespoke approach is proposed.

20.4.2 The assessment of intra-project effects considers whether an individual environmental receptor or resource will likely be affected by more than one type of impact as a result of the construction and/or operation of the Proposed Development. The assessment methodology involves the identification of separate impacts or impact interactions associated with the Proposed Development affecting the shared receptors and resources, in order to understand the overall environmental effect of the Proposed Development.

20.4.3 The following environmental resources and receptor groups have been identified and considered in relation to the potential for more than one type of impact to be experienced by a single receptor:

- human receptors (residents, local community using community facilities);
- ecological receptors;
- geology and soils;
- water bodies; and
- users and operators of local businesses and tourism amenities.

Study Area

20.4.4 The study area for the assessment of intra-project effects is defined by the study areas used in each of the environmental topics as set out in *ES Volume II Chapters 6 to18 (Application Document 6.2).*

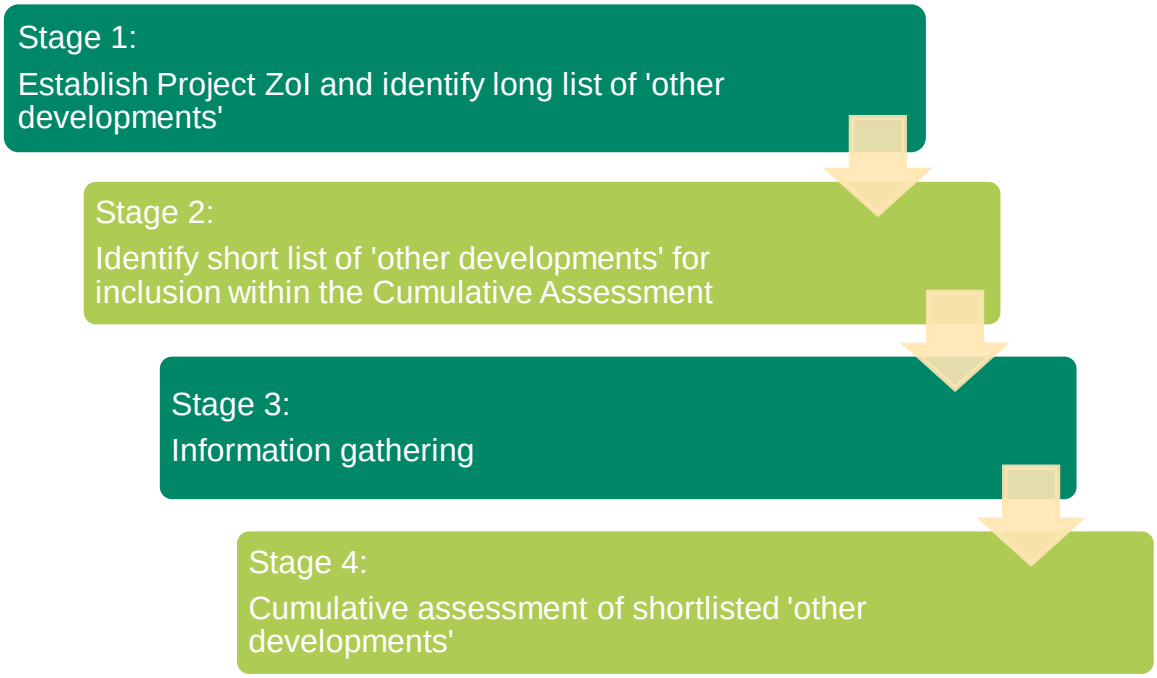
20.4.5 The potential effects on shared receptors will be identified by reviewing the topic conclusions within the environmental assessment topics, in order to establish where individual impacts may combine and result in likely significant effects. The significance of intra-project effects upon environmental receptors and resources will be determined using professional judgement, with input provided by those for the production of the individual topic assessments.

Assessment of Inter-project effects

20.4.6 The assessment of inter-project cumulative effects considers the effects on environmental resources and receptors that will likely occur from the changes arising from the Proposed Development in conjunction with those associated with other planned developments.

20.4.7 In accordance with the approach contained within Advice Note Seventeen (Ref 20-2), the approach to inter-project effects assessment will be undertaken in stages, as summarised in **Figure 20-1** and detailed below.

Figure 20-1: Staged Approach to Cumulative Assessment



Stage 1: Establishing the Long List of 'other existing development and/or approved development'

20.4.8 This stage involves establishing the project's Zone of Influence (ZoI) associated with the topic areas assessed, within which a long list of other planned developments and development allocations will be identified.

20.4.9 This initial stage 1 of the assessment of cumulative effects was guided by the following principles:

- understanding the limits of the effects associated with the Proposed Development and those of other planned developments;
- the sensitivity, value or importance of environmental resources or receptors, and their susceptibility to effects;
- whether different types of effect will occur and interact in a way that alters their significance;
- whether effects will be temporary or permanent in duration, what their timescales will be, and whether such effects will be intermittent or constant; and
- the degree of certainty and confidence relating to the effects.

20.4.10 The identified ZoI for each of the environmental and social topics has consequently been identified and is outline in **Table 20-8** below, in Section 20.5 of this chapter.

20.4.11 As part of this work, a Long List of other developments has been established based on research and consultation with LPA's. In accordance with Planning Inspectorate's Advice Note Seventeen (Ref 20-3), the search area for the Long List of developments was set at 15 km, consistent with the largest ZoI of the individual disciplines.

20.4.12 For planned developments within the search area, the following search criteria were applied during Stage 1:

- Local authority planning applications that represent 'major developments', the definitions and thresholds for which are set out in The Town and Country Planning (Development Management Procedure) (England) Order 2015 (Ref 20-8);

- Development Consent Order (DCO) applications for Nationally Significant Infrastructure Projects (NSIPs) in England, contained in the Register of Applications on the National Infrastructure Planning website (Ref 20-9);
- Any major development projects being progressed through other statutory procedures;
- Allocations identified in the adopted and emerging development plans of the local planning authorities; and
- Any other relevant development plans and projects.

20.4.13 The definition of 'major development' has been considered in line with the definition provided in the Town and Country Planning (Development Management Procedure) (England) Order 2015 (Ref 20-8):

""major development" means development involving any one or more of the following—

(a) the winning and working of minerals or the use of land for mineral-working deposits;

(b) waste development;

(c) the provision of dwellinghouses where—

(i) the number of dwellinghouses to be provided is 10 or more; or

(ii) the development is to be carried out on a site having an area of 0.5 hectares or more

and it is not known whether the development falls within sub-paragraph (c)(i);

(d) the provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more; or

(e) development carried out on a site having an area of 1 hectare or more;"

20.4.14 Developments have been included on the initial Long List of developments also based on criteria that indicate their certainty. The criteria are assigned in tiers which descend from Tier 1 (most certain) to Tier 3 (least certain) and reflect a diminishing degree of certainty.

Table 20-5: Certainty Criteria Tier 1, 2 and 3

Tier	Factors attributing to Other Development
Tier 1	Under construction. Permitted application(s) but not yet under construction. Submitted NSIP or TCPA application(s) not yet determined.
Tier 2	Projects where a Scoping Report has been submitted.
Tier 3	Projects on the Planning Inspectorate's Register of Projects where an EIA Scoping Request has not been made. Local development plan allocations (adopted and emerging) with appropriate weight being given as they move closer to adoption). Developments identified in other plans and programmes (as appropriate) which set the framework for future development consents / approvals.

20.4.15 With regards to other developments under construction, the Planning Inspectorate guidance (Ref 20-3) states that "*Where other projects are expected to be fully constructed and in operation before construction of the (Proposed Development) and the effects of those projects are fully determined, effects arising from them should be considered as part of the baseline and may be considered as part of both the construction and operational assessment. The ES should clearly distinguish between projects forming part of the dynamic baseline and those in the cumulative effects assessment*".

20.4.16 Consequently, where other developments would already be constructed and /or in operation and have been included in the baseline for the specialist topic assessments, they are not included in the cumulative assessments reported in this chapter.

20.4.17 Developments that are more speculative or in early development cannot generally be included as there is typically insufficient information upon which to base any meaningful cumulative assessment. However, based on consultation feedback received, one potentially speculative scheme has been included for further consideration (GDF at Theddlethorpe).

Stage 2: Establishing a shortlist of 'other existing development and/or approved development'

20.4.18 Stage 2 of the process involved a review of the Long List of planned developments, to identify those to be taken forward (shortlisted) into the cumulative assessment.

20.4.19 As per the Planning Inspectorate Advice note (Ref 20-2) the criteria used to determine Stage 2 should address:

- a) Temporal Scope;
- b) Scale and Nature of the development;
- c) Other factors; and
- d) Documentation

20.4.20 Additionally, professional judgement may also be used to supplement the threshold criteria and in order to avoid excluding 'other existing development and/or approved development' that is:

- Below the threshold criteria limits but has characteristics likely to give rise to a significant effect; or
- Below the threshold criteria limits but could give rise to a cumulative effect by virtue of its proximity to the proposed NSIP."

20.4.21 In determining which of the other developments should be shortlisted, a minimum level of information is necessary. In general, those developments of a sufficient size and scale and which have at least a Scoping Report, Environmental Assessment Report (EAR) or ES available were considered for shortlisting. For other developments which did not have this documentation available, consideration was made to their location, size, scale and potential for significant cumulative effects to occur based upon professional judgement. Where necessary some of these additional developments were also taken forward for further consideration.

20.4.22 The shortlisting process was informed by interrogation of available development information, including information on environmental effects, engagement with relevant stakeholders and the professional judgement of the environmental specialists undertaking the EIA.

20.4.23 Land allocations on their own have not been considered as there is no certainty that developers will come forward with projects within the timescale for the delivery of these sites

and the nature for such projects and their associated environmental effects are currently unknown.

20.4.24 The potential for temporal cross over was also assessed. Developments that are already in existence i.e., those which are completed and operational, are considered to form part of the environmental baseline conditions within which the Proposed Development will be implemented. They have therefore been accounted for through establishment of the current baseline within each technical assessment presented in *ES Volume II Chapters 6 to 18 of (Application Document 6.2)* and were therefore not considered for shortlisting.

20.4.25 Similarly, where other developments are expected to be completed prior to Proposed Development construction, and where the effects of those projects are fully determined, these have also been considered within the future environmental baseline adopted in the ES, in line with the Planning Inspectorate's Advice Note Seventeen (Ref 20-2).

20.4.26 Where individual technical disciplines have scoped out assessment of developments included on the short list for the purposes of their cumulative assessment, the reasoning for this is set out in the relevant section below and topic ES Chapter.

20.4.27 The justification for including or excluding developments from the Long List has been included in *ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1).*

Stage 3: Information Gathering

20.4.28 This stage will involve reviewing the available information about the shortlisted development(s), in order to establish the details of their likely environmental effects.

20.4.29 Information relating to the shortlisted developments will be collected from appropriate sources, which may include the local planning authorities, the Planning Inspectorate or directly from the applicant/developer. Information sought will include, but not be limited to:

- Proposed design and location information;
- Proposed programme of demolition, construction, operation and/or decommissioning; and
- Environmental assessments that set out baseline data and effects arising from 'other development'.

Stage 4: Assessment

20.4.30 Those developments that meet the inclusion criteria set out in the above stages have been incorporated into the final assessment. This has involved identifying where effects are likely to occur and assessing the significance of those effects on environmental receptors and resources, taking into account any mitigation measures.

20.4.31 This assessment work has been documented in line with Matrix 1 (Appendix 2) of the Planning Inspectorate's Advice Note Seventeen (Ref 20-2) which includes the following:

- A brief description of the development;
- An assessment of the cumulative effect with the Proposed Development;
- Proposed mitigation applicable to the Proposed Development including any apportionment; and
- The likely residual cumulative effect.

20.4.32 Where appropriate, a number of the technical topics have provided a written narrative of the assessment of cumulative effects which will be presented outside of the matrix.

Impact Assessment – Significant Criteria

20.4.33 The criteria for determining the significance of any cumulative effect has been based upon:

- The duration of effect, i.e., will it be temporary or permanent;
- The extent of effect, e.g., the geographical area of an effect;
- The type of effect, e.g., whether additive or synergistic;
- The frequency of the effect;
- The 'value' and resilience of the receptor affected; and
- The likely success of mitigation.

20.4.34 More detail is provided in the sections below.

Inter-Project Effects Significance Criteria

20.4.35 Advice Note Seventeen (Ref 20-2) states: "*The significance criteria used to assess likely cumulative effects should consider the capacity of environmental resources and receptors to accommodate changes that are likely to occur. The terminology used to determine significance should be explicit and ensure a clear understanding of the outcome of the CEA*".

20.4.36 The Inter-Project effects assessment considers the potential for significant residual inter-project effects with any required mitigation in place. The significance of inter-project effects has been determined using the general significance criteria outlined below in **Table 20-6** in conjunction with the specific methodology information contained within technical chapters of this ES (Chapters 6 to 18).

Table 20-6: Inter-Project Significant Effects General Criteria

Significance Criteria	Definition of Effect
Major	Where the cumulative impacts of the Proposed Development and other relevant developments upon an individual or collection of environmental receptors would be highly significant (positive or negative). Effects would be: • Permanent for receptors of high value.
Moderate	Where the cumulative impacts of the Proposed Development and other relevant developments upon an individual or collection of environmental receptors would be significant (positive or negative). Effects would be: • Permanent for a receptor or receptors of medium value; or • Temporary for a receptor or receptors of high value.
Minor	Where the cumulative impacts of the Proposed Development and other relevant developments upon an individual or collection of environmental receptors would not be significant, but would be noticeable (positive or negative). Effects would be: • Permanent for a receptor or receptors of low value; or • Temporary for a receptor or receptors of medium value.
Negligible	Where the cumulative impacts of the Proposed Development and other relevant developments upon an individual or collection of environmental receptors would be negligible and not significant (positive or negative).

20.4.37 The cumulative effects assessment only considers those receptors that would experience a residual effect associated with the Proposed Development. For receptors where the Proposed Development's residual effects are assessed to be negligible, it is considered that such receptors could not experience cumulative effects. For the purposes of the assessment

of cumulative effects during construction, a worst-case year of construction has been defined by the expected peak construction year for the Proposed Development, which would be 2026. Full details of significance criteria are provided within the individual topic chapters.

20.4.38 The assessment of cumulative effects during operation considers the total effects of the Proposed Development and the other identified developments operating concurrently.

20.4.39 As the Proposed Development has an estimated initial design life of 25 years (but with routine maintenance potentially extending the operational life beyond this), cumulative effects during decommissioning are not considered as it is not possible to predict the developments which would be in progress at that point in time.

20.4.40 Cumulative effects that are categorised as Moderate or Major, are considered significant effects in relation to the EIA Regulations.

Intra-Projects Effects Significance Criteria

20.4.41 The significance of intra-project effects has been determined by considering the following factors:

- Identifying receptors or resources which may be affected by more than one environmental topic; and
- Reviewing how the Proposed Development affects the receptor or resource, using the information and assessment work contained within each technical chapter.

20.4.42 The significance criteria classifications are outlined in the **Table 20-7** below.

Table 20-7: Intra-Project Significant Effects General Criteria

Significance Criteria	Definition of Effect
Major	Where the combined effects of the Proposed Development upon an individual or collection of environmental receptors would result in a highly significant (beneficial or adverse) effect. Effects would be due to impacts which would be, e.g.: • widespread/large scale for a receptor of high value/sensitivity; • permanent for a receptor or receptors of high value/sensitivity; • localised for a receptor or receptors of very high value/sensitivity; or • temporary or permanent for a receptor or receptors of very high value
Moderate	Where the combined effects of the Proposed Development upon an individual or collection of environmental receptors would result in a significant (beneficial or adverse) effect. Effects would be due to impacts which would be, e.g.: • permanent for a receptor or receptors of medium value; • localised for a receptor or receptors of high value; or • temporary for a receptor or receptors of high value.

Significance Criteria	Definition of Effect
Minor	Where the combined effects of the Proposed Development upon an individual or collection of environmental receptors would result in a beneficial or adverse effect. Effects would not be considered significant, but would be noticeable, e.g.: • permanent for receptors of low value; • localised for a receptor or receptors of medium value; or • temporary for a receptor or receptors of medium value
Negligible	Where the combined effects of the Proposed Development upon an individual or collection of environmental receptors would result in a negligible and not significant (beneficial or adverse) effect

20.4.43 The value of receptors is based on the highest value attributed by the relevant environmental topic assessments. For example, if a receptor is high value for landscape and moderate value for noise, it is deemed to be high value for the purpose of the intra-project assessment.

20.4.44 Combined intra-project effects that are categorised as Moderate or Major, are considered significant effects in relation to the EIA Regulations.

Assumptions and Limitations

Inter-Project Effects

20.4.45 The assessment of inter-project cumulative effects will be based on the interpretation and assessment of publicly available data and limited by the level of information available.

20.4.46 Where other schemes have been included which do not have any specific environmental reporting available (e.g., Scoping Report, ES or EAR), available information and professional judgment and experience of working on similar schemes has been used to inform the assessment.

20.4.47 Where environmental information is available for other development(s), it is relevant to note that depending upon the methodologies used, it may be limited in its compatibility with the assessment undertaken for the Proposed Development. Importantly, where information is insufficient or limited which has prevented or limited the Inter-Project Effects Assessment, this has been stated.

20.4.48 Throughout the cumulative assessment, professional judgement using a reasonable worst-case scenario (taking into account standard practice mitigation which is assumed would be incorporated into the other schemes), used in conjunction with the assessment methodology set out above.

Intra-Project Effects

20.4.49 The assessment of intra-project combined effects resulting from the Proposed Development have been identified by using the findings of the individual impact assessments undertaken for each technical topic presented in this ES (chapters 6 to 18). In particular, it is the residual effects from the construction, operation and decommissioning stages following the implementation of mitigation measures, which have been considered as part of the assessment.

20.5 Initial Screening of Other Development Projects and Allocations (Stage 1)

20.5.1 Stage 1 of the process involved establishing the Proposed Development's ZoI and preparing and updating the Long List of other committed developments, which had initially been identified within the "Viking CCS Pipeline Preliminary Environmental Information Report" (PEIR) (Ref 20-16).

Establishing the Zone of Influence

20.5.2 In order to commence the cumulative assessment, the ZoI associated with each of the environmental topic's areas being assessed within the Proposed Development's EIA have been established. These were determined by reviewing the information provided within each technical chapter relating to the applicable study area and the likely extent of impacts. The identified maximum ZoI for each environmental and social topic is presented in **Table 20-8**.

Table 20-8: ZoI Extents for Assessment of Potential Cumulative Impacts

Environmental Topic	Maximum ZoI	Zone of Influence and Justification
Ecology and Biodiversity	15km from DCO Site Boundary for international and national statutory designated conservations sites, and 2 km from the DCO Site Boundary for everything else	***Construction and Operation:*** The ZoI comprises 15 km from the DCO Site Boundary for Statutory designated sites, and 2 km for all other receptors. It is also worth noting that a standalone Habitat Regulations Assessment (HRA) has been prepared as part of the DCO application which assess the effects on Statutory designated sites resulting from the Proposed Development.
Landscape and Visual	Up to 3 km of the DCO Site Boundary	***Construction and Operation:*** The ZoI comprises 1 km either side of the DCO Site Boundary, and 3 km from the Immingham Facility, Theddlethorpe Facility and Block Valve Stations. The extent of the Study Area has been informed by a review of the maximum parameters of the Proposed Development, desk-based research, the appraisal work undertaken to date to inform the routeing and siting knowledge of the area, assessment of the effects in this ES and professional judgement.
Historic Environment	2 km of the DCO Site Boundary	***Construction and Operation:*** *Designated assets:* 2 km ZoI either side of the DCO Site Boundary *Non-Designated assets:* 1 km ZoI either side of the DCO Site Boundary Beyond these distances it is considered that designated and non-designated heritage assets will

Environmental Topic	Maximum ZoI	Zone of Influence and Justification
		not be impacted by the construction, or operation of the Proposed Development.
Geology and Hydrogeology	250 m of the DCO Site Boundary	***Construction and Operation:*** The ZoI extends to 250 m around the DCO Site Boundary. Interaction between the Proposed Development and receptors, or sources, of contamination beyond 250 m generally would not occur as a result of the ground conditions present in and around the Proposed Development, as a viable pathway between source and receptor is less likely to be present over greater distances.
Agriculture and Soils	DCO Site Boundary	***Construction and Operation:*** The ZoI comprises the area within the DCO Site Boundary excluding areas considered to be marine or intertidal which do not have the potential to contain soils or agricultural land. The agricultural land within the DCO Site Boundary is where there is potential for direct effects.
Water Environment	1 km of the DCO Site Boundary	***Construction and Operation:*** The ZoI extends 1 km around the DCO Site Boundary. This allows all waterbodies which may be directly impacted by the Proposed Development to be identified and included.
Traffic and Transport	8 km DCO Site Boundary	***Construction:*** The ZoI comprises the anticipated construction routes of which the furthest point away from the DCO Site Boundary is approximately 8 km. This represents the point where there may be an impact on existing traffic levels.
Noise and Vibration	500 m of the DCO Site Boundary	***Construction and Operation:*** The ZoI comprises 500 m around the Immingham Facility, Theddlethorpe Facility and Block Valve Stations and 300 m around the remainder of the DCO Site Boundary. These distances have been selected based on previous experience that operational noise sources are likely to be negligible at distances greater than 500 m and that construction noise predictions (based on guidance in BS 5228:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites - Part 1: Noise') are generally reliable up 300 m.
Air Quality	350 m of the DCO Site Boundary	***Construction:*** The ZoI comprises various distances from construction activities for human and ecological receptors, the largest of which is 350 m. The ZoI was informed by the Institute of Air Quality Management (IAQM) (2014, 2017 and 2019) guidance documents. ***Operation:*** Operational phase air quality effects are scoped out of the assessment.

Environmental Topic	Maximum ZoI	Zone of Influence and Justification
Climate Change	DCO Site Boundary	***Construction and Operation:*** The ZoI covers all Greenhouse Gas (GHG) emissions arising from activities undertaken within the DCO Site Boundary and indirect emissions from activities outside the DCO Site Boundary (for example, the transportation of materials to the Project boundary and embodied carbon within construction materials). The DCO Site Boundary covers all land, assets and infrastructure which constitute the Project, during construction and operation.
Socioeconomics	Various distances, including the extent of all LPA's	***Construction:*** The ZoI comprises of various subsets: • *Employment, Economic Growth and Training:* the local authority areas of North Lincolnshire, North East Lincolnshire, East Lindsey, and West Lindsey • *Recreational Routes and PRoWs:* all affected PRoWs • *Community Severance (schools, healthcare facilities, libraries):* 1 km buffer either side of the DCO Site Boundary • *Land take:* the DCO Site Boundary • *Amenity Value, Community Severance and Development Land*: 1 km buffer either side of the DCO Site Boundary The number of projects within the larger ZoI of the extent of the host Local Authorities may lead to a disproportionate level of appraisal and so the maximum ZoI is reported as the second largest, which is 2 km (1 km either side of the DCO Site Boundary). ***Operation:*** As an assessment of the operational phase impacts has been scoped out as agreed with the Planning Inspectorate. Further explanation is included in *Chapter 16: Socio-economics*
Health and Wellbeing	Extent of LPA's	***Construction and Operation:*** The ZoI comprises the Health Profiles of the host Local Authorities and for sensitive receptors, these are the same as socioeconomic, noise and vibration, air quality and traffic and transport. The number of projects within the larger ZoI of the extent of the host Local Authorities and traffic and transport ZoI may lead to a disproportionate level of appraisal and so the maximum ZoI is reported as the same as the topics aforementioned.
Materials and Waste	5km from DCO Site Boundary	***Construction:*** The ZoI comprises the DCO Site Boundary and the region within which waste management facilities are located and from where

Environmental Topic	Maximum ZoI	Zone of Influence and Justification
		construction materials may be sourced (East Midlands and Yorkshire and the Humber). ***Operation:*** Operational phase materials and waste management issues are scoped out of the assessment.

Identifying initial Long List of other developments

20.5.3 As project sizes and scales can vary, the Study Area for the assessment of cumulative effects is defined on a case-by-case basis, reflecting the type of project in question, and is proportionate to where significant effects can reasonably be considered to occur from both the Proposed Development and in combination with other projects, in line with the guidance outlined in paragraph 20.4.11. The largest ZoI is 15 km. The following areas of search were adopted as part of Stage 1 for the ES:

A. **NSIPs:** 15 km. This is based upon professional judgement from similar projects on the likely area for which other large scale infrastructure projects may result in significant cumulative effects; and

B. **Town and Country Planning Application (TCPA):** 4km. This is based upon a review of the environmental assessment topic ZoI's (as presented in **Table 20-5**) and the likely maximum distances for any impacts to occur.

20.5.4 This preliminary review, and subsequent update of the Long List, used data sources including the National Infrastructure Planning website (Ref 20-8 *HM Government*, 2015. The Town and Country Planning (Development Management Procedure) (England) Order 2015. Available at: https://www.legislation.gov.uk/uksi/2015/595/made **Accessed Auguste 2023.**

Ref 20-9 Planning Inspectorate, Register of applications. Available at: https://infrastructure.planninginspectorate.gov.uk/projects/register-of-applications/ **Accessed Auguste 2023.**

20.5.5 **Ref 20-10**) and planning portals for North East Lincolnshire Council, North Lincolnshire Council, West Lindsey District Council, East Lindsey District Council and Lincolnshire County Council (Ref 20-11 to Ref 20-15). A detailed copy of this Long List of potential cumulative schemes is provided in *ES Volume IV: Appendix 20.1 (Application Document 6.4.20.1).*

20.5.6 During the completion of the ES, the Long List of other developments continued to be updated with additional developments or information that emerged (up until a cut-off date of May 2023). The Long List of schemes identified within each LPA was shared with them via email to enable them to review the list and provide any comments. This ensured that the final Long List of schemes presented within this ES was as accurate as possible.

20.5.7 Each development within the Long List was reviewed to determine its status at the time of undertaking the assessment (May 2023) and was assigned a final status and tier, as described in **Table 20-5**, informed by the guidance and levels presented within Advice Note seventeen (Ref 20-2).

20.5.8 Based on a review of the initial Long List of developments, it was considered that potential exists for some of these to generate cumulative impacts with the Proposed Development based on their location, scale and/or their likely construction and operational timescales. This is discussed further in the next section.

20.6 Identify short list of 'other developments' for inclusion within the Cumulative Assessment (stage 2)

20.6.1 The developments included in the shortlist and progressed to Stages 3 and 4 of the cumulative effects' assessment are listed in **Table 20-9** below. This short list of other developments was established following the methodology highlighted in paragraphs 2.4.16 to 2.4.23 above.

20.6.2 In total, 43 other developments were shortlisted for further assessment.

Table 20-9: Short List of Other Developments with the Potential for Inter-Project Impacts taken forward to Stage 3 and 4 Assessment

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
Nationally Significant Infrastructure Projects						
#DCO-5	TR030007	Immingham Eastern Ro-Ro Terminal A new roll-on/roll-off facility comprising a new jetty with up to four berths, improved hardstanding, Terminal buildings and an internal side bridge to cross over existing port infrastructure.	Pre-examination stage, construction not likely to start until 2026 at earliest.	TR030007 Scoping Boundary is located approximately 13.5 km east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Yes – Scoping Report available.
#DCO-7	EN070006	Humber Low Carbon Pipelines (previously developed by National Grid Ventures) A new onshore pipeline network to transport captured carbon dioxide from the region's emitters for safe subsea storage and to enable industries to fuel-switch from fossil fuels to low carbon hydrogen.	At the pre-application stage, DCO submission expected Q3 of 2023. Indicative construction period lasts for 44 months, with construction to commence no earlier than 2025.	EN070006's Scoping Boundary is approximately 2.6 km west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Yes – Scoping Report available.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
#DCO-8	TR030008	Immingham Green Energy Terminal (Associated British Ports) The Project comprises a new liquid bulk import terminal and associated processing facility, the purpose of which is to deliver a green hydrogen production facility. Imported ammonia will be stored and processed at the site to create green hydrogen, for onward transport to filling stations throughout the UK. Key project infrastructure comprises; a new approach trestle; jetty superstructure and topside infrastructure; and land side processing infrastructure.	At the pre-application stage, Scoping Report submitted to the Planning Inspectorate on 30 August 2022. DCO submission expected Q3 2023.	TR030008 Scoping Boundary is located approximately 2.2 km south east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Yes – Scoping Report available.
North East Lincolnshire Council						
#NELC CULM-1	DM/0211/20/REM	Keigar Homes Ltd – Residential Development off Station Road, Habrough. Reserved matters application following DM/0950/15/OUT (Outline application for a residential development of up to 118 dwellings, with access to be	Approved – September 2021.This development is to commence within three years of date of permission.	Approximately 1.3 km east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for	Non EIA Development. Available environmental information includes: • Noise Impact Assessment

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		considered) to erect 118 dwellings with appearance, landscaping, layout and scale to be considered.			cumulative effects to occur.	and Mitigation; and • Surface Water Drainage Strategy Plan
#NELC CULM-2	DM/1175/17/FUL	Peter Ward Homes – Brocklesby Avenue Habrough Road Residential development for 145 dwellings with associated parking, landscaping and emergency vehicular access only onto Mill Lane (amended plans and documents January 2019).	Approved – 23 December 2019. Construction of this development has commenced.	Approximately 380 m east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Traffic Assessment; • Transport Assessment; • Travel Plan; • Geophysical Survey (Archaeology); • Archaeology Written Scheme of Investigation • Air Quality Assessment; • Ecology Report;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Arboricultural Report; and • Wintering Bird Survey.
#NELC CULM-3	DM/0696/19/FUL	Cyden Homes – Residential development at Midfield Road, Humberston. Erection of 225 dwellings with access off Midfield Road and Andrew Road with ancillary parking, garaging and associated infrastructure and widening of Andrew Road (additional information supplied: Habitat Regulations Assessment June 2022) - amended plans and information July 2022	Pending consideration – application validated 15 August 2019. Amended plans and information were submitted in May 2023.	Approximately 4 km north-east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Transport Assessment; • Travel Plan; • Habitat Regulations Assessment; • Wintering Bird Survey; • Heritage Assessment; • Ecological Report; • Arboricultural Report; and • Drainage Statement.
#NELC CULM-5	DM/1240/21/FUL	Barratt York – New Waltham Phase 2 Residential Development	Approved - 24 August 2022. This	Approximately 3.21 km north	Potential for there to be overlap of the	Available Environmental

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		Erection of 227 dwellings, garaging, creation of new vehicular access on Louth Road, landscaping and associated works (Amended Plans and Description to include 3 additional units).	development to commence within three years of permission. Construction of this development has commenced.	of the DCO Site Boundary.	construction and operational phase therefore potential for cumulative effects to occur.	Information includes: • Air Quality Assessment; • Flood Risk Assessment; • Arboriculture Impact Assessment; • Transport Assessment; and • Ecological Appraisal.
#NELC CULM-6	DM/0026/18/FUL	North Beck Energy Ltd – North Beck Energy Centre 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.	Approved – 12 October 2018. This development is to commence within five years of permission. Construction has not yet commenced.	Approximately 3km east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Transport Assessment; • Environmental Statement; and • Flood Risk Assessment.
#NELC CULM-7	DM/1145/19/FUL	Engie - NEL Energy Park	Approved – 6 November 2020. This	Approximately 534m east of	Potential for there to be overlap of the	Available Environmental

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		Construction and operation of an energy park comprising photovoltaic (PV) solar panels together with energy (battery) storage and associated infrastructure	development is to commence within three years of the permission. This development appears to have recently commenced in July 2023.	the DCO Site Boundary.	construction and operational phase therefore potential for cumulative effects to occur.	Information includes: • Geophysical Survey Report; • Landscape and Visual Appraisal; • Agricultural Land Quality Report; • Glint and Glare Report; • Construction Traffic Management Plan; • Historic Environment Appraisal; • Flood Risk Assessment; • Topographic Survey; • Bat Surveys; • Winter Walkover Survey;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Ecological Impact Assessment; • Protected Species Survey; • Extended Phase One Habitat Survey; • Bird Surveys; • Archaeological Report; and • Archaeological Mitigation Strategy.
#NELC CULM-8	DM/0105/18/FUL	Engie – SHIIP Stallingborough Interchange 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	Approved – 12 October 2018. The construction of the access road has commenced.	Approximately 1.9km east of the DCO Site Boundary	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Statement; • Winter Birds Survey; • Habitat Regulations Assessment;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		highways. Full application for the creation of a new roundabout, new access roads, associated highway works, substations, pumping stations, drainage and landscaping. (Amended FRA and Drainage Strategy July 2018).				• Flood Risk Assessment; and • Framework Travel Plan.
#NELC CULM-9	DM/0198/20/REM	Cyden Homes – Proposed Residential Development at Land Off Larkspur Avenue Reserved matters application following DM/0378/15/OUT (Outline planning application with means of access to be considered for the construction of up to 250 residential dwellings, a new primary access with Stallingborough Road and secondary/emergency access via Larkspur Avenue, public open space, and landscaping, surface water drainage attenuation and associated works) to erect 150 dwellings, play equipment, public open space and infrastructure with appearance, landscaping, layout and scale to be	Approved – 5 February 2021. Construction has commenced.	Approximately 2km east of the DCO Site Boundary	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Drainage Statement; • Topographical Survey; and • Landscape and Ecology Layout.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		considered (Amended Plans January 2021)				
#NELC CULM-12	DM/0899/21/FUL	Grimsby Solar Farm – Aura Power Install solar farm with associated works and infrastructure to include ground mounted solar panels, access tracks, inverters, transformers, storage units, substation compound, underground cables and conduits, temporary construction compound, perimeter fencing and planting scheme	Approved – 25 November 2022. Construction is not anticipated to start until 2024.	Approximately 190 m north east of Section 2 of the DCO Site Boundary, north of Aylesby.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Report; • Flood Risk Assessment; • Landscape and Visual Appraisal; • Cultural Heritage Assessment; • Noise Assessment; • Glint and Glare Assessment; • Archaeological Report; and • Habitats Regulations Assessment.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
#NELC CULM-20	DM/0728/18/OUT	Brocklesby Estate – Residential Development on Land East of Stallingborough Road, Immingham. Outline planning application for the development of up to 525 residential dwellings together with an extra care facility for the elderly with up to 80 units with access to be considered.	Approved – 12 November 2020. This development is to commence within three years of date of permission. Construction has not yet commenced.	Approximately 450m east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Sustainable Drainage Strategy; • Landscape and Visual Appraisal; • Archaeological Evaluation; • Archaeological Geophysical Survey Report; • Tree Survey Report; • Travel Plan; • Transport Assessment; • Sustainability Statement; • Noise Impact Assessment; • Geo-Environment

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						al Assessment Report; • Heritage Assessment • Flood Risk Assessment; • Ecological Appraisal; and • Air Quality Assessment.
#NELC CULM-24	DM/0118/15/OUT	Monmouth Properties - Residential Development on Land at Toll Bar New Waltham. Outline application with access to be considered for residential development (of up to 400 dwellings) including the provision of a small corner shop, open space and associated infrastructure.	Granted at Appeal – 22 November 2017. Development cannot commence without the discharge of conditions which do not appear to have been submitted for approval.	Approximately 3km of the DCO Site Boundary	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Tree Survey; • Great Crested Newt Survey; • Flood Risk Assessment; • Transport Assessment; • Phase One Habitat Report;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Landscape and Visual Appraisal; and • Agricultural Land Classification Survey.
#NELC CULM-28	DM/0769/22/FUL	CHI Investments – The Willows Construction of new foul sewer and associated works	Validated - 1 December 2022 - Pending Consideration.	Approximately 209m east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Ecology Report; and • Flood Risk Assessment.
#NELC CULM-31	DM/1133/17/OUT	Humberside Land Developers Ltd - Residential Development in Laceby Outline application for 152 dwellings with means of access to be considered, including an emergency vehicular access onto Charles Avenue. (amended Transport Assessment and Travel Plan 13 April 2018)	Approved – 5 August 2019. This development is to commence within three years of the date of permission.	Approximately 580m east of the DCO Site Boundary (m)	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Flood Risk Assessment; • Tree and Hedgerow Survey; • Travel Plan;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Transport Statement; • Archaeological Assessment; • Odour Report; and • Landscape Appraisal.
#NELC CULM-33	DM/1167/16/FUL / AP/001/19	<u>Cyden Homes – Residential Development Land off Brigsley Road, Waltham</u> Hybrid application to include Full Planning for 194 dwellings (houses and bungalows) and an Outline application to erect 5 detached dwellings with associated works including foul pumping station, landscaping, public open space, parking areas and garaging (Amended plans for layout, road details, landscaping and Transport Assessment - 24th November 2017)	Appeal Allowed with Conditions – 6 November 2020. Conditions have not yet been discharged.	Approximately 1.3km east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Transport Assessment; • Travel Plan; • Noise Impact Assessment; • Landscape and Visual Impact Assessment; • Landscape and Biodiversity Management Strategy;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Phase One Site Appraisal; • Flood Risk Assessment; • Arboricultural Report; • Ecology and Protected Species Survey; • Drainage Strategy Report; and • Archaeological Evaluation Report.
#NELC CULM-38	DM/0118/23/FUL	Land Developers (Lincs) Ltd – Residential Development at Land off Field Head Road, Laceby Erection of 60 dwellings including access from Fieldhead Road with emergency vehicular access onto Caistor Road and associated works	Pending – validated 20 February 2023.	Approximately 566m east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Drainage Strategy; • Traffic and Parking Statement; • Sustainability Statement;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Flood Risk Assessment; • Construction Management Plan; • Biodiversity Assessment; • Transport Statement; • Preliminary Ecological Appraisal; and • Travel Plan.
#NELC CULM-39	DM/0261/23/OUT	Residential Development at Land off Waltham Road, Barnoldby Outline erection of 42 dwellings and associated infrastructure (all matters reserved)	Pending – validated 28 March 2023.	Approximately 1.4km east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Landscape and Visual Impact Assessment; • Transport Statement; • Heritage Impact Assessment;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Ecological Appraisal; • Flood Risk Assessment; and • Biodiversity Assessment.
North Lincolnshire Council						
#NLC CULM-2	PA/2022/1223	<u>Associated British Ports (ABP) – Land Adjacent to the Westgate Entrance, Port of Immingham</u> A hybrid application comprising full planning permission for the development of land adjacent to the West Gate Entrance of the Port of Immingham for port related employment uses.	Pending – validated 18 August 2022	Approximately 160 m north of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available information includes: • Geo-environmental and Geotechnical Desk Study; • Air Quality Assessment; • Arboricultural Assessment; • Flood Risk Assessment; • Framework Travel Plan; • Lighting Assessment;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Ecological Impact Assessment Report; • Transport Assessment; • Heritage Statement; • Supplementary Ecological Addendum; • Landscape and Visual Impact Assessment; • Written Scheme of Investigation; • Habitat Regulations Assessment; • Drainage Strategy; and • Biodiversity Net Gain Report and Metric.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
#NLC CULM-3	PA/2022/1548	VPI Immingham - VPI Immingham Pilot Carbon Capture Plant Planning permission to construct and operate a temporary pilot post-combustion carbon capture plant and associated infrastructure	Approved with Conditions – 26 October 2022. This development is to commence within three years of the date of permission.	Approximately 40 m north west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Ecological Assessment; • Flood Risk with Drainage Statement; • Air Quality Statement; and • Noise Assessment.
#NLC CULM-4	PA/2022/628	MF Strawson Limited – Residential Development at Main Road, Sturton Hybrid application comprising full planning permission to erect 32 dwellings and outline planning permission for 85 dwellings with appearance, landscaping, layout and scale reserved for subsequent consideration	Approved – 23 March 2023. Construction has not yet commenced.	Approximately 1.9 km west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Biodiversity Assessment; • Archaeological Addendum; • BNG Metric 3.0 calculation;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Flood Risk Assessment and Outline Drainage Strategy; • Preliminary Ecological Appraisal; • Geophysical Survey; • Transport Assessment; • Phase One Desk Study Report; • Archaeological Desk Based Assessment; • Water Vole Survey; and • Travel Plan.
#NLC CULM-5	PA/2022/443	Lightrock Power Ltd – Sweetbriar Farm Planning permission for the installation of a solar photovoltaic array/solar farm & associated infrastructure. This	Pending - validated 18 February 2022.	Approximately 2.5 km north west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore	Available environmental information includes: • Flood Risk Assessment;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		development is approximately 70 hectares (ha) in size.			potential for cumulative effects to occur.	• Solar Photovoltaic Glint and Glare Study; • Geophysical Survey; • Ecological Impact Assessment; • Transport Assessment; • Ornithological Impact Assessment; • Agricultural Land Classification • Landscape and Biodiversity Management Plan; • Heritage Impact Assessment; • Biodiversity Metric Assessment;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Landscape and Visual Appraisal; and • Habitat Regulations Assessment.
#NLC CULM-9	PA/SCO/2022/13	Orsted Gigastack Limited and Phillips 66 Limited – Gigastack Project EIA Scoping request for a 100MV hydrogen electrolyser together with an underground electrical cable connection to the Hornsea Two onshore substation, water discharge and a hydrogen export pipeline to the Humber Refinery.	Awaiting Scoping Opinion	Intersects Section 1 of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Scoping Report.
#NLC CULM-12	PA/2023/422	Humber Zero Project – Phillips-66 Carbon Capture Plant Planning permission for the construction and operation of a post-combustion carbon capture plant, including carbon dioxide compression and metering, cooling equipment, stacks, substations, new and modified services, connections, internal roads, new access onto	Pending - Validated 16 March 2023. This is the Humber Zero Project (refer to PA/SCO/2022/2). If this development is approved, construction is	Intersects Section 1 of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	This is the same project as the entry below (PA/2023/421) which comprises are two carbon capture plants. One Environmental Statement was

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		Eastfield Road, and maintenance and laydown areas (EIA development)	expected to commence in 2024 and completed in 2028.			prepared to cover both plants, but two planning applications were submitted, one with Phillips66 as the Applicant and one with VPI Immingham as the Applicant. Available Environmental Information: • Environmental Statement; • Biodiversity Net Gain Report; • Biodiversity Net Gain Metric 3.1 Calculations; and • Report to Inform Habitats
#NLC CULM-13	PA/2023/421	Humber Zero Project – VPI Immingham LLP Carbon Capture Plant Planning permission for the construction & operation of a post-combustion carbon capture plant, including carbon dioxide compressor & metering, cooling equipment, stacks, substations, internal roads, partial ditch realignment, new & modified services, connections, internal roads, accesses, maintenance & laydown areas.	Pending - Validated 8 March 2023. This is the Humber Zero Project. If this development is approved, construction is expected to commence in 2024 and completed in 2028.			

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						Regulations Assessment. • Report.
#NLC CULM-14	PA/SCO/2023/1	Associated British Ports – Immingham Onshore Wind EIA Scoping request for Immingham onshore wind including up to three wind turbines (Immingham Dock Western Entrance, Humber Road, South Killingholme).	Opinion given – 20 June 2023. If consented the construction period is expected to last for 12 to 18 months, however the construction start date is currently unknown.	Approximately 245m east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Scoping Report.
#NLC CULM-15	PA/SCO/2023/2	Associated British Ports – Immingham Onshore Wind EIA Scoping request for Immingham onshore wind including up to three wind turbines (Land Along Tracks, West Haven Way, South Killingholme).	Validated 3 April 2023. If consented the construction period is expected to last for 12 to 18 months, however the construction start date is currently unknown.	Approximately 85m east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Scoping Report.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
#NLC CULM-16	PA/2023/612	VEV Services Limited - Vitol (VPI Immingham) Planning permission for the installation of a 71.28 kwp solar carport and infrastructure for renewable energy generation	Pending - Validated 27 March 2023	Approximately 248m north of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Flood Risk Assessment.
#NLC CULM-17	PA/2018/918	Planning permission to construct a new gas-fired power station with a gross electrical output of up to 49.9 megawatts	Approved – 07 September 2018	Approximately 153m north of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Statement; and • Transport Statement.
#NLC CULM-18	PA/SCO/2022/12	Uniper - Humber Hub Blue Project EIA scoping request for the Humber Hub Blue Project; a blue hydrogen production facility (HPF) on the south bank of the Humber to supply low-carbon hydrogen via a pipeline to industrial and power customers. Although the	Pending – validated 22 November 2022. If approved, this development would commence in 2025 and open in 2028.	Approximately 2.1km north of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Scoping Report.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		majority of the hydrogen produced is likely to be used for combustion following fuel switching by industrial processes within 3 km of the production site, there is also the potential for hydrogen blending into power generation facilities or the existing natural gas network and for supplying hydrogen to other regional hydrogen projects, including mobility.				
#NLC CULM-19	PA/2023/502	Able UK Limited – Site Enabling Works, Land East of Rosper Road, Killingholme. Full planning application for enabling works on land east of Rosper Road, Killingholme, The proposed development comprises: • regrading of land with general fill and raising site levels with imported fill, • installation of ground drainage as required, • installation of boundary fencing,	Pending - validated 23 March 2023	Approximately 1km north east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Statement; • Geo-Environmental Desk Study; • Construction Environmental Management Plan;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		• widening of Marsh Lane (vertical alignment to be retained) and construction of new footpath - hedge to be replaced north of road widening, • upgrades at junction of Marsh Lane with Rosper Road, including extending a drainage culvert, • diversion of a section of Station Road and construction of new road, • new ditch culvert under Marsh Lane, • five new entrances to proposed sites to be created, • demolition of buildings, • construction of new 33kV substation, • new drainage ditch/diversion and new ditch crossings, • bridge crossings of existing over ground pipelines, • diversion to existing Exolum underground pipeline, and construction of new rail sidings.				• Transport Statement; • Construction Traffic Management Plan; and • Habitats Regulations Assessment Report.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
#NLC CULM-27	PA/2021/1525	Able UK Limited - Monopole Manufacturing Facility at Land at Able Marine Energy Park, south of Station Road, South Humber Bank, South Killingholme Planning permission to erect a monopole manufacturing facility to provide an offshore wind turbine monopile foundation manufacturing facility ('the monopile factory'). The proposed development is a complex of large industrial steel-clad buildings used to manufacture monopiles for the offshore renewable energy sector. This development is approximately 25 ha in size.	Approved – 08 August 2022	Approximately 541m north of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Statement; • Protected Species Survey; • Breeding Bird Survey; • Waterbird Utilisation Report; • Habitats Regulations Assessment; • Flood Risk Assessment; • Transport Technical Note; • Phase Two Site Investigation; and

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						• Biodiversity Net Gain Report.
East Lindsey District Council						
#ELDC CULM-1	N/085/00883/15	Housing Development – Louth Road A hybrid application consisting of outline erection of up to 300 dwellings with means of access to be considered and full planning permission for change of use of land from agricultural land to a recreation ground.	Approved – 22 November 2017. This development to commence within two years from the date of approval of the last of the reserved matters to be approved. The construction of this development has not yet commenced.	Approximately 3 km north east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Flood Risk Assessment; • Transport Assessment; • Ecology surveys and mitigation strategy; • Archaeological Evaluation Report; and • Travel Plan.
#ELDC CULM-2	N/133/01413/21	Cyden Homes – Residential development at Ludborough Road Application for the erection of 198no. dwellings with associated garages and	Pending decision – validated 1 July 2021.	Approximately 740m north east of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for	Available Environmental Information includes: • Ecology Report;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		construction of a vehicular and pedestrian access			cumulative effects to occur.	• Phase One and Two Site Appraisal; • Traffic Assessment; • Travel Plan; • Archaeology Report; • Heritage Impact Statement; • Flood Risk Assessment; • Drainage Report; • Arboricultural Report; and • Biodiversity Net Gain Assessment.
#ELDC CULM-15	N/105/01055/22	Charterpoint (Louth) Limited – Daisy Way, Louth Outline erection of up to 90no. dwellings with garages with means of access to be considered. This development is approximately 6 ha in size.	Pending – appeal date unknown. EIA Screening Determination (N/105/01075/22) - 17 Jun	Approximately 3.2km south west of the DCO Site Boundary	Potential for there to be overlap of the construction and operational phase therefore potential for	Available Environmental Information includes: • Preliminary Environmental Risk Assessment;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
			2022 Non EIA development.		cumulative effects to occur.	• Flood Risk Assessment; • Landscape and Visual Impact Assessment; • Noise Assessment; • Transport Assessment; and • Travel Plan.
#ELDC CULM-18	N/019/01451/20	Brackenborough Ltd – Brackenborough Hotel Change of use of land for the siting of 114 no. holiday lodges and excavation of land to form 3 no. wildlife ponds.	Approved – 19 February 2021. Development to commence within four years from the date of permission.	Approximately 2.1km south west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Drainage Strategy; and • Construction Environmental Management Plan.
#ELDC CULM-19	N/092/01017/20	Lovell – Residential Development Chestnut Drive Outline erection of up to 141no. dwellings (with means of access, landscaping and layout	Approved – 15 June 2021. Development to commence within four	Approximately 1.7km south of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational	Available Environmental Information includes: • Travel Plan;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		to be considered). This development is approximately 6ha in size.	years from the date of permission.		phase therefore potential for cumulative effects to occur.	• Transport Statement; • Archaeological Assessment; • Ecological Appraisal; • Geo-Environmental Desk Study Report; • Flood Risk Assessment; • Phase Two Investigation Report; • Landscape Management Plan; and • Drainage Statement.
#ELDC CULM-22	N/085/01215/21	Homes by Gleeson – Residential Development Louth Road, Holton Le Clay Application for approval of reserved matters (appearance, landscaping, layout and scale)	Approved – 30 June 2022. Development not yet built.	Approximately 3.3km north of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore	Available Environmental Information includes:

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		for 233no. dwellings on part phase A and phases B and C pursuant to Outline planning permission ref. no. N/085/01207/20. This development is approximately 12 hectares in size.			potential for cumulative effects to occur.	• Flood Risk Assessment; and • Ground Investigation Report.
#ELDC CULM-31	N/105/01961/19	Gleeson - Proposed Residential Brackenborough Road, Louth Erection of 237no. dwellings, associated garages, provision of 3no. attenuation ponds, areas of open space and children's play areas, erection of a pumping station and a substation, construction of vehicular and pedestrian accesses and internal access roads.	Approved - 26 March 2021 Development was under construction as of Oct 2021. The construction of this development appear to be ongoing.	Approximately 2km south west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Drainage Strategy; • Phase One Environmental Risk Assessment; • Transport Assessment; • Economic Benefits Report; • Tree Survey; • Interim Travel Plan; • Landscape and Visual

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
						Impact Assessment; • Archaeological Geophysical Survey; • Flood Risk Assessment; • Geo-Environmental Report; • Archaeological Trial Trench Evaluation; and • Construction Management Plan.
#ELDC CULM-32	N/105/00593/19	Cyden Homes – Proposed Residential Development at The Park, Eastfield Road, Louth. Erection of 2no. detached bungalows, 4no. pairs of semi-detached houses, 28no. detached houses, 1no. block of 6no. terraced houses, 3no. blocks of 4no. terraced houses, 1no. block of 4no. bungalows	Approved - 9 August 2019 Development was under construction as of 20 April 2022. The construction of this development	Approximately 2.5km south west of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Phase One and Two Site Appraisal; • Tree Report;

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
		(60no. houses in total) and associated garage blocks, provision of an attenuation pond and play area and construction of internal access roads.	appear to be ongoing.			• Flood Risk Assessment; • Ecological Appraisal; • Transport Statement; • Travel Plan; • Drainage Statement; • Landscape Management and Maintenance Plan; and • Construction Method Statement.
Lincolnshire County Council						
#LCC CULM -7	PL/0037/23	Manby BGE Ltd - Anaerobic Digestor and Fertiliser Production Plant For an anaerobic digestor and fertiliser production plant at Land at Manby Airfield, off Manby Middlegate, Manby.	Validated – 19 May 2023. No decision yet.	Approximately 2.7km south of the DCO Site Boundary.	Potential for there to be overlap of the construction and operational phase therefore potential for cumulative effects to occur.	Available Environmental Information includes: • Environmental Statement.

ID	Application Reference	Development Name and Details	Status (at time of assessment) and schedule	Approx. Distance from the DCO Site Boundary	Overlap in temporal Scope?	Environmental information available?
West Lindsey District Council						
No developments identified within West Lindsey District Council.						
Wider Viking CCS Project						
#OFF CULM-1	N/A	Wider Viking CCS Project – offshore elements including refurbishment of the existing offshore Lincolnshire Offshore Gas Gathering system (LOGGS) Pipeline and a newly installed spur pipeline, to the offshore injection facilities for permanent storage.	Pre-application stage, Non-statutory Scoping Report currently being prepared (May 2023)	Immediately adjacent to the DCO Site Boundary at Theddlethorpe.	In order to evaluate the potential for any cumulative impacts associated with the onshore and offshore parts of the overall Viking CCS Project, a "Bridging Document" (Application Document 6.12) has been prepared which looks at this in more detail. This will be included separately to the wider cumulative assessment and based on information available at the time of writing in relation to the Offshore part of the Viking CCS Project.	

Revision: 3 Drawn: LC Checked: HT Approved: MW Date: 2023-09-14

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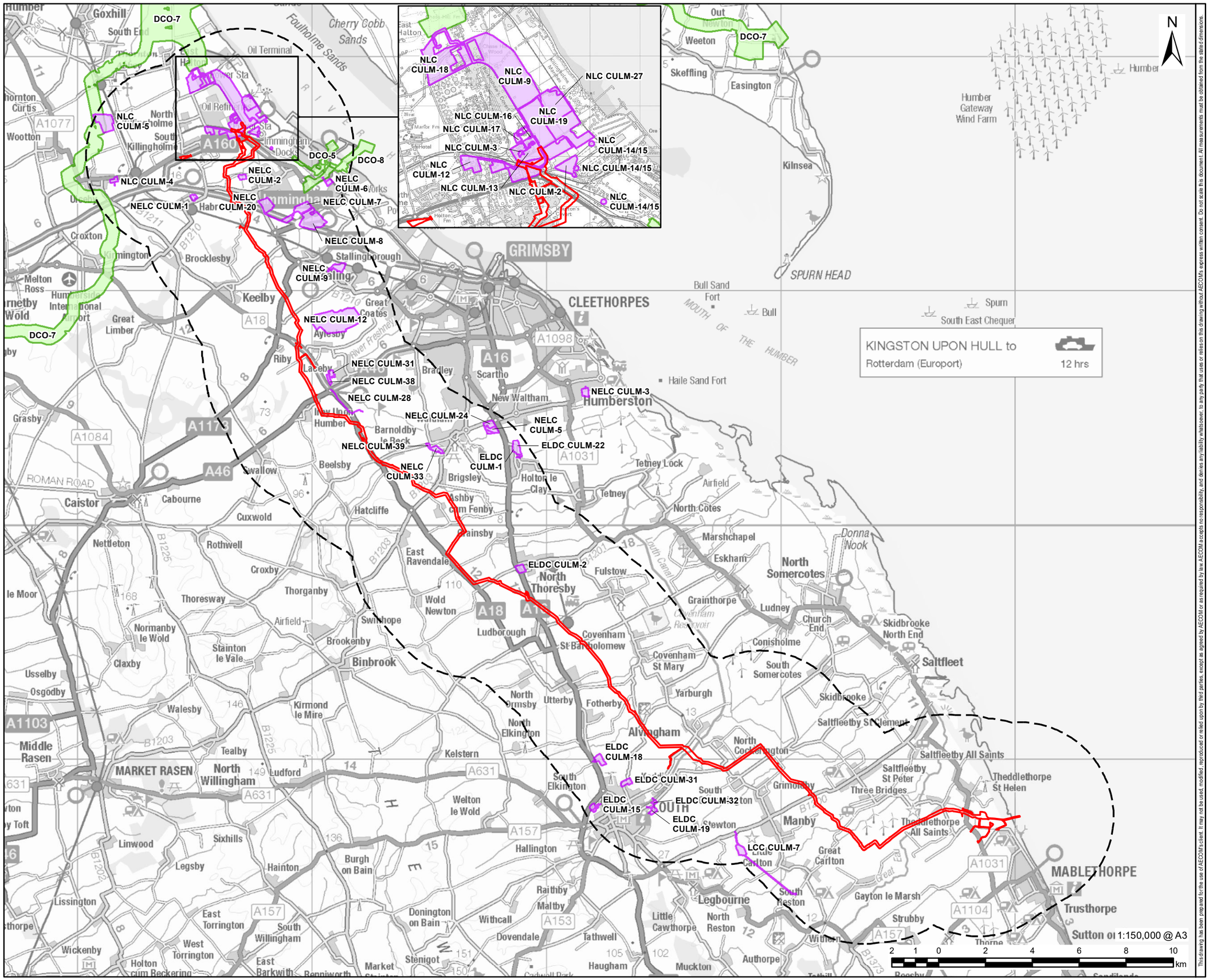

VikingCCS

AECOM

PROJECT

Viking CCS Pipeline

LEGEND

- DCO Site Boundary
- 4km Study Area
- Town and Country Planning Application
- DCO Application

NOTES:
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FIGURE TITLE

Figure 20-2
Location of Short List of Other Developments

ISSUE PURPOSE

ENVIRONMENTAL STATEMENT

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230914_ES_20-2

Interaction with wider Viking CCS Project

20.6.3 As outlined in *ES Volume II: Chapter 1: Introduction (application Document 6.2.1)*, the Viking CCS Pipeline is one component of the overall Viking CCS Project. Other elements of the overall project include reuse of the existing LOGGS pipeline, an additional 28 km of offshore pipeline, an unmanned facility at the injection site, and injection facilities. These other elements of the Viking CCS Project are being consented separately as part of an offshore consent regime.

20.6.4 However, to ensure that the potential impacts of the overall Viking CCS Project are considered as a whole, a bridging document has been prepared which presents a summary of the key findings each project and highlights the potential inter-project cumulative impacts and assess their potential significance. Further details are included in *Viking CCS Bridging Document (Application Document 6.12).*

20.7 Information Gathering (Stage 3)

20.7.1 This stage involved searching for and reviewing available information relating to the shortlisted developments to establish the details of their likely environmental effects. For each shortlisted scheme, this information has included, where available, planning applications, reported environmental effects within ES or EAR's, details on design, location, construction programme (including demolition), and operational activities.

20.7.2 The information gathering exercise also focussed on factors including: the ZoIs of the environmental topics assessed; the planned timescales for the other developments; and details of their potential or likely significant effects.

20.7.3 A reference and link to the key sources of information used relating to the shortlisted cumulative schemes is contained within *ES Volume IV: Appendix 20.1 (Application Document Ref 6.4.20.1).*

20.8 Inter-Project Cumulative Effects Assessment (Stage 4)

General overview

20.8.1 All of the developments identified in **Table 20-9** have been initially considered to have the potential to generate significant cumulative effects when considered alongside the Proposed Development, by virtue of their nature, proximity to the Proposed Development and/or temporal scope (i.e. the planned timescales for construction and operation). The locations of the shortlisted developments in relation to the Proposed Development are shown on **Figure 20-2**.

20.8.2 They have therefore been progressed to Stage 4 of the cumulative effects assessment and have been assessed in relation to each environmental topic included in this ES *(ES Volume II Chapters 6 to 19 (Application Document 6.2))*, with the exceptions of:

- Materials and Waste; and
- Major Accidents and Disasters.

20.8.3 Justification for not progressing these topics to Stage 4 of the cumulative effects assessment is presented below.

Materials and Waste

20.8.4 For Materials and Waste, a detailed cumulative effects assessment has not been undertaken since:

- As part of their planning function, Waste Planning Authorities (WPAs) are required to ensure that enough land is available to accommodate facilities for the treatment of all

waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas; and

- Minerals Planning Authorities (MPAs) are similarly required to ensure an adequate supply of minerals, sufficient to meet the needs of national and regional supply policies, and local development needs.

20.8.5 In preparing their waste management strategies, the WPAs already take into account waste generation at the regional and sub-regional scale, since these are the figures which are then used for determining the need for waste facilities. The landfill void capacity remaining (which is used to evaluate the effects of the Proposed Development) already considers the cumulative effects of waste generated by other developments, and hence a separate cumulative impact assessment is not required for waste.

20.8.6 It is therefore not necessary or feasible for each development within the region to, in effect, duplicate the function of the WPA as part of the EIA process.

20.8.7 Furthermore, only limited materials and waste information is available for some of the other developments, and some are deemed to be relatively small in scale development and will not require large quantities of construction materials or generate large quantities of construction waste and operational waste. Where materials and waste information is available for projects, the quantities of waste are relatively small in the national or regional context and no significant effects have been identified.

20.8.8 Since the quantities of construction materials required and the quantity of waste generated by the Proposed Development will result in no likely significant effects, and the timescales for some of the other large project waste generation do not align there are not expected to be any cumulative waste and resources impacts as a result of the Proposed Development together with the identified other developments in the surrounding area.

Major Accidents and Disasters

20.8.9 Major Accidents and Disasters has a different assessment approach from other technical assessment within the ES. The vulnerability of the Proposed Development to major events is assessed, including where incidents may occur on third party land or developments. Consequently, a cumulative approach is inherently built in to the assessment undertaken and the results are presented in *ES Volume II Chapter 19: Major Accidents and Disasters (Application Document 6.2.19)*.

Inter-project cumulative effects assessment (Stage 4) Results

20.8.10 The Inter-Project Effects Assessment for the Construction Phase (and where relevant, Operational phase) assessed the potential for inter-project effects for the following topics:

- Ecology and Biodiversity;
- Landscape and Visual;
- Historic Environment;
- Geology and Hydrogeology;
- Water Environment;
- Traffic and Transport;
- Noise and Vibration;
- Climate Change;
- Socio-economic; and
- Health and Wellbeing.

20.8.11 For a number of these topics a general cumulative assessment narrative was prepared and is presented in the sections below. This approach worked specifically where the scope for cumulative effects were more limited. The findings and reasoning for this approach is provided in the following subsections.

Climate Change

20.8.12 The GHG assessment provided within *ES Volume II Chapter 15 Climate Change (Application Document 6.2.15)* is considered inherently cumulative as it presents the impact of the development in the context of National carbon budgets, used to represent the key sensitive receptor, (i.e., the global climate). This includes the provision of legally binding limits of GHG emissions that can be emitted by the UK if it is to meet its net zero targets by 2050. This assessment is considered comprehensive and includes a worst case within the defined assessment parameters.

Traffic and Transport

20.8.13 A separate assessment has been completed which takes into account the other developments identified in the Short List which have the potential to increase traffic flows within the assessment area. Planning applications which are due to begin construction past 2027 have been discounted. This assessment can be viewed in *ES Volume II Chapter 12: Traffic and transport (Application Document 6.2.12)* and identified which links may be subject to cumulative effects.

20.8.14 A total of 9 other developments from the Short List were included in the traffic and transport cumulative assessment. For each one, the traffic numbers associated with each development were reviewed and due consideration was made to the spatial and temporal overlap. No significant cumulative effects were identified.

Air Quality

20.8.15 Dust emissions from the Proposed Development will be minimised due to the implementation of appropriate mitigation and all site plant and NRMM will be used for intermitted and limited time periods.

20.8.16 In combination with other construction activities including construction traffic movements this has the potential to raise NO_2 and PM_{10} concentrations within the local area. However due to the low baseline, this is unlikely to cause a significant effect.

20.8.17 Cumulative effects have been captured via the inclusion of thirteen relevant committed developments, including VPI Immingham and Phillips 66, within the traffic data provided for the construction traffic emissions assessment (as well as TEMPro traffic growth). This has had the effect of increasing the traffic flows considered in the Do-Minimum Scenario which has the potential to raise NO_2 and PM_{10} concentrations within the local area. However, the assessment process considers the difference between the Do-Minimum and the Do-Something scenarios, and this does not change. The potential increase in baseline pollutant effects is not likely to be large enough to result in an exceedance of the relevant air quality objectives. Therefore, consideration of cumulative effects is not anticipated to cause a significant effect.

Agricultural Land

20.8.18 A list of 43 developments were identified for inclusion within the short list to be considered cumulatively with the Proposed Development through agreement between the Applicant and the Local Planning Authorities. The details of the developments are provided in **Table 20-9**.

Loss of soil functions/volumes and soil related features

20.8.19 Cumulative effects to soil resources and their related features only occur where the same soils are directly impacted by more than one development. **Table 20-9** identifies three

shortlisted developments with boundaries which overlap with the Proposed Development. These all occur within Section 1 of the DCO Site Boundary as shown on Figure 20-2:

- #NLC CULM-9 Gigastack Project (Orsted Gigastack Limited and Phillips 66 Limited) intersects with Section 1 of the DCO Site Boundary at Immingham;
- #NLC CULM-12 Humber Zero Project (Phillips 66 Limited) intersects with Section 1 of the DCO Site Boundary at Immingham; and
- #NLC CULM-13 Humber Zero Project (VPI Immingham LLP) intersects with Section 1 of the DCO Site Boundary at Immingham.

20.8.20 It is expected that like the Proposed Development, in order to conform with planning policy and good practice, these other developments will be required to commit to following industry standard best practice and guidance, promoting the sustainable reuse of soils, and it is reasonable to assume that this will be secured through Planning Condition.

20.8.21 The above developments are all located on land identified as supporting soils of the Holderness and/or Newchurch 2 soil associations (refer to *ES Volume II: Chapter 10 Agriculture and Soils Figure 10-3 (Application Document 6.2.10))*. As set out in Section 10.9 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)*, with the good practice measures which will be implemented through the Soil Management Plan (SMP) (as secured through the DCO) the impacts to these medium sensitivity soil resources due to the Proposed Development are assessed as negligible. Therefore, the Proposed Development cannot meaningfully contribute to any significant cumulative effect which may occur. However, it is also noted that given the assumed application of industry standard best practice and guidance by all projects, the cumulative impact would be no worse than minor adverse and likely negligible, and therefore not significant.

Agricultural land

20.8.22 The Proposed Development will result in the loss of land from agricultural use. The majority of this loss will be short-term temporary – for the duration of construction only; however, for the Block Valve Stations and Theddlethorpe Facility (Option 2) and its access the loss will be long-term with the land being restored to agricultural use at the end of the operational lifetime of the pipeline. To represent a worst case for the assessment this long-term loss is considered to be permanent.

20.8.23 As discussed in Table 10-26 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)*, it is estimated that 72.5 % of the available agricultural land in Lincolnshire is of BMV quality, therefore it is likely that where any of the 51 shortlisted developments are located on agricultural land there is the potential for the loss of BMV land to occur. Due to the type and nature of the shortlisted developments this loss has the potential to be temporary (e.g., other pipelines and temporary works areas) or permanent (e.g., residential developments). There is insufficient information available for these developments to accurately determine the scale of loss or which ALC grades would be impacted.

20.8.24 The permanent loss of 0.2 ha of Grade 2 land due to the Proposed Development is assessed as Moderate adverse and significant. As set out in Section **Error! Reference source not found.** of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10*), permanent/irreversible losses of very high sensitivity Grade 2 land over 20 ha would result in a Very Major impact and a significant effect. Given the scale and type of the shortlisted developments and the prevalence of Grade 2 land within Lincolnshire (calculated to be 33% of the available agricultural land, (Table 10-26 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10))* as a worst case it must be considered that there is potential for a cumulative loss of greater than 20 ha of Grade 2 land to occur. The cumulative impact due to the permanent loss of Grade 2 land must therefore be considered Very Major resulting in a significant effect. However, it must be noted that the Proposed Development's

contribution to this is very small at only 0.2 ha. It is also noted that using the criteria set out in the IEMA guidance (**Error! Reference source not found.** of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10))* results in a significant effect whenever permanent loss of Grade 2 land occurs regardless of scale.

20.8.25 The permanent loss of 2.7 ha of Subgrade 3a land due to the Proposed Development is assessed as Minor adverse and not significant. As set out in Section **Error! Reference source not found.** of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10),* permanent/irreversible losses of high sensitivity Subgrade 3a land over 20 ha would result in a Major impact and a significant effect. Given the scale and type of the shortlisted developments and the prevalence of Subgrade 3a land within Lincolnshire (calculated to be 26.2 % of the available agricultural land, (Table 10-26 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10))* as a worst case it must be considered that there is potential for a cumulative loss of greater than 20 ha of Subgrade 3a land to occur. The cumulative impact due to the permanent loss of Subgrade 3a land must therefore be considered Major resulting in a significant effect. However, it must be noted that the Proposed Development's contribution to this is small at only 2.7 ha.

20.8.26 As set out in Table 10-27 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)* the temporary losses of Grade 2 and Subgrade 3a land due to the Proposed Development are assessed as Minor adverse and not significant for each of these gradings. Individually, the Proposed Development exceeds the maximum scale of loss (20 ha) considered by the assessment criteria. Further cumulative losses due to the shortlisted developments would not increase the assessed magnitude of change in this regard. As stated in paragraph 10.10.6 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)*, to comply with the requirements of planning policy and standard industry good practice it is reasonable to assume that the shortlisted developments will be required to commit to following industry standard best practice measures and guidance (such as those set out in Defra's Code of Practice (Ref 10-12 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10))*. This will promote the sustainable reuse of soils, thereby ensuring that no downgrading of land quality will occur following reinstatement. It is also reasonable to assume that this will be secured through Planning Condition or DCO Requirement. Therefore, the magnitude of change from the baseline would be assessed as negligible (Table 10-7 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)).* The impacts due to the cumulative temporary losses of very highly sensitive Grade 2 and highly sensitive Subgrade 3a land are therefore assessed as minor adverse and not significant.

20.8.27 As set out in Table 10-27 of *ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)* the impact of temporary losses of Subgrade 3b land due to the Proposed Development is assessed as negligible. Therefore, the Proposed Development cannot meaningfully contribute to any significant cumulative effect, and no assessment is provided.

Historic Environment

20.8.28 The committed developments listed in **Table 20-9** have been reviewed and assessed for any cumulative effects on the settings of designated and non-designated heritage assets, taking into consideration the effects from the Proposed Development and the nature of the assets identified.

20.8.29 Due to the distance of these projects from the Proposed Development, the intervening topography and vegetation, or the fact they do not have effects on the settings of assets affected by the Proposed Development, there are not considered to be any cumulative effects on the setting of designated and non-designated heritage assets, or changes to the contribution that the assets' settings make to the significance of each individual heritage assets, as identified in this ES chapter, as a result of inter-project effects.

Socio-economics

20.8.30 All of the approved cumulative schemes and submitted applications listed in **Table 20-9** will generate additional construction related employment in the surrounding areas if they were to go ahead. The scale of construction employment cannot be readily quantified as this information required for each scheme is commercially sensitive and not available, in most instances. Applying an assumption that two direct temporary construction jobs are generated for every residential unit to the available scheme information results in at least 2,616 jobs generated. However, as this figure does not take into consideration other non-residential cumulative schemes such as energy farms, offshore windfarms or other commercial and industrial developments, it is likely that this figure would be much greater. For example, for the non-residential schemes for which information is available, this reflects an additional 1,727 jobs. Therefore, cumulative construction employment in addition to the number of construction jobs, 222, generated by the Proposed Development represents a temporary minor beneficial effect on the local economy, which remains not significant.

20.8.31 The overall inter-project cumulative effect from the generation of GVA from construction activities is likely to remain temporary minor beneficial, which is considered not significant.

20.8.32 The overall inter-project cumulative effect on PRoWs has the potential to increase disruption to users via longer journey times or community severance effects. However, as these schemes are unlikely to involve disruption to users of the same PRoWs, there will be no additional cumulative impact on users of PRoW. Therefore, the overall cumulative assessment on public rights of way is assessed to remain as minor adverse which is considered not significant.

20.8.33 The overall cumulative effect on residential properties, business premises, community facilities, visitor attractions and open space is likely to remain as a negligible effect, which is considered not significant, as the cumulative schemes in proximity to the Proposed Development are not likely to have an additional adverse impact on the amenity of these private assets.

20.8.34 The overall cumulative construction effect on development land is likely to remain as negligible, which is considered not significant.

Health and Wellbeing

20.8.35 **Table 20-9** provides a summary of the identified developments which could lead to a significant cumulative effect on a shared receptor. These developments, combined with the effects identified in Section 17.9 of *ES Chapter 17 Health and Wellbeing (Application Document 6.2.10),* may lead to a more pronounced effect on the health receptors in the study area.

20.8.36 Given that health and wellbeing effects are dependent on the findings of other chapters, the findings of the cumulative inter-project assessments have been summarised in the following paragraphs of ES Volume II:

- *Chapter 7: Landscape and Visual:* This chapter identified 13 cumulative developments that could affect the findings of the residual effects of the chapter. The chapter has considered the worst-case scenario whereby all of the shortlisted developments are constructed simultaneously and therefore all are present in the landscape. Landscape receptors that have been assessed as having negligible adverse effects from the Proposed Development alone were not included in this assessment of cumulative effects, and therefore only construction stage impacts were assessed. In summary, the residual cumulative effects for all relevant receptors in this chapter were assumed to be minor adverse, and therefore remain not significant.
- *Chapter* 12*: Traffic and Transport:* In this chapter, the cumulative assessment considers the cumulative flows of traffic across all routes affected by the Proposed Development,

given the cumulative developments noted in **Table 20-9**. This was assessed for all five sections of the route in the construction phase. The assessment concluded that there are no residual cumulative effects that are significant, as no cumulative effect is considered worse than a minor adverse effect across all routes.

- *Chapter 13: Noise* and *Vibration:* The assessment of inter-project effects in this chapter is considered for the construction and operational phases at distances of 500m from the *Proposed Development.* Assuming that the mitigation measures within the Draft CEMP (*ES Volume IV Appendix 3.1 (Application Document 6.4.3.1))* are adopted and other developments are required to adopt similar practices, the cumulative disruption from the developments is expected to be reduced. In conclusion, there are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. For operational effects, effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse, and not significant.
- *Chapter 14: Air Quality:* This chapter provides a concise summary that states there are anticipated to be no significant inter-project or intra-project cumulative effects. This is because the potential cumulative increase in any baseline pollutant effects is not likely to be large enough to result in an exceedance of the relevant air quality objectives.
- *Chapter 16: Socio-economics:* For the inter-project effects of this chapter, the residual effects were reassessed in the context of the cumulative developments. Operational effects were not considered for the cumulative assessment. The following cumulative effects remained not significant in the construction phase:
    - Cumulative construction employment (minor beneficial);
    - GVA from construction activities (minor beneficial);
    - Disruption to PRoW (minor adverse);
    - Disruption to residential properties, business premises, community facilities, visitor attractions and open space (negligible); and
    - Disruption to development land (negligible).

20.8.37 Given these findings from other chapters, there is no evidence to suggest that the cumulative developments will lead to the cumulative health effects being different from the residual effects stated in Section 17.9 *of ES Volume II Chapter 17 Health and Wellbeing (Application Document 6.2.17).* Therefore, there are no resulting cumulative health effects across all stages of the Proposed Development.

Inter-project cumulative effects further assessment

20.8.38 A more detailed assessment was undertaken for a number of the technical topics, due to the nature of the potential effects. These have been presented within **Table 20-10**, which outlines the inter-project cumulative effects in more detail. This assessment looks at both the construction and operational phases. Due to the fact that decommissioning would not occur until a minimum of 25 years' time, it is not possible to include in the assessment.

Table 20-10: Inter-Project Cumulative Effects

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
Nationally Significant Infrastructure Projects						
#DCO-5	1	TR030007	Immingham Eastern Ro-Ro Terminal	**Ecology and Biodiversity** Given the lack of spatial overlap between the project and the Proposed Development, and the mitigation included for the Proposed Development, no cumulative effect is predicted. **Landscape and Visual** Discounted due to lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	N/A – this development was discounted from further cumulative assessment.	
#DCO-7	1	EN070006	Humber Low Carbon Pipelines (previously developed	**Ecology and Biodiversity** There is insufficient detail about the potential effects of the other development to undertake cumulative assessment. The proposed Development is likely to	N/A – this development was discounted from further cumulative assessment. Refer to the Habitat Regulations Assessment (HRA) (Application Document 6.5) for the in-	

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			by National Grid Ventures)	have only a minor effect on the qualifying species of the Humber Estuary designations. There is no additional mitigation available that would reduce the potential effects of the Proposed Development, and the spatial separation between the developments means that shared mitigation is not possible. Overall, it is considered unlikely that there would be any cumulative effects of greater significance than those that would be generated by the other development alone. **Landscape and Visual** Discounted due to lack inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	combination effects assessment on designated sites.	
#DCO-8		TR030008	Immingham Green Energy Terminal	**Ecology and Biodiversity**	**Ecology and Biodiversity** To avoid adverse effects upon designated sites / birds, a contribution to the	The Proposed Development will avoid the loss of

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			(Associated British Ports)	The Immingham Green Energy Terminal PEIR identifies the potential for significant effects upon woodland habitat. The ornithology chapter of the PEIR identifies the potential for direct loss of terrestrial habitats that are functionally linked to the Humber Estuary SPA, Ramsar. **Landscape and Visual** Discounted due to lack inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** The construction has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. The operation may have effects on water availability and water quality due to operation. The timing of these developments may overlap with the construction of the Proposed Development, however the Proposed Development only has minor works within the South Killingholme Drain (IDB watercourse) catchment and is assessed as having negligible effects on the watercourse for construction and operation. All Energy Infrastructure projects will include best practice pollution	South Humber Bank Strategic Mitigation Delivery Plan, or other alternative mitigation is to be considered. **Water Environment** N/A	woodland habitats at Immingham, therefore no cumulative effects upon woodland habitats are anticipated. The potential for significant effects cumulative will be assessed by the competent authority as part of the HRA process. As strategic mitigation will be provided, no cumulative effects are anticipated.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				prevention measures and will ensure that there are no significant effects to the receiving waterbodies. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
North East Lincolnshire Council						
#NELC CULM-1		DM/0211/20/REM	Keigar Homes Ltd – Residential Development off Station Road, Habrough.	**Ecology and Biodiversity** No ecology reports provided. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	N/A – this development was discounted from further cumulative assessment. Refer to the Habitat Regulations Assessment (HRA) (Application Document 6.5) for the in-combination effects assessment on designated sites.	

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
#NELCCULM-2		DM/1175/17/FUL	Peter Ward Homes – Brocklesby Avenue Habrough Road	**Ecology and Biodiversity** As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Included in baseline as majority of development is now currently constructed. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. There is also potential for operational impacts on water quality due to additional runoff from development roads and additional traffic mobilising pollution on local roads, additional water needs and additional wastewater production. These projects will have to comply with national and local planning policy and will include best practice mitigation measures and pollution prevention during construction, and therefore are unlikely to result in any significant cumulative effects. The Proposed Development will not have any significant effects on water quality, water	**Water Environment** N/A	None identified

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				usage or wastewater production. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e.,		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NELCCULM-3		DM/0696/19/FUL	Cyden Homes – Residential development at Midfield Road, Humberston.	**Ecology and Biodiversity** As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary.	N/A – this development was discounted from further cumulative assessment	

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Noise and Vibration Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#NELCCULM-5		DM/1240/21/FUL	Barratt York – New Waltham Phase 2 Residential Development	**Ecology and Biodiversity** As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	**Ecology and Biodiversity** Retention and protection of hedgerow / boundary trees, a sympathetic lighting scheme, buffer of 50 m between Buck Beck and the development area, soft landscaping.	None Identified
#NELCCULM-6		DM/0026/18/FUL	North Beck Energy Ltd – North Beck Energy Centre	**Ecology and Biodiversity** As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant.	N/A – this development was discounted from further cumulative assessment	

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Landscape and Visual Discounted due to lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#NELCCULM-7		DM/1145/19/FUL	Engie - NEL Energy Park	**Ecology and Biodiversity** The ES chapter prepared to inform the Engie NEL Energy Park confirmed that there will be no significant effects upon statutory designated sites. There is potential for loss or damage of trees and hedgerows. There will be loss of species poor grassland and arable habitats. No significant effects predicted for otter, water vole, bats, badger, breeding birds or wintering birds. As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is	**Ecology and Biodiversity** Effects upon trees and hedgerows to be avoided through buffers and root protection zones. Pollution control measures to be implemented. Restorative landscaping following completion of works. Avoidance of artificial lighting.	Assuming the proposed mitigation is implemented, there will be no significant effects from this project alone. Therefore, there is no potential for cumulative

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale and lack of inter-visibility with the representative viewpoints. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	Implementation of ecological supervision, mitigation and licensing as appropriate.	effects with the Proposed Development.
#NELCCULM-8		DM/0105/18/FUL	Engie – SHIIP Stallingborough Interchange	**Ecology and Biodiversity** The ecology chapter of the ES identified the potential for adverse effects in the absence of mitigation. These included habitat loss, habitat disturbance, and potential effects on water vole, otter, bats, reptiles and breeding birds. As likely effects on the majority of species (including water vole, otter, bats, reptiles and breeding birds) and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is	**Ecology and Biodiversity** Mitigation proposed included a CEMP, Ecology and Landscape Management Plan (ELMP), works under a water vole mitigation licence, buffers between the works and potential water vole habitat, vegetation clearance outside of the	Assuming the proposed mitigation is implemented, there will be no significant effects from this project alone. Therefore, there is no potential for

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	nesting bird season and sensitive lighting.	cumulative effects with the Proposed Development.
#NELCCULM-9		DM/0198/20/REM	Cyden Homes – Proposed Residential Development at Land Off Larkspur Avenue	**Ecology and Biodiversity** No ecology reports provided. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment**	N/A	No potential for cumulative effects.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#NELCCULM-12		DM/0899/21/FUL	Grimsby Solar Farm – Aura Power	**Ecology and Biodiversity** The Project was screened out for EIA, and, as such, it can be concluded that the local planning authority concluded that the project had no potential for significant effects alone, or cumulatively, given cumulative effects are considered as part of screening. In addition, as likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Construction of this development and the Proposed Development will appear across the LCA and will not be concentrated in one section. As such it is considered that the cumulative impact would remain low, the same for the Proposed Development assessed in isolation, resulting in a minor adverse effect, which is not significant. **Geology and Hydrogeology**	**Ecology and Biodiversity** A mitigation and management plan and a CEMP. **Geology and Hydrogeology** At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of	**Ecology and Biodiversity** The HRA has confirmed that there is no potential for cumulative effects on Habitats sites. **Landscape and Visual** No cumulative effects are anticipated. **Geology and Hydrogeology**

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each	dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).*	No cumulative effects are anticipated. **Noise and Vibration** There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant.

				location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2. Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NELCCULM-20		DM/0728/18/OUT	Brocklesby Estate – Residential	**Ecology and Biodiversity** The ecology report confirms no significant effects upon statutory designated sites.	**Ecology and Biodiversity**	**Ecology and Biodiversity**

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			Development on Land East of Stallingborough Road, Immingham	No significant adverse effects upon protected or notable species identified. As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale and lack of inter-visibility with the representative viewpoints. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Residential Development on Land East of Stallingborough Road, Immingham. Outline planning application for the development of up to 525 residential dwellings together with an extra care facility for the elderly with up to 80 units. The development is located within the catchments of Immingham Pump Drain (not hydrologically connected to Proposed Development), and Habrough Marsh Drain (hydrologically connected to Proposed Development). Construction has not commenced, however is due to be constructed soon. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the	Retained hedgerows to be protected during construction. Site clearance to be completed outside of the nesting bird season. Eradication strategy recommended to prevent spread of giant hogweed.	Assuming the proposed mitigation is implemented, there will be no significant effects from this project alone. Therefore, there is no potential for cumulative effects. **Noise and Vibration** There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed

				mitigation measures detailed within the CEMP *in ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2. Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		Development, and it is considered that cumulative effects will not be significant.
#NELCCULM-24		DM/0118/15/OUT	Monmouth Properties – Residential Developme	**Ecology and Biodiversity** No effects upon statutory or non-statutory designated sites are identified.	**Ecology and Biodiversity** Standard pollution prevention measures were recommended.	**Ecology and Biodiversity**

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			nt on Land at Toll Bar New Waltham.	Potential for adverse effects upon hedgerows and Buck Beck watercourse. Changes in lighting could affect foraging bats and otter. GCN present within 500 m of the development. As likely effects on the majority of species (including GCN, bats and otter) and habitats (including hedgerows) assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	Recommended that hedgerows are retained. An undeveloped buffer adopted adjacent to Buck Beck and lighting minimised. Site clearance to be completed outside of the nesting bird season. Precautionary working methods to prevent adverse effect upon GCN.	Assuming the proposed mitigation is implemented, there will be no significant effects from this project alone. Therefore, there is no potential for cumulative effects.
#NELCCULM-28		DM/0769/22/FUL	Construction of new foul sewer	**Ecology and Biodiversity** The addendum ecology report confirms the presence of GCN in water bodies within 500 m of the application. There is no potential for cumulative effects with the		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				proposed development as the Proposed Development will have no adverse effects on GCN. **Landscape and Visual** Discounted due to scale and lack of inter-visibility with the representative viewpoints. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2. Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NELCCULM-31		DM/1133/17/OUT	Humberside Land Developers Ltd - Residential	**Ecology and Biodiversity** Arboricultural report provided only. As there were no ecology reports submitted, other than an arboriculture report, there is insufficient information available for the other development to allow for cumulative assessment to be undertaken.	**Ecology and Biodiversity** A tree protection plan is recommended.	None identified

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			Development in Laceby	**Landscape and Visual** Discounted due to scale and lack of inter-visibility with the representative viewpoints. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. There is also potential for operational impacts on water quality due to additional runoff from development roads and additional traffic mobilising pollution on local roads, additional water needs and additional wastewater production. These projects will have to comply with national and local planning policy and will include best practice mitigation measures and pollution prevention during construction, and therefore are unlikely to result in any significant cumulative effects. The Proposed Development will not have any significant effects on water quality, water usage or wastewater production. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
#NELCCULM-33		DM/1167/16/FUL / AP/001/19	Cyden Homes – Residential Development Land off Brigsley Road, Waltham	**Ecology and Biodiversity** No ecology report provided. As there were no ecology reports submitted there is insufficient information available for the other development to allow for cumulative assessment to be undertaken. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	N/A	None identified.
#NELCCULM-38		DM/0118/23/FUL	Land Developers (Lincs) Ltd – Residential Development	**Ecology and Biodiversity** There is the potential for effects upon GCN and bats reported in the ecology report. There is no potential for cumulative effects with the proposed development in relation to GCN, as the Proposed Development will have no adverse effects. **Landscape and Visual**	**Ecology and Biodiversity** Precautionary working methods to avoid effects upon GCN and bats. Removal of vegetation outside of nesting bird season.	**Ecology and Biodiversity** Assuming the proposed mitigation is implemented, there will be no

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			at Land off Field Head Road, Laceby	Discounted due to scale and lack of inter-visibility with the representative viewpoints. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. There is also potential for operational impacts on water quality due to additional runoff from development roads and additional traffic mobilising pollution on local roads, additional water needs and additional wastewater production. These projects will have to comply with national and local planning policy and will include best practice mitigation measures and pollution prevention during construction, and therefore are unlikely to result in any significant cumulative effects. The Proposed Development will not have any significant effects on water quality, water usage or wastewater production. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	Retention of hedgerows.	significant effects from this project alone. Therefore, there is no potential for cumulative effects. **Water Environment** None Identified
#NELC		DM/0261/23/OUT	Residential Developme	**Ecology and Biodiversity**		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
CULM-39			nt at Land off Waltham Road, Barnoldby	There is the potential for effects upon GCN and bats reported in the ecology report. As likely effects on the majority of species (including bats) and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** Discounted due to scale and lack of inter-visibility with the representative viewpoints. Future receptors would be included within the assessment of impacts for residential receptors at Viewpoint 14. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
North Lincolnshire Council						
#NLC CULM-2		PA/2022/1223	Associated British Ports (ABP) –	**Ecology and Biodiversity** Noise and visual disturbance during construction to functionally linked land for the Humber Estuary SPA and	**Ecology and Biodiversity**	**Ecology and Biodiversity**

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
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			Land Adjacent to the Westgate Entrance, Port of Immingham	Ramsar (Rosper Road Pools). Potential for significant adverse effects reported in the Ecological Impact Assessment Report for this other development. **Landscape and Visual** The construction activity associated with these other developments will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good	Noise barriers proposed to reduce noise levels to acceptable levels. Ecological clerk of works. Site clearance outside of the nesting bird season. Maintain and enhance habitats for foraging and commuting bats. Minimise lighting outside of the construction area. **Geology and Hydrogeology** At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess	The potential for significant effects upon habitats sites will be assessed as part of the HRA process. If the competent authority confirms that the proposed mitigation is acceptable effects will be Not significant. **Landscape and Visual** No cumulative effects are expected. **Geology and Hydrogeology** None identified.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. There is also potential for operational impacts on water quality due to additional runoff from development roads and additional traffic mobilising pollution on local roads, additional water needs and additional wastewater production. These projects will have to comply with national and local planning policy and will include best practice mitigation measures and pollution prevention during construction, and therefore are unlikely to result in any significant cumulative effects. The Proposed Development will not have any significant effects on water quality, water usage or wastewater production. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each	the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).*	**Noise and Vibration** None identified.

				location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2. Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NLC CULM-3		PA/2022/1548	VPI Immingham - VPI Immingham Pilot Carbon Capture Plant	**Ecology and Biodiversity** The ecological assessment states that there will be no adverse effects on statutory designated sites. There are no habitats of principal importance within the site. There will be no noise or visual disturbance. No additional lighting will be installed for the pilot plant. There will be no adverse air quality effects. There will be no impacts in water quality. As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect.		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Geology and Hydrogeology The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).* **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV - Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NLC CULM-4		PA/2022/628	MF Strawson Limited – Residential Development at Main	**Ecology and Biodiversity** Potential for effects upon GCN and bats in the absence of mitigation. As likely effects on the majority of species (including bats) and habitats assessed for the Proposed Development are considered to be negligible, it is considered unlikely that cumulative effects could be		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			Road, Sturton	significant. The proposed Development would have no effects on GCN. **Landscape and Visual** Discounted due to scale and lack of inter-visibility with the representative viewpoints. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#NLC CULM-5		PA/2022/443	Lightrock Power Ltd – Sweetbriar Farm	**Ecology and Biodiversity** The ornithology report for Sweeetbriar farm concludes that the site is unlikely to be used by the qualifying features of the Humber Estuary SPA and Ramsar. Therefore, no potential cumulative effects from loss of functionally linked land for birds have been identified. As likely effects on the majority of species and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant.	**Ecology and Biodiversity** Five metre buffers between ditches and developed area to prevent effects upon water vole, root protection zones implemented where hedgerows will be retained. Best practice working methods to avoid effects	**Ecology and Biodiversity** Assuming the proposed mitigation is implemented, there will be no significant effects from this project alone. Therefore,

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
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				Landscape and Visual Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	upon badger and otter, bat sensitive lighting, precautionary working methods to avoid harm to GCN.	there is no potential for cumulative effects.
#NLC CULM-9		PA/SCO/2022/13	Orsted Gigastack Limited and Phillips 66 Limited – Gigastack Project	**Ecology and Biodiversity** Potential for cumulative effects. However, given the mitigation included in the Proposed Development for those impacts identified as being significant (such as noise impacts on Rosper Road Pools) and that any loss of functionally-linked land due to the Gigastack project will be strategically mitigated by the South Humber Gateway strategic mitigation project, no cumulative effect is anticipated. **Landscape and Visual** The construction of the Gigastack development will be clearly visible in the foreground to the left of the view,	N/A	Potential for cumulative effects – refer to PA/2023/422 below.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				partially screening construction operations associated with the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
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				to the short-term minor effects identified for the Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).* **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. The operation of these may have effects on water availability and water quality due to operation. The timing of these developments may overlap with the construction of the Proposed Development, however the Proposed Development only has minor works within the South Killingholme Drain (IDB watercourse) catchment and is assessed as having negligible effects on the watercourse for construction and operation. All Energy Infrastructure projects will		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				include best practice pollution prevention measures and will ensure that there are no significant effects to the receiving waterbodies. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NLC CULM-12		PA/2023/422	Humber Zero Project – Phillips-66 Carbon Capture Plant	**Ecology and Biodiversity** The ecology chapter of the ES for this development identifies the potential for significant adverse effects on open mosaic habitat, small heath butterfly. It also considered changes in surface water quality during construction and operation and changes in air quality. Noise and visual disturbance were screened out at Stage 1 of the HRA process. Changes in water quality during operation was taken to Appropriate Assessment. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed	New habitat will be created to achieve a net gain in biodiversity. Desulphurisation of flue gasses to reduce effluent sulphate levels below 1,000 mg/l.	As the proportion of open mosaic habitat to be lost as a result of the Proposed Development is relatively small, and mitigation is proposed to minimise the impact of habitat loss as a result of the

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the Proposed Development and the nature of the off-site		Humber Zero Project, no significant cumulative effects will occur. There will be no permanent losses of functionally linked land as a result of the Proposed Development, and any loss of functionally-linked land due to the Humber Zero project will be strategically mitigated by the South Humber Gateway strategic mitigation project. Therefore, no

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).* **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and		cumulative effect is expected. Some limited potential for temporary noise adverse effects, of no worse than minor adverse significance.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant but may occur on a temporary and localised level. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
#NLC CULM-13		PA/2023/421	Humber Zero Project – VPI Immingham LLP Carbon Capture Plant	**Ecology and Biodiversity** The ecology chapter of the ES identifies the loss of open mosaic habitat on previously developed land, loss of grassland and scrub and the loss of habitat for small heath butterfly. There is also the potential for changes in water quality. The report to inform HRA identifies the potential for noise and visual disturbance of birds at Rosper Road Pools during construction and operation. There is also the potential for operational changes in air quality. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the	**Ecology and Biodiversity** New habitat will be created to achieve a net gain in biodiversity. Desulphurisation of flue gasses to reduce effluent sulphate levels below 1,000 mg/l.	As the proportion of open mosaic habitat to be lost as a result of the Proposed Development is relatively small, and mitigation is proposed to minimise the impact of habitat loss as a result of the Humber Zero Project, no significant cumulative effects will occur. There will be no permanent losses of functionally linked land as a result of the Proposed

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ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II*		Development, and any loss of functionally-linked land due to the Humber Zero project will be strategically mitigated by the South Humber Gateway strategic mitigation project. Therefore, no cumulative effect is expected. Also potential for some local temporary cumulative effects related to traffic and transport which may be of minor

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ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)). **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1*) will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from		adverse significance. Some limited potential for temporary noise adverse effects, of no worse than minor adverse significance. .

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		
#NLC CULM-14		PA/SCO/2023/1	Associated British Ports – Immingham Onshore Wind	**Ecology and Biodiversity** There is insufficient information in the Scoping Report for the other development to allow for cumulative assessment to be undertaken. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The construction of the Gigastack development will be clearly visible in the foreground to the left of the view, partially screening construction		Also potential for some local cumulative effects related to traffic and transport.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				operations associated with the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).* **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1*) will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and		

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ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		

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ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
#NLC CULM-15		PA/SCO/2023/2	Associated British Ports – Immingham Onshore Wind	**Ecology and Biodiversity** The scoping report identifies the potential for effects upon statutory and non-statutory designated sites and protected / notable species. However, there is insufficient information in the Scoping Report for the other development to allow for cumulative assessment to be undertaken. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES*	N/A	

				Volume IV: Appendix 3.1 (Application Document 6.4.3.1) will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant.		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
#NLC CULM-16		PA/2023/612	VEV Services Limited – Vitol (VPI Immingham)	**Ecology and Biodiversity** No ecology information provided. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good	N/A	None identified

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).* **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1*) will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2. Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant.		
#NLC CULM-17		PA/2018/918	Planning permission to construct a new gas-fired power station with a gross electrical	**Ecology and Biodiversity** Loss of brownfield habitat. In the absence of mitigation there is potential for effects on the Humber Estuary SAC / SPA / Ramsar and SSSI (changes in air and surface water pollution). **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across	Industry best practice measures to prevent surface and ground water pollution. A CEMP will detail all requirements for environmental protection and legal compliance. Pre-construction survey for	Potential for cumulative effects upon open mosaic habitat. However, the proportion of open mosaic

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			output of up to 49.9 megawatts	the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** The developments are likely to require excavation, which could have a potential impact on geology and hydrogeology. However, no significant inter-project cumulative effects have been identified in terms of the Proposed Development and other proposed/committed developments within its immediate area. Effects from the Proposed Development would be limited to within the confines of the working width, and off-site developments are not considered likely to lead to effects on geology, groundwater quality or human health within the Proposed Development, as any such development would be constructed and operated in accordance with relevant legislation and current good practice. There is some limited potential for groundwater to be affected by off-site activities through dewatering during construction creating short term reduction of groundwater levels, which could combine with similar effects from the Proposed Development. However, due to the short-term minor effects identified for the	protected species. Lighting impacts to be minimised. Noise and visual disturbance of birds was found to be not significant.	habitat to be lost as a result of the Proposed Development is minor, so no significant cumulative effects are anticipated.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Proposed Development and the nature of the off-site developments, it is considered unlikely that effects on shared receptors would be significant. At detailed design stage, the likelihood of the construction phase of the Proposed Development and the identified off-site developments occurring at the same time will need to be considered as part of the hydrogeological assessment where dewatering is required in high sensitivity groundwater environments, to assess the cumulative effects of dewatering. This should be in consultation with the Environment Agency, appropriate public water abstraction companies and private landowners (where applicable as indicated Section 5 of *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)).* **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. The operation of these may have effects on water availability and water quality due to operation. The timing of these developments may overlap with the construction of the Proposed Development; however, the Proposed Development only has minor works within the South Killingholme Drain (IDB watercourse) catchment and is assessed as having negligible effects on the watercourse for construction and operation. All Energy Infrastructure projects will include best practice pollution prevention measures and		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				will ensure that there are no significant effects to the receiving waterbodies. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1*) will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant.		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
#NLC CULM-18		PA/SCO/2022/12	Uniper - Humber Hub Blue Project	**Ecology and Biodiversity** The scoping report identifies the potential for effects upon statutory and non-statutory designated sites and protected / notable species. There is insufficient information in the Scoping Report for the other development to allow for cumulative assessment to be undertaken at this stage. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	N/A	
#NLC CULM-19		PA/2023/502	Able UK Limited – Site Enabling Works, Land	**Ecology and Biodiversity** The ecology reports associated with this development report the loss of terrestrial habitat during construction, lighting impacts and cumulative effects.	Embedded mitigation including ditch realignment and retention and enhancement of hedgerows.	As the development is providing mitigation as part of the

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			East of Rosper Road, Killingholme. Full planning application for enabling works on land east of Rosper Road, Killingholme	Noise and visual disturbance of birds found to be not significant. **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. The operation of these may have effects on water availability and water quality due to operation. The timing of these developments may overlap with the construction of the Proposed Development; however, the Proposed Development only has minor works within the South Killingholme Drain (IDB watercourse) catchment and is assessed as having	Mitigation for birds provided as part of the Halton Marshes Wet Grassland Scheme. Preconstruction checks for otter and water vole.	Halton Marshes Wet Grassland Scheme it is not anticipated that there will be cumulative effects with the Proposed Development

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				negligible effects on the watercourse for construction and operation. All Energy Infrastructure projects will include best practice pollution prevention measures and will ensure that there are no significant effects to the receiving waterbodies. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#NLC CULM-27		PA/2021/1525	Able UK Limited - Monopole Manufacturing Facility at Land at Able Marine Energy Park, south of Station Road, South Humber Bank, South Killingholme	**Ecology and Biodiversity** Loss of grassland habitat used by foraging birds (curlew). **Landscape and Visual** The construction activity associated with the identified cumulative developments, will be visible, spread across the horizon to the east, viewed in front of the Proposed Development. The presence of the other characteristic, cumulative developments, will intensify the built structures visible from this location. The addition of the construction operations associated with the Proposed Development will result in a very low cumulative impact, lower than that assessed for the Proposed Development in isolation. The impact will be short term and reversible, resulting in a minor adverse (not significant) effect. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic.	**Ecology and Biodiversity** Loss of terrestrial habitat has been mitigated through the provision of habitat as part of the Halton Marshes Wet Grassland Scheme.	Given the mitigation included in the Proposed Development for those impacts that were identified as being significant (such as noise impacts on Rosper Road Pools) and that any loss of functionally-linked land due to the project will be

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Water Environment The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. The operation of these may have effects on water availability and water quality due to operation. The timing of these developments may overlap with the construction of the Proposed Development; however, the Proposed Development only has minor works within the South Killingholme Drain (IDB watercourse) catchment and is assessed as having negligible effects on the watercourse for construction and operation. All Energy Infrastructure projects will include best practice pollution prevention measures and will ensure that there are no significant effects to the receiving waterbodies. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		strategically mitigated by the Halton Marshes Wet Grassland Scheme, no cumulative effects are anticipated.
East Lindsey District Council						
#ELDC CULM-1		N/085/0088 3/15	A hybrid application consisting of outline erection of up to 300	**Ecology and Biodiversity** Loss of terrestrial habitat within 500 m of GCN breeding ponds. However, as the Proposed Development has no impact on GCN, there is no potential for cumulative effects. **Landscape and Visual**		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			dwellings with means of access to be considered and full planning permission for change of use of land from agricultural land to a recreation ground.	Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** The precise scale of additional noise effects will be dependent on the exact works taking place at each location at any one time; however, compliance with the mitigation measures detailed within the CEMP in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* will reduce these effects as far as practicable. It has been assumed that other developments will also be required to adopt BPM as standard working practices during their construction phases and that noise and vibration levels will comply with set limits in accordance with guidance in BS 5228-1 and BS 5228-2 (Ref 13-15) Based on the distances from key project components to cumulative developments and requirements to implement BPM, it is considered that any overlapping of construction phases between the Proposed Development and the other nearby development		

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				schemes would not result in any in-combination cumulative effects at common noise-sensitive receptors. There are anticipated to be no significant residual effects due to construction and decommissioning activities from the Proposed Development, and it is considered that cumulative effects will not be significant. Operational noise emissions from nearby developments will be subject to the EIA Regulations and therefore designed to achieve appropriate operational noise limits that do not contribute to additional noise to the area (i.e., 'background creep', which could avoid any adverse effects to noise-sensitive receptors in the area). The control and mitigation of noise effects from surrounding development will be the responsibility of the developer. Given the requirement for new developments to achieve operational noise standards and the relative distance between cumulative developments and the Proposed Development, operational noise effects from the Proposed Development will remain unchanged from the residual effects stated previously and therefore remain negligible to minor adverse and not significant. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#ELDC CULM-2		N/133/0141 3/21	Cyden Homes – Residential	**Ecology and Biodiversity** No significant ecological effects identified in the ecology report. Retention of hedgerows recommended.	Retention of hedgerows recommended.	As likely effects on the majority of

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			development at Ludborough Road	Site clearance to be completed outside of the nesting bird season. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** The construction of these has the potential for adverse effects on water quality due to deposition or spillage of soils, sediments, oils, fuels, or other construction chemicals spilt on site. There is also potential for operational impacts on water quality due to additional runoff from development roads and additional traffic mobilising pollution on local roads, additional water needs and additional wastewater production. These projects will have to comply with national and local planning policy and will include best practice mitigation measures and pollution prevention during construction, and therefore are unlikely to result in any significant cumulative effects. The Proposed Development will not have any significant effects on water quality, water usage or wastewater production. On this basis there are not considered to be any significant cumulative effects. **Noise and Vibration**	Site clearance to be completed outside of the nesting bird season.	species and habitats (including birds and hedgerows) assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#ELDC CULM-15		N/105/01055/22	Charterpoint (Louth) Limited – Daisy Way, Louth	**Ecology and Biodiversity** No ecology reports available. As there were no ecology reports submitted there is insufficient information for the other development to allow for cumulative assessment to be undertaken. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	No mitigation recommended.	No potential for cumulative effects.
#ELDC CULM-18		N/019/01451/20	Brackenborough Ltd – Brackenborough Hotel	**Ecology and Biodiversity** Potential for dust during construction, noise and surface water drainage. **Landscape and Visual**	A CEMP has been prepared.	No potential for cumulative effects.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#ELDC CULM-19		N/092/0101 7/20	Lovell – Residential Development Chestnut Drive	**Ecology and Biodiversity** Potential for effects upon bats and breeding birds. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary.	**Ecology and Biodiversity** Trees with roost suitability to be retained and protected, a sympathetic lighting scheme and site clearance outside of the nesting bird season.	As likely effects on the majority of species (including bats and breeding birds) and habitats assessed for the Proposed Development are considered to be negligible, and

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Noise and Vibration Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant.
#ELDC CULM-22		N/085/01215/21	Homes by Gleeson – Residential Development Louth Road, Holton Le Clay	**Ecology and Biodiversity** No ecology reports provided. As there were no ecology reports submitted there is insufficient information for the other development to allow for cumulative assessment to be undertaken. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration**	No mitigation recommended.	No potential for cumulative effects.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		
#ELDC CULM-31		N/105/0196 1/19	Gleeson - Proposed Residential Brackenborough Road, Louth	**Ecology and Biodiversity** No ecology reports provided. As there were no ecology reports submitted there is insufficient information for the other development to allow for cumulative assessment to be undertaken. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	No mitigation recommended.	No potential for cumulative effects.
#ELDC CULM-32		N/105/0059 3/19	Cyden Homes – Proposed Residential Developme	**Ecology and Biodiversity** Potential for disturbance of breeding birds. **Landscape and Visual**	**Ecology and Biodiversity** Site clearance to be completed outside of the nesting bird season.	As likely effects on the majority of species (including

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
			nt at The Park, Eastfield Road, Louth.	Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology** Discounted as outside the 250m study area for this topic. **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.		breeding birds) and habitats assessed for the Proposed Development are considered to be negligible, and the effects of the other development are not significant, it is considered unlikely that cumulative effects could be significant.
Lincolnshire County Council						
#LCC CULM -7		PL/0037/23	Manby BGE Ltd - Anaerobic Digestor and Fertiliser Production Plant	**Ecology and Biodiversity** No significant effects identified during construction or operation in this development's EIA. **Landscape and Visual** Discounted due to scale, lack of inter-visibility with the representative viewpoints and distance from the Proposed Development. **Geology and Hydrogeology**	**Ecology and Biodiversity** A CEMP will detail measures to prevent adverse effects during construction. Site clearance will be completed outside of the nesting bird season or	None identified.

Stage 4: Cumulative Assessment of Shortlisted 'Other Development'						
ID	**Tier**	**Application Reference**	**Application Name**	**Assessment of Cumulative Effect with the Proposed Development**	**Proposed Mitigation Applicable to the Proposed Development and 'Other Development'**	**Residual Cumulative Effect**
				Discounted as outside the 250m study area for this topic **Water Environment** Discounted as is outside the Zone of Influence for cumulative effects which extends 1 km around the DCO Boundary. **Noise and Vibration** Discounted as is outside 500m Zone of Influence for any interaction of noise emissions with the Proposed Development.	under an ecological watching brief. Trees and vegetated corridors to be retained and protected. A sensitive lighting scheme will be implemented.	

Summary of Inter-Project Cumulative Assessment

20.8.39 The Short List of other developments within **Table 20-10** have been considered by each of the environmental topics and, where applicable, assessed for inter-project cumulative effects on sensitive receptors by that topic in isolation, and then further in relation to potential impact interactions between other development and the combination of individual topic impacts.

20.8.40 Of the developments identified with the potential for inter-project effects, none are anticipated to result in significant cumulative effects with the Proposed Development, during construction or operation.

20.8.41 In most cases, this is due to the other development being located at such a distance from the Proposed Development that any potential for interaction is limited. In some cases, where the other development is relatively near the Proposed Development, it was concluded that the additional mitigation proposed within the Draft CEMP, as well as the mitigation proposed by the other development, once in place, would not result in any significant cumulative effects.

20.8.42 However, some temporary and localised minor adverse cumulative effects have been identified, relating to noise, traffic and the impact upon ecological receptors (namely birds). Additionally, when the breath of cumulative schemes are looked at in an additive way, it's clear that they will generate employment opportunities during both construction and operational phases and thus a minor beneficial cumulative effect is predicted.

20.9 Intra-Project Combined Effects Assessment

Shared Receptor List

20.9.1 Intra-project effects occur where identified environmental or social receptors relevant to the Proposed Development could be affected by more than one type of impact arising from activities associated with the Proposed Development. An example of this is a residential receptor, which could be affected by changes in air quality, noise and vibration, traffic and visual amenity effects. When considering these impacts in-combination, the overall magnitude of change could increase, ultimately changing the likely significance of effects. Based on the nature of the assessment, this is done on a qualitative basis only.

20.9.2 A summary of the potential 'shared receptors' for the intra-project effects that may be affected by the Proposed Development is presented in **Table 20-11**. Where the cell is shaded green the receptors in that group have been assessed by more than one topic. Where the cell is grey the receptors only relate to one specific technical area and thus are not considered within the intra-project effects assessment at ES stage.

20.9.3 It's also important to note that for some topics, the impact upon an individual receptor has already considered a combination of different potential impacts (e.g., effect on ecological receptors from noise and vibration and traffic).

Table 20-11: Shared Receptor List

Receptors	Technical Chapters												
	Ecology and Biodiversity	Landscape and Visual	Historic Environment	Geology and Hydrogeology	Agriculture and Soils	Water Environment	Traffic and Transport	Noise and Vibration	Air Quality	Climate Change	Socio-economics	Health and Wellbeing	Materials and Waste
Residential Receptors		✓				✓	✓	✓	✓				
Human Health								✓	✓			✓	
Communities		✓						✓	✓		✓	✓	
Community Facilities											✓	✓	
Lincolnshire Wolds AONB		✓									✓		
Landscape Character Areas		✓											
Public Rights of Way		✓					✓				✓	✓	
Cycle Routes							✓				✓		
Roads and Railways		✓					✓	✓	✓		✓		
Users of local roads / trunk roads		✓					✓		✓		✓		
Businesses		✓									✓		
Historic Buildings			✓										
Archaeological Sites			✓										
Ecological Receptors	✓							✓	✓				
Freshwater Designated Sites	✓					✓		✓					

Receptors	Technical Chapters												
	Ecology and Biodiversity	Landscape and Visual	Historic Environment	Geology and Hydrogeology	Agriculture and Soils	Water Environment	Traffic and Transport	Noise and Vibration	Air Quality	Climate Change	Socio-economics	Health and Wellbeing	Materials and Waste
Water Framework Directive (WFD) Waterbodies				✓		✓							
Water Resources Licensed Abstractions				✓		✓							
Water Resources (Private Water Supplies)				✓		✓							
Flood Risk Receptors						✓				✓	✓		
BMV Agricultural Land					✓								
Geology				✓									
Soils				✓	✓								
Groundwater				✓									
Chalk streams and blow wells				✓		✓							
Climate										✓			
Material and Waste													✓

20.9.4 Topis which have not identified common receptors include:

- **Climate Change**: The GHG assessment provided within this chapter is considered inherently cumulative as it presents the impact of the development in the context of National carbon budgets, used to represent the key sensitive receptor, (i.e., the global climate). This includes the provision of legally binding limits of GHG emissions that can be emitted by the UK if it is to meet its net zero targets by 2050. This assessment is considered comprehensive and includes a worst case within the defined assessment

parameters. Therefore, no additional intra-project effects assessment is required within this chapter. The effects of climate change on different receptors in-combination with the other identified impact pathways within the EIA have already been assessed in each topic chapter of this ES through consideration of the future baseline;

- **Historic Building and Archaeological Sites:** Impacts to historic environment receptors are wholly assessed within *ES Volume II Chapter 8: Historic Environment (Application Document 6.2.8)*. This includes potential visual, and noise and vibration impacts; and
- **Materials and Waste:** No intra-project effects are anticipated as the impacts to material and waste receptors are wholly assessment within *ES Volume II: Chapter 18: Material and Waste (Application Document 6.2.18)*;
- **BMV Agricultural Land:** Impacts to agricultural land are assessed in *ES Volume II Chapter 10: Agriculture and Soils (Application Document 6.2.10)*;
- **Geology and Groundwater:** Impacts to Geology are wholly assessed in *ES Volume II: Chapter 9: Geology and Hydrogeology (Application Document 6.2.9); and*
- **Landscape Character Areas:** Impacts to Landscape Character Area are wholly assessed in *ES Volume II Chapter 7: Landscape and Visual (Application Document 6.2.7)*.

20.9.5 **Major Accidents and Disasters:** This topic is excluded from the cumulative assessment as a different assessment approach is used from the other chapters within the ES. *ES Volume II Chapter 19: Major Accidents and Disasters (Application Document 6.2.19)* provides additional information including an assessment of an event occurring as a result of the Proposed Development as well as separately considering the potential impact of a third-party event occurring.

Intra-Project Effects Assessment

20.9.6 This assessment of intra-project effects involves the identification of those receptors who have the potential to be affected by more than one of the identified residual effects as identified in the individual technical chapters within ES Volume II (*Application Document 6.2*). These receptors include residential properties, ecological or biological receptors and the physical environment.

20.9.7 Each of the technical assessments reported in this ES *(ES Volume II Application Document 6.2*) has identified residual effects which may occur as result of the Proposed Development, ranging from negligible or minor (not significant) to moderate and major (significant). Multiple effects upon one or more common receptors could theoretically interact or combine, to result in a combined effect which is more or less significant than the effects individually.

20.9.8 When considering intra-project effects, the mitigation measures as set out in Chapters 6 to 18 (including embedded mitigation measures built into the Proposed Development's design and additional mitigation in the Draft CEMP *(ES Volume IV: Appendix 3.1 (Application Document 6.4)* must be taken into account. Therefore, only residual effects (post-mitigation) are considered.

20.9.9 In assessing potential intra-project effects, receptors experiencing individual residual effects of minor or greater magnitude have been considered. Examples of the types of impacts that could be experienced by human receptors, and which may interact are the combined impacts relating to different activities relating to noise, traffic, air quality and visual effects, during both construction and operation. Other examples include the impacts on local ecology as a result of physical disturbance and noise impacts, or the visual impact and impact caused to the cultural heritage setting as a result of a new part of the Proposed Development.

20.9.10 Mitigation of any intra-project effects identified is best achieved through management and control measures employed to prevent or reduce the individual effects in the first instance, thereby reducing the likelihood of the effects interacting and combining.

Intra-Project Effects Summary

20.9.11 Table 20-12 provide a qualitative assessment of the potential for intra-project effects to arise, following a review of ES Volume II Chapters 6-18 (Application Document 6.2).

20.9.12 Whilst potential intra-project effects have been identified during construction, as described in 20.9.7 and presented in **Table 20-12**, following the incorporation of the embedded and additional mitigation, no significant cumulative intra-project effects are expected to occur. No significant operational phase intra-project effects are expected to occur.

Table 20-12: Intra-Project Cumulative Effects – Construction Phase

Common Receptor	Topics which may affect receptor	Intra-Project Effects
Residential Receptors	• Landscape and Visual • Traffic and Transport • Noise and Vibration • Air Quality • Flood Risk	Whilst some localised effects may occur during the construction phase for a limited number of residential receptors as a result of the combined effects of traffic, air quality and noise, no significant adverse intra-project effects are anticipated.
Human Health	• Noise and Vibration • Air Quality • Socio-economics	The impacts associated with noise and vibration, air quality and socioeconomics on human health have been assessed within *ES Volume II Chapter 17: Health and Wellbeing (Application Document 6.2.17)* and no significant adverse intra-project effects are anticipated.
Communities and Community Facilities	• Socioeconomics • Health and Wellbeing	The assessment of amenity, community severance and effects on community effects have been assessed within *ES Volume II: Chapter 16 Socio-economics*. No significant adverse intra-project effects are anticipated.
Lincolnshire Wolds AONB	• Landscape and Visual • Socio-economics	The assessment of effects on Lincolnshire Wolds AONB has been assessed within *ES Volume II Chapter 7: Landscape and Visual (Application Document 6.2.7).* No significant adverse intra-project effects are anticipated.
Public Rights of Way (PRoW) / Cycle Routes	• Landscape and Visual • Traffic and Transport • Socio-economics • Health and Wellbeing	The assessment of effects on PRoW and cycle routes has been assessed in *ES Volume II Chapter 7 Landscape and Visual (Application Document 6.2.7).* Moderate adverse effects (which are significant) have been identified on 3 PRoW's. The assessment on PRoW within *ES Volume II Chapter 12 Traffic and Transport (Application Document 6.2.12) and Chapter 16 Socio-economics (Application Document 6.2.16)* indicates that there would be no significant effects on PRoW. Consequently, it is concluded that there would be no significant adverse intra-project effects.
Railways	• Landscape and Visual • Socioeconomics	*ES Volume II Chapter 7 Landscape and Visual (Application Document 6.2.7)* assesses the visual impacts of the Proposed Development on passengers on the Lincolnshire Wolds Railway. No significant residual landscape and visual effects are anticipated.

Common Receptor	Topics which may affect receptor	Intra-Project Effects
		The Lincolnshire Wolds Railway is assessed as a visitor attraction within *ES Volume II Chapter 16 Socio-Economics (Application Document 6.2.16)*. No significant adverse intra-project effects on railways are anticipated.
Local Roads and road users	• Traffic and Transport • Air Quality • Noise and Vibration • Socio-economics	Whilst some localised effects may occur during the construction phase for a limited number of local road users as a result of the combined effects of traffic, air quality and noise, no significant adverse intra-project effects are anticipated.
Businesses	• Landscape and Visual • Socio-economics	No significant adverse intra-project effects on local businesses are anticipated.
Ecological Receptors	• Ecology and Biodiversity • Noise and Vibration • Air Quality	Impacts to ecological receptors are assessed within *ES Volume II Chapter 6: Ecology and Biodiversity (Application Document 6.2.6).* The assessment undertaken includes looking at the combined impacts of air quality and noise on any individual ecological receptors. Whilst some minor, temporary disturbance issues are possible, no significant adverse intra-project effects on ecological receptors are expected.
Freshwater Designated Sites	• Ecology and Biodiversity • Water Environment • Air Quality	Impacts to Freshwater Designated Sites from noise and vibration and air quality are wholly assessed within *ES Volume II Chapter 6: Ecology and Biodiversity (Application Document 6.2.6).* No significant adverse intra-project effects are anticipated.
WFD Waterbodies	• Geology and Hydrogeology • Water Environment	The risks to hydrogeology, including WFD Groundwater bodies has been assessed in *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9).* The risk to surface watercourses (including WFD designated) has been assessed in *ES Volume II Chapter 11 Water Environment (Application Document 6.2.11).* A WFD assessment has also been produced, refer to *ES Volume IV: Appendix 11.4 (Application Document 6.4.11.4).* When assessing the combined impacts on the WFD waterbodies, no significant adverse intra-project effects are anticipated.

Common Receptor	Topics which may affect receptor	Intra-Project Effects
Water Resources Licensed Abstractions; and	• Geology and Hydrogeology • Water Environment	*ES Volume II Chapter 11 Water Environment (Application Document 6.2.11)* assesses effects to water resources, associated with water quality or changes to water availability, including public abstractions and private water supplies. *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9)* assesses effects to hydrogeology, which includes aquifers, SPZ, de-regulated water supplies, artesian conditions, and groundwater resource losses). No significant adverse intra-project effects are anticipated.
Water Resources (Private Water Supplies)		
Flood Risk Receptors	• Water Environment • Socio-economic • Climate change	The assessment of flood risk to and from the Proposed Development has been wholly assessed within the Flood Risk Assessment (ES Volume IV: Appendix 11.5 (*Application Document 6.4.11.5*)). This assessment included an assessment related to climate change. No significant adverse intra-project effects are anticipated.
Soils	• Geology and Hydrogeology • Agriculture and Soils	*ES Volume II Chapter 10 Agriculture and Soils (Application Document 6.2.10)* assesses effects of the Project Development on agriculture and soils whilst *ES Volume II Chapter 9 Geology and Hydrogeology (Application Document 6.2.9*) also looks at the potential for contamination and its impact on soils. No significant adverse intra-project effects are anticipated.
Chalk streams and blow wells	• Water Environment • Geology and Hydrogeology	The route of the Proposed Development was amended and moved east to avoid an identified chalk stream, Wellbeck Spring to reduce potential intra-project effects. Additionally, based on publicly available mapping, no known blow wells fall within the DCO Site Boundary. Therefore, there would be no significant effects on chalk streams and blow wells. No significant adverse intra-project effects are anticipated.

20.10 Summary and Conclusions

20.10.1 The assessment of intra-project combined effects has considered the potential for the residual effects of minor significance and above, identified within each of the technical assessments reported within Chapters 6 to 18 of the ES *(ES Volume II, Application Document 6.2),* to interact and combine to affect common receptors. The intra-project assessment has concluded that there would be no significant combined effects during either construction or operation of the Proposed Development.

20.10.2 The assessment of inter-project cumulative effects has considered other developments within 15 km of the DCO Site Boundary (identifying 133 developments for consideration at Stage 1 in the long list, and 43 developments for inclusion in the shortlist of developments and assessment at Stages 3 and 4). The potential for cumulative effects to arise, from one or several of these developments in combination with the Proposed Development has been assessed. Through consideration of the available information for each of the identified developments, it has been concluded there is the potential for cumulative effects to occur related to:

- Temporary adverse (non-significant) cumulative effects associated with noise generated at the Proposed Development and at least one other development;
- Temporary adverse (non-significant) cumulative effects upon local ecological receptors, particularly to birds using the Rosper Road pools up near Immingham;
- Temporary adverse (non-significant) cumulative effect related to traffic movements on the local road network; and
- Beneficial effects related to employment opportunities that will arise during both construction and operation of the Proposed Development along with the other identified developments.

20.10.3 Due to the incorporation of both embedded and additional mitigation measures within the Proposed Development and associated with the other identified developments, **it is not anticipated that any significant cumulative effects would occur**, during either the construction or operational phases.

20.11 References

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Ref 20-16 *AECOM (2022).* Viking CCS Pipeline Preliminary Environmental Information Report. Available at: [redacted]

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