



# Immingham Green Energy Terminal

TR030008

Volume 6

6.2 Environmental Statement

Chapter 25: Cumulative and In-Combination Effects

Planning Act 2008

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009 (as  
amended)

September 2023

# Infrastructure Planning

## Planning Act 2008

The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009 (as amended)

# Immingham Green Energy Terminal Development Consent Order 2023

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## 6.2 Environmental Statement Chapter 25: Cumulative and In- Combination Effects

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## Table of contents

Chapter	Pages
<b>25. Cumulative and In-Combination Effects .....</b>	<b>25-1</b>
25.1 Introduction .....	25-1
25.2 Consultation .....	25-2
25.3 Legislation, Planning Policy and Guidance .....	25-14
25.4 Assessment Methodology .....	25-15
25.5 In-Combination Effects Assessment.....	25-31
25.1 Cumulative Effects Assessment (Stages 1 - 3) .....	25-45
25.2 Limitations and difficulties .....	25-51
25.3 Residual Effects and Conclusions .....	25-51
25.4 References.....	25-65

### Tables

Table 25-1 Summary of Consultation .....	25-3
Table 25-2: Shared receptor list (grey fill indicates where the assessment of environmental effects on a resource or receptor is considered inherently within the main assessment, blue fill indicates where there is potential for an in-combination effect on a resource or receptor to arise).....	25-17
Table 25-3: Summary of indicative Zones of Influence (Zols).....	25-22
Table 25-4 Development Tier in Accordance with Advice Note Seventeen .....	25-27
Table 25-5 Classification of In-combination and Cumulative Effects .....	25-30
Table 25-6: Summary of in-combination effects (construction) .....	25-33
Table 25-7: Summary of In-combination effects (Operation) .....	25-39
Table 25-8: Summary of in-combination effects (decommissioning).....	25-43
Table 25-9 Available information for each shortlisted development.....	25-46
Table 25-10 Summary of significant In-combination effects.....	25-56
Table 25-11 Summary of significant Cumulative effects .....	25-59

### Plates

Plate 25-1 Staged Approach to the Cumulative Assessment.....	25-22
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## 25. Cumulative and In-Combination Effects

### 25.1 Introduction

- 25.1.1 This chapter of the Environmental Statement (“ES”) presents an assessment of the potential for cumulative and in-combination effects as a result of the Project.
- 25.1.2 The cumulative effects and in-combination assessment, hereafter referred to as the Cumulative Effects Assessment (“CEA”) considers the following types of effect:
- a. **In-combination (combined) effects:** these effects occur where a single receptor is affected by more than one source of effect from different aspects of the Project. An example of an in-combination effect could be where a local resident is affected by dust, noise and traffic disruption during the construction of the Project, with the overall result being a greater adverse effect on amenity than when each individual effect is considered in isolation.
  - b. **Cumulative effects:** these effects occur as a result of a number of developments, which individually might not be significant, but when considered together with the Project could create a significant cumulative effect on a shared receptor.
- 25.1.3 The assessment presented in this chapter draws on the assessment of impacts undertaken within **Chapters 6 - 24** of the ES [TR030008/APP/6.2]. This chapter also provides details of other proposed developments within the vicinity of the Project that may be of relevance to the CEA, using information that is available within the public domain. This includes information relating to Nationally Significant Infrastructure Projects (“NSIPs”), North East Lincolnshire Council (“NELC”) Local Plan allocations, Marine License Applications, proposed schemes that have planning applications registered with the local planning authorities and/or already consented developments that have not yet been constructed or are operational.
- 25.1.4 The CEA does not consider developments that are already constructed and operating, as such developments are accounted for in the baseline conditions established for the assessments as reported within **Chapters 6 - 24** of this ES [TR030008/APP/6.2].
- 9.1.1 This chapter is supported by the following figures [TR030008/APP/6.3]:
- a. **Figure 25.1: Cumulative Assessment Long List** which illustrates the Project location in relation to other proposed developments included on the long list of schemes considered for the CEA; and
  - b. **Figure 25.2: Cumulative Assessment Short List** illustrates the Project location in relation to other proposed developments included on the short list of schemes considered for the CEA.

25.1.5 This chapter should also be read in conjunction with the following accompanying appendices [TR030008/APP/6.4]:

- a. **Appendix 25.A: Cumulative Effects Assessment Long List;**
- b. **Appendix 25.B: Cumulative Effects Assessment Shortlist; and**
- c. **Appendix 25.C: Assessment of Cumulative Effects**

## 25.2 Consultation

25.2.1 A summary of consultation and responses relating to the CEA is provided in **Table 25-1**. This presents comments received from the Planning Inspectorate's Scoping Opinion (**Appendix 1.A [TR030008/APP/6.4]**) as well as the two rounds of Statutory Consultation undertaken for the Project. It also outlines how these responses have been considered in the CEA. Cumulative development ID references have been included within the consultation responses based on how they have been referenced within the CEA (these ID references are listed in **Table 25-9**).

25.2.2 The list of 'other developments' was also informed by comments received during consultation. Where further developments were identified through the consultation process, these were included within the assessment.

**Table 25-1 Summary of Consultation**

Reference/Date	Consultee	Summary	How addressed in the CEA
Scoping Report August 2022	Planning Inspectorate	The Scoping Report ( <b>Appendix 1.A</b> of ES <b>[TR030008/APP/6.4]</b> ) states that the significance of intra-project effects would be determined using professional judgement, and no further details are provided on the methodology. The ES should explain how potential interactions are identified and provide justification for the conclusions reached.	<b>Section 25.3</b> explains the methodology and approach to the in-combination effects assessment, detailing how potential interactions have been identified and considered.
		The Scoping Report does not suggest any other developments for inclusion on the longlist. The Applicant is advised to agree the list of developments with NELC, where possible. The ES should include a summary table, with relevant developments' current stage, location and timing of the proposed works to help to identify potential overlaps between activities that could lead to cumulative impacts.	The Applicant engaged with NELC on the long list of cumulative schemes for potential inclusion and consideration in the CEA. Following identification and review of the long list of cumulative schemes, a response was received from NELC on 27 June 2023 recommending the inclusion of the Velocys Waste to Fuel Plant Scheme (ID 116). This scheme has been subsequently included on the shortlist of cumulative schemes, and has been assessed within this CEA. The long list of cumulative schemes is presented in <b>Appendix 25.A</b> of the ES <b>[TR030008/APP/6.4]</b> and consists of a summary table detailing information on the location and status of cumulative schemes, where this information is available.
		The ES should include a figure depicting the locations and extent of cumulative developments in relation to the Proposed Development.	<b>Figure 25.1 [TR030008/APP/6.3]</b> supports this chapter and shows the location of the shortlisted developments for the CEA in relation to the Project. The shortlist of developments is

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
			also presented in <b>Appendix 25.B [TR030008/APP/6.4]</b> .
	North East Lincolnshire Council	In accordance with the Planning Inspectorate's Scoping Opinion, it was advised the Applicant should agree the list of developments to be included on the long list with the NELC.	The Applicant engaged with NELC on various occasions throughout the development of the long list of cumulative schemes for the Project. The long list of cumulative schemes was agreed with NELC on 27 June 2023 and the recommendation for the inclusion of an additional scheme was received from NELC which was subsequently incorporated into the assessment.
Statutory Consultation January 2023	National Grid	I confirm that National Grid Electricity Transmission PLC (NGET) has no existing apparatus within or in close proximity to the proposed site boundary. The following projects have been proposed and fall within close proximity to the proposed site boundary: <ul style="list-style-type: none"> <li>· E2DC; to construct a High Voltage Direct Current subsea link from Peterhead to a location in the South Humber area;</li> <li>· E4D3; to construct a High Voltage Direct Current subsea link from Peterhead in the north east of Scotland to Drax in the Yorkshire area of England;</li> <li>· E4L5; to construct a High Voltage Direct Current subsea link from Peterhead to a location in the South Humber area</li> </ul>	The relationships between the National Grid identified schemes and the Project have been reviewed as part of the early stages of the CEA, these projects have been discounted during Stage 1 for the following reasons: the National Grid interactive map shows E2DC ending at Hawthorn Pit in Seaham, County Durham and not linking to the South Humber area. E2DC has therefore not been considered within the CEA as this is outside the largest Zone of Influence considered within the CEA.  National Grid projects E4D3 and E4L5 do not fall within the 5km search area for major developments.
	Lincolnshire Wildlife Trust	LWT recognizes that marine works (capital dredging and piles) have been scoped in and we	The cumulative impact of the Project and maintenance dredge disposal within Grimsby

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
		<p>will be monitoring further assessments of pile-driving impacts, capital dredging impacts and dredge disposal. We have provided details above that will facilitate assessments of dredging and construction impacts. However, we do not agree with the scoping out of maintenance dredging in the operational phase. While the Applicant has claimed that ‘the predicted impacts on benthic habitats and species as a result of maintenance dredging are considered to be equivalent or lower than capital dredge and comparable to the existing maintenance dredge regime’, it is currently unclear how this proposed maintenance would contribute to cumulative impacts of ongoing works within the Humber Estuary. Therefore, we recommend that maintenance dredging is scoped into further assessment, and that both capital dredging and maintenance dredging are included in future cumulative impact assessments.</p>	<p>and Immingham and the Sunk Dredged Channel (ID 115) has been assessed within the Stage 4 CEA, presented in <b>Appendix 25.C [TR030008/APP/6.4]</b>.</p> <p>Further information on the impact of maintenance dredging on habitats during the operational phase has been provided within <b>Section 9.8 of Chapter 9: Nature Conservation (Marine Ecology) [TR030008/APP/6.2]</b>.</p>
	Marine Management Organisation	<p>The common approach to cumulative assessment contains inherent contradictions, such that it can be stated (25.1.2b) that cumulative effects occur “as a result of a number of developments, which...when considered together with the Project could create a significant cumulative effect on a shared receptor”; but then also stated (25.1.5) that “The CEA does not consider developments that are already constructed and operating, as such existing operational facilities are accounted for in the baseline” (so negating a major implication of ‘cumulative’). Table 25.4 item 26 also seems to</p>	<p>It is not appropriate to consider developments that are already constructed and operating within the CEA. These developments become part of the existing baseline and have therefore been considered inherently within each respective technical chapter of the ES as relevant (<b>Chapter 6 – 24 [TR030008/APP/6.2]</b>). This approach is explained in <b>Paragraph 25.1.4</b>. The Planning Inspectorate's Advice Note 17 (Ref 25-4) has been used to inform the CEA for the Project, and Table 2 of this advice note clarifies the developments that should be considered within the CEA and the respective</p>



Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

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		<p>indicate that cumulative assessment will only consider temporal overlap of construction phase impacts (rather than non-contiguous and lifetime impacts). Overlap of operational phases is recognised but in Table 25.5 item 16 it is then stated that there is “no certainty at present that cumulative effects can be scoped out” on the basis that changes to physical processes are spatially limited. The MMO strongly consider the retention of this cumulative assessment in any case because spatial overlap need not be the sole criterion for cumulative impacts in the case of impacts to a pathway. It would be of value to illustrate how adjacent development impacts, even where these do not directly join up, create a patchwork of impacted areas and possibly a chain of accumulating impacts along a physical process pathway, e.g. how sources and sinks of sediment may be cumulatively disrupted. Furthermore, the MMO would expect developments already constructed and operating to be included in the assessment.</p>	<p>tiers that should be assigned when establishing certainty. Each type of development within this table has been considered within the CEA and updated for the ES.</p> <p>ID 22 (Immingham Eastern Ro-Ro Terminal (“IERRT”)) has been scoped into Stages 3 and 4 of the CEA, and the construction and operation of this Project has been fully assessed in relation to its potential to cumulatively interact with the Project, using information that is readily available in the public domain. Within the Stage 4 CEA, individual environmental topics have specifically addressed the potential for the Project to cumulatively interact with the IERRT scheme (<b>Appendix 25.C [TR030008/APP/6.4]</b>). All phases of the IERRT scheme (construction and operation) have been considered within the updated CEA due to the proximity and scale of this scheme in relation to the Project.</p> <p>The approach to the CEA is consistent with the guidance set out within the Planning Inspectorate’s Advice Note 17 (Ref 25-4), therefore this is considered to be an appropriate and proportionate approach to assessing the potential cumulative effects of the Project.</p>
	<p>Marine Management Organisation</p>	<p>The cumulative and in-combination assessment provided does not reference fish receptors at this stage. The MMO would have expected to see at least a brief scoping assessment of cumulative impact in the context of marine ecology.</p>	<p>An assessment of Marine Ecology cumulative effects has been undertaken as part of the CEA and is presented in <b>Appendix 25.C [TR030008/APP/6.4]</b>.</p>

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
			<p>Fish receptors have been assessed within the ES. This can be found in <b>Section 9.8 of Chapter 9: Nature Conservation (Marine Ecology) [TR030008/APP/6.2]</b>.</p> <p>As part of the in-combination effects assessment, the potential for in-combination effects to occur on fish and other marine ecology receptors has been assessed. Following a review of the technical <b>Chapters 6-24 [TR030008/APP/6.2]</b>, it has been concluded that there will be no in-combination effects on fish. The in-combination effects assessment is presented in <b>Section 25.5</b> and details any in-combination effects identified on other marine ecology receptors.</p>
	DFDS Seaways	<p>There is inconsistency in the IGET consultation materials, particularly between the PEIR and the documents intended for general local audiences in how they consider the impact of the IERRT alongside the IGET. For example, the Statement of Community Consultation says that IERRT “is a separate project unrelated to the IGET project and the IGET team will make this clear in all materials and correspondence with stakeholders and the public.” This approach underplays the significance of the cumulative effect of the two projects taking place in such close proximity and does not reflect the approach which is better set out in the PEIR which correctly identifies the IERRT as the development in the area with the greatest potential to lead to significant cumulative effects (PEIR Volume 1 Non-Technical Summary</p>	<p>The IERRT scheme is included in the CEA due to its proximity to the Project, as well as the potential for the construction and operational phases to overlap.</p> <p>The potential for the Project to cumulatively interact with this scheme has been fully considered and assessed in detail within the Stage 4 CEA, presented in <b>Appendix 25.C [TR030008/APP/6.4]</b>.</p>

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

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		at 5.21.) and notes that the two projects are in close spatial proximity with the potential for their construction programmes to overlap.	
	DFDS Seaways	Mitigation for the most vulnerable part of the Immingham Oil Terminal (“IOT”) trunkway in the IERRT proposal suggested moving the most vulnerable part of the trunkway, the finger pier, to the eastern side of the main jetty. The IGET prohibits this as a mitigation option as it is in the same space. The IGET proposals consider that there are not likely to be significant cumulative effects in relation to the IERRT when considered together with the IGET for Major Accidents and Disasters and so provides no mitigation for what could be a potentially environmentally and commercially disastrous incident between a vessel and the IOT trunkway as it handles flammable, toxic and potentially polluting products which would affect all users of the port and could affect the operation of critical national infrastructure. This is a major safety concern and alternative mitigation needs to be provided in the IERRT DCO application that does not involve moving the finger pier, as the IGET proposal negates that option.	<p>The mitigation proposed for IERRT is outside the scope of the Project and is subject to a separate application. Moving the finger pier as a consequence of IERRT is a matter for IERRT and that the Project understand IERRT does not consider the need to move the finger pier to the eastern side of the main jetty to be necessary mitigation. It follows, therefore, that as such the Project Development Consent Order (“DCO”) application would not result in cumulative effects in this regard.</p> <p>The potential for the Project to cumulatively interact with IERRT has been extensively considered within the CEA and this assessment is presented within <b>Appendix 25.C [TR030008/APP/6.4]</b>.</p>
	DFDS Seaways	The value of the ecological enhancements proposed for the IERRT have not been made clear and nothing has been further suggested in assessing the cumulative effect of both projects.	The IERRT ecological enhancements are set out within the woodland enhancement plan that is a DCO requirement for that scheme. The area of woodland subject to those enhancements will not be impacted by the Project.

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
	DFDS Seaways	We remain extremely concerned that the safety risks, in particular around the IOT trunkway have been scoped out of assessment are not being considered in cumulative effect. Mitigation is needed to address the cumulative effect which the IGET will have with the IERRT and robust measures need to put in place before IGET can go ahead.	For each safety hazard identified during the construction and operational phases of the project, such as vessel collision with another vessel, or vessel allision with an IGET berth, the potential causes and mitigation measures were reviewed. Further information on the mitigation measures planned as part of IGET and the evaluation of the potential frequency and consequences of each hazard can be found within <b>Chapter 22: Major Accidents and Disasters [TR030008/APP/6.2]</b>  The Cumulative Effects Assessment set out within this chapter provides a detailed assessment of the potential for cumulative effects associated with the Project and the IERRT scheme. The results of this assessment are presented within <b>Appendix 25.C [TR030008/APP/6.4]</b> .
	Natural England	<b>Chapter 25: In-Combination Screening Assessment</b>  The HRA will need to consider in-combination impacts from other relevant projects and plans. The in-combination requirement makes sure that the effects of numerous small proposals, which alone would not result in a significant effect, are assessed to determine whether their combined effect would be significant enough to require more detailed assessment.  Plans or projects that should be considered in the in-combination assessment include the following:	The <b>Habitat Regulations Assessment [TR030008/APP/7.6]</b> considers the cumulative impacts of the Project with other identified developments, based on the criteria highlighted by Natural England.

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
		<p>i. The incomplete or non-implemented parts of plans or projects that have already commenced;            ii. Plans or projects given consent or given effect but not yet started;            iii. Plans or projects currently subject to an application for consent or proposed to be given effect;            iv. Projects that are the subject of an outstanding appeal;            v. Ongoing plans or projects that are the subject of regular review;            vi. Any draft plans being prepared by any public body;            vii. Any proposed plans or projects published for consultation prior to application.</p> <p>Natural England has no specific comments to make on this Chapter but will provide further detailed advice on the in-combination assessments undertaken as part of the HRA. These will need to consider all of the impact pathways that has been discussed within this letter.</p>	
Statutory Consultation June 2023	DFDS Seaways	<p><b>Cumulative effects</b></p> <p>There is inconsistency in the IGET consultation materials, particularly between the PEIR and the documents intended for general local audiences in how they consider the impact of the IERRT alongside the IGET. For example, the Statement of Community Consultation says that IERRT “is a separate project unrelated to the IGET project and the IGET team will make this clear in all</p>	<p>The potential for the Project to cumulatively interact with IERRT (ID 22) has been extensively considered within the CEA (<b>Appendix 25.C [TR030008/APP/6.4]</b>) of this ES due to the nature of the works, the close proximity of both schemes, the potential for construction phases to overlap and that the IERRT scheme has the greatest potential for significant cumulative effects.</p>

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
		<p>materials and correspondence with stakeholders and the public.” This approach underplays the significance of the cumulative effect of the two projects taking place in such close proximity and does not reflect the approach which is better set out in the PEIR which correctly identifies the IERRT as the development in the area with the greatest potential to lead to significant cumulative effects (PEIR Volume 1 Non-Technical Summary at 5.21.) and notes that the two projects are in close spatial proximity with the potential for their construction programmes to overlap. The PEIR addendum does nothing to address these concerns despite the progress of the IERRT towards examination.</p>	
		<p><b>Marine navigation and congestion – tug availability</b></p> <p>We have further concerns that marine navigation has not been considered cumulatively, in particular tug availability which is likely to be made more in demand by the IGET. If tugs are not so readily available to service the vessel movements on the IERRT and the IGET this will add to marine congestion and create delays in the vicinity.</p>	<p>Risk controls during construction and operation of the Project were identified at the HAZID workshop as part of the Navigational Risk Assessment (“NRA”) and are summarised in <b>Chapter 12: Marine Transport and Navigation [TR030008/APP/6.2]</b> and <b>Appendix 12.A [TR030008/APP/6.4]</b>. The NRA also considers navigational safety impacts.</p> <p>Marine Navigation cumulative and in-combination effects (which includes an assessment of the cumulative impact of the Project together with IERRT) are addressed in <b>Chapter 25: Cumulative and In-Combination Effects [TR030008/APP/6.2]</b> and <b>Appendix 25.C: Cumulative Effects Assessment [TR030008/APP/6.4]</b>.</p>

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Reference/Date	Consultee	Summary	How addressed in the CEA
			Marine congestion is managed by Humber Vessel Traffic Service (“VTS”) as part of the wider port movements planning/live traffic plan.
		<p><b>Marine ecology</b></p> <p>The value of the ecological enhancements proposed for the IERRT have not been made clear and nothing has been further suggested in assessing the cumulative effect of both projects.</p>	<p>The enhancements proposed for IERRT are outside the scope of the Project and are subject to a separate application. The potential for the Project to cumulatively interact with IERRT has been extensively considered within the CEA and this assessment is presented within <b>Appendix 25.C [TR030008/APP/6.4]</b>.</p>
		<p><b>Conclusion</b></p> <p>We remain extremely concerned that the safety risks, in particular around the IOT trunkway have been scoped out of assessment are not being considered in cumulative effect.</p> <p>Mitigation is needed to address the cumulative effect which the IGET will have with the IERRT and robust measures need to put in place before IGET can go ahead.</p>	<p>The potential for the Project to cumulatively interact with IERRT has been extensively considered within the CEA, this is presented within <b>Appendix 25.C [TR030008/APP/6.4]</b>.</p> <p>As described within the Marine Transport and Navigation section of the CEA, the Project berth has been designed to be aligned with the existing Immingham Oil Terminal (“IOT”) such that during operation it will not reduce the available channel width to the north. Vessels passing to the north will therefore be able to continue using the main channel. A proportion of these vessels may also pass the Project, but any effects of IERRT will be separate as it will be during a different part of their passage.</p> <p>In addition to the NRA, further assessments such as Quantitative Risk Assessment (“QRA”) will be ongoing throughout the Project development to ensure all required mitigation measures are adopted to minimise the residual</p>

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

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Reference/Date	Consultee	Summary	How addressed in the CEA
			risk across all areas of the Project to ALARP. These studies will be contained within the COMAH Safety Report to be submitted to the COMAH Competent Authority.



## 25.3 Legislation, Planning Policy and Guidance

- 25.3.1 Due to the potential for cumulative and in-combination effects to occur as a result of the construction, operation and maintenance and eventual decommissioning of parts of the Project, a CEA has been undertaken as part of the Environmental Impact Assessment (“EIA”) for the Project, in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (“EIA Regulations”) (Ref 25-1) and the assessment requirements of the National Policy Statement for Ports (“NPSfP”) (Ref 25-2).
- 25.3.2 The requirement for cumulative and in-combination impact assessments is stated in relevant legislation and policy documents and the CEA requirements and policies in the following documents have been reviewed:
- a. The EIA Regulations (Rf 25-1);
  - b. The NPSfP (Ref 25-2);
  - c. The UK Marine Policy Statement (MPS) (Ref 25-5); and
  - d. Policy ECO1 of the East Inshore and East Offshore Marine Plan (Ref 25-6)
- 25.3.3 Schedule 4 paragraph 5 of the EIA Regulations (Ref 25-1) 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’.*
- 25.3.4 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’.
- 25.3.5 Consideration has been given to the NPSfP (Ref 25-2) and relevant Marine Policy Statements (“MPS”) with regard to the need for cumulative assessment.
- 25.3.6 Paragraph 4.7.1 of the NPSfP (Ref 25-2) states that:
- ‘The Directive requires a description of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, short-, medium- and long-term, permanent and temporary, positive and negative effects of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects. When considering a proposal, the decision maker should ensure that likely significant effects at all stages of the project have been adequately assessed and should request further information where necessary.’*

25.3.7 Paragraph 4.7.3 of the NPSfP (Ref 25-2) goes on to state that when considering cumulative effects:

*'The ES should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence). The decision-maker 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. Any such information may assist the decision-maker in reaching decisions on proposals and on mitigation measures that may be required.'*

25.3.8 Paragraph 2.4.3 of the UK MPS (Ref 25-5) states that:

*'The marine plan authority will need to consider the potential cumulative impact of activities and, using best available techniques, whether for example:*

- a. The cumulative impact of activities, either by themselves over time or in conjunction with others, outweigh the benefits;*
- b. A series of low impact activities would have a significant cumulative impact which outweighs the benefit;*
- c. An activity may preclude the use of the same area/resource for another potentially beneficial activity.'*

25.3.9 Policy ECO1 of the East Inshore and East Offshore Marine Plan (Ref 25-6) states:

*'Cumulative impacts affecting the ecosystem of the East marine plans and adjacent areas (marine, terrestrial) should be addressed in decision-making and plan implementation.'*

## 25.4 Assessment Methodology

25.4.1 There is no standard method for assessing cumulative and in-combination effects, therefore the CEA has been undertaken on a qualitative basis using a combination of professional judgement, and the results of the individual assessments (presented in **Chapters 6 - 24 [TR030008/APP/6.2]**). In particular, the Planning Inspectorate's Advice Note Seventeen (Ref 25-4) has been used to inform the scope of the CEA and to assist with the identification of relevant developments to include.

### **Assessment of In-combination Effects**

25.4.2 The assessment of in-combination effects considers whether a single environmental receptor or resource would likely be affected by more than one source of effect from different aspects of the Project.

- 25.4.3 Potential interactions have been identified by reviewing the conclusions within the technical chapters (**Chapters 6 – 24 [TR030008/APP/6.2]**) in order to establish where individual impacts may combine and result in likely significant in-combination effects.
- 25.4.4 The study area for the assessment of in-combination effects is defined by the study areas presented in each of the environmental topics (**Chapters 6 – 24 [TR030008/APP/6.2]**). The sources of data used for the assessment of in-combination effects are the technical chapters presented within **Chapters 6 – 24 [TR030008/APP/6.2]**.
- 25.4.5 The assessment methodology for combined effects involved the identification of environmental resources and receptors where there is potential for more than one impact to be experienced and therefore potential for interactions between these. This enables the identification of the overall combined environmental effects of the Project. The environmental resource and receptor groups that have been identified and considered in relation to the potential for more than one type of impact to be experienced by a single receptor are presented within **Table 25-2**. This includes, but is not limited to, human receptors, ecological receptors, watercourses and users and operators of local businesses. Receptors that could be impacted by the Project as detailed in **Chapters 6 – 24 [TR030008/APP/6.2]** are indicated in the table by an 'X'. Information presented in **Table 25-2** has been compiled with input from those responsible for the production of the individual topic assessments. The table illustrates which environmental resources or receptors could be impacted by the effects reported in **Chapters 6 – 24 [TR030008/APP/6.2]**. Where any potential combination of effects has been identified, these have been assessed to determine whether in-combination effects are likely to occur.
- 25.4.6 **Table 25-2** identifies in blue where there is potential for an in-combination effect on a resource or receptor to arise from different environmental impacts. The table also identifies in grey where the assessment of environmental effects on a resource or receptor has been considered, and forms part of the main assessment, contained within **Chapters 6 - 24 [TR030008/APP/6.2]** (where residual effects are described for that resource or receptor type).

**Table 25-2: Shared receptor list (grey fill indicates where the assessment of environmental effects on a resource or receptor is considered inherently within the main assessment, blue fill indicates where there is potential for an in-combination effect on a resource or receptor to arise).**

Receptor	Technical Chapters																		Comment	
	Air Quality	Noise and Vibration	Terrestrial Ecology	Marine Ecology	Ornithology	Traffic and Transport	Marine Transport and Navigation	Landscape and Visual Impact	Historic Environment (Terrestrial)	Historic Environment (Marine)	Physical Processes	Marine Water and Sediment Quality	Water Quality, Coastal Protection, Flood Risk and Drainage	Climate Change	Materials and Waste	Ground Conditions and Land Quality	Major Accidents and Disasters	Socio-Economics		Human Health and Wellbeing
Residential/commercial Receptors	X	X				X		X					X				X	X	X	There is the potential for in-combination effects on residential receptors, this is assessed within <b>Table 25-6 to Table 25-8</b> .
Human Health	X	X				X		X					X			X	X		X	Human health as a receptor is assessed within <b>Chapter 24: Human Health and Wellbeing [TR030008/APP/6.2]</b> and is therefore not assessed further in this chapter.
Communities and local population	X	X				X		X									X	X	X	There is potential for in-combination effects on communities and the local population, this is assessed within <b>Table 25-6 to Table 25-8</b> .
Public Rights of Way/Cycle Routes/Roads and Railways	X	X				X		X									X	X		There is potential for in-combination effects on PRow/Cycle Route/Roads and Railways. This is assessed within <b>Table 25-6 to Table 25-8</b> .
Historic Buildings/Features and Archaeological Sites		X	X					X	X	X							X			There is the potential for in-combination effects on historic buildings/features and archaeological sites. This is assessed within <b>Table 25-6 to Table 25-8</b> .
Watercourses			X		X						X		X	X	X	X	X			There is potential for in-combination effects to impact watercourses as a result of the Project, these impacts are assessed within <b>Table 25-6 to Table 25-8</b> .
Water and Sediment Quality											X	X	X		X	X	X			There is potential for in-combination effects to impact Water and Sediment Quality as a result of the Project, these impacts are assessed within <b>Table 25-6 to Table 25-8</b> .
Benthic Habitats and Species		X		X							X	X					X			There is potential for in-combination effects to impact Benthic Habitats and Species as a result of the Project, these impacts are assessed within <b>Table 25-6 to Table 25-8</b> .
Fish	X	X		X							X	X					X			There is potential for in-combination effects to impact fish as a result of the Project, however following a review of the topic-specific assessments, no potential for in-combination effects has been identified.

Receptor	Technical Chapters																		Comment	
	Air Quality	Noise and Vibration	Terrestrial Ecology	Marine Ecology	Ornithology	Traffic and Transport	Marine Transport and Navigation	Landscape and Visual Impact	Historic Environment (Terrestrial)	Historic Environment (Marine)	Physical Processes	Marine Water and Sediment Quality	Water Quality, Coastal Protection, Flood Risk and Drainage	Climate Change	Materials and Waste	Ground Conditions and Land Quality	Major Accidents and Disasters	Socio-Economics		Human Health and Wellbeing
Marine Mammals	X	X		X							X	X					X			There is potential for in-combination effects to impact marine mammals as a result of the Project, these impacts are reported in <b>Chapter 9: Nature Conservation (Marine Ecology) [TR030008/APP/6.2]</b> and assessed within <b>Table 25-6 to Table 25-8</b> .
Coastal Waterbirds	X	X			X						X	X					X			There is potential for in-combination effects to impact coastal waterbirds as a result of the Project, these in-combination effects are assessed within <b>Table 25-6 to Table 25-8</b> .
Breeding Birds	X	X			X						X						X			Although there is potential for in-combination effects to impact breeding birds as a result of the Project, following a review of the technical <b>Chapters 6-24</b> it has been identified that there would be no in-combination effects on this receptor.
Bats, Otters, Voles	X	X	X										X				X			Although there is potential for in-combination effects to impact bats, otters and voles as a result of the Project, following a review of the technical <b>Chapters 6-24</b> it has been identified that there would be no in-combination effects on this receptor.
Woodland and Designated Sites	X	X	X	X	X			X	X								X			Although there is potential for in-combination effects to impact woodland and designated sites as a result of the Project, following a review of the technical <b>Chapters 6 - 24</b> it has been identified that there would be no in-combination effects on this receptor.
Flood Defences													X				X			An assessment of the potential effects on Flood defences as a result of the Project is considered within <b>Chapter 18: Water Use, Water Quality, Coastal Protection, Flood Risk and Drainage [TR030008/APP/6.2]</b> . There is no potential for in-combination effects.
Geology																X				An assessment of the potential effects on Geology as a result of the Project is considered within <b>Chapter 21: Ground Conditions and Land Quality [TR030008/APP/6.2]</b> . There is no potential for in-combination effects.



Receptor	Technical Chapters																		Comment	
	Air Quality	Noise and Vibration	Terrestrial Ecology	Marine Ecology	Ornithology	Traffic and Transport	Marine Transport and Navigation	Landscape and Visual Impact	Historic Environment (Terrestrial)	Historic Environment (Marine)	Physical Processes	Marine Water and Sediment Quality	Water Quality, Coastal Protection, Flood Risk and Drainage	Climate Change	Materials and Waste	Ground Conditions and Land Quality	Major Accidents and Disasters	Socio-Economics		Human Health and Wellbeing
Hydrogeology																X				An assessment of the potential effects on Hydrogeology as a result of the Project is considered solely within <b>Chapter 21: Ground Conditions and Land Quality [TR030008/APP/6.2]</b> .
Soils/Groundwater												X				X				An assessment of the potential effects on soils/groundwater as a result of the Project is considered solely within <b>Chapter 21: Ground Conditions and Land Quality [TR030008/APP/6.2]</b> .
Existing Development	X	X				X	X	X								X	X	X		There is potential for in-combination effects to impact Existing Development as a result of the Project. This has been assessed as part of the assessment for in-combination effects on 'residential receptors'. Where in-combination effects have been identified, they are assessed further within <b>Table 25-6 to Table 25-8</b> .
Power/Gas Supplies																	X			An assessment of the potential effects on Power/Gas supplies as a result of the Project is considered solely within <b>Chapter 22: Major Accidents and Disasters [TR030008/APP/6.2]</b> .
Global Climate														X						<b>Chapter 19: Climate Change [TR030008/APP/6.2]</b> includes an In-Combination Climate Change Impact ("ICCI") Assessment, which addresses the in-combination effects of a changing climate and the Project on receptors in the surrounding environment. This is therefore not considered further within this assessment.
Landfill, Safeguarded/Allocated Mineral and Waste Sites															X					The effect of the Project on landfill, safeguarded/allocated mineral and waste sites is considered solely within <b>Chapter 20: Materials and Waste [TR030008/APP/6.2]</b> and is therefore not assessed further in this Chapter.

- 25.4.7 The potential interactions between individual effects have been identified by reviewing the conclusions of the assessments within the topics presented in **Chapters 6 - 24 [TR030008/APP/6.2]**. Some of these chapters have already addressed interactions between different types of impact relating to specified environmental resources and receptors, and this is described within the technical chapters **[TR030008/APP/6.2]**:
- a. Where a resource or receptor is shown to only have a potential in-combination effect with the Major Accidents and Disasters, Human Health or Marine Transport and Navigation assessments, it has been considered in **Chapter 22: Major Accidents and Disasters, Chapter 24: Human Health and Wellbeing and Chapter 12: Marine Transport and Navigation [TR030008/APP/6.2]**, respectively, and has not been considered further in this assessment.
  - b. **Chapter 9: Nature Conservation (Marine Ecology) and Chapter 10: Ornithology [TR030008/APP/6.2]** include an assessment of the potential impacts of air quality, dust and noise impacts and therefore how they could (in combination with other ecological impacts, such as habitat loss) affect ecological receptors.
  - c. All effects on the designated features of the Humber Estuary European Marine Site (“EMS”) are assessed in **Chapter 9: Nature Conservation (Marine Ecology) and Chapter 10: Ornithology [TR030008/APP/6.2]** respectively.
  - d. The potential for significant effects resulting from changes in physical processes on other environmental features/receptors have been assessed in other topic-specific ES chapters, including **Chapter 9: Nature Conservation (Marine Ecology); Chapter 10: Ornithology; Chapter 15: Historic Environment (Marine); Chapter 17: Marine Water and Sediment Quality; and Chapter 18: Water Use, Water Quality, Coastal Protection, Flood Risk and Drainage [TR030008/APP/6.2]**.
  - e. **Chapter 18: Water Use, Water Quality, Coastal Protection and Flood Risk [TR030008/APP/6.2]** considers the potential impact of climate change upon flood risk.
  - f. **Chapter 19: Climate Change [TR030008/APP/6.2]** includes an ICCI Assessment, which addresses the in-combination effects of a changing climate and the Project on receptors in the surrounding environment. Potential ICCIs have been assessed by technical disciplines and collated within **Chapter 19: Climate Change [TR030008/APP/6.2]**.
- 25.4.8 The effects due to the interaction of different types of impact which form an inherent part of the technical assessments listed above are not included within this in-combination effects assessment. The in-combination effects assessment considers only those effects which could arise as a result of multiple impacts on single receptors which have not been identified elsewhere within this ES **[TR030008/APP/6.2]**.

- 25.4.9 As shown in **Table 25-2**, the following resources and receptors have been identified to have no potential to experience inter-relationship effects and are therefore not considered further within this assessment:
- Human Health (the assessment of in-combination effects on human health is considered inherently within **Chapter 24: Human Health and Wellbeing [TR030008/APP/6.2]**);
  - Flood defences;
  - Geology;
  - Hydrogeology;
  - Power/Gas supplies;
  - Global Climate; and
  - Landfill, Safeguarded/Allocated Mineral and Waste Sites
- 25.4.10 The remaining receptors/resources have been considered within the in-combination effects assessment (presented in **Section 25.5**). Within this in-combination effects assessment, receptors and/or resources experiencing effects of minor or greater magnitude only (as classified in the main topic assessments contained within **Chapters 6 - 24 [TR030008/APP/6.2]**) have been considered.

### **Assessment of Cumulative Effects**

- 25.4.11 The assessment of cumulative effects considers the effects on environmental resources and receptors that will likely occur from the changes arising from the Project in conjunction with those associated with other planned developments.
- 25.4.12 A combination of professional judgement and established guidance has been used to confirm the scope of the cumulative effects assessment and to aid the identification and (where necessary) mitigation of likely significant effects.
- 25.4.13 With regard to cumulative effects, the ability to quantify the extent to which the environmental effects of other schemes can interact with those associated with the Project depends upon the level of information available regarding such other schemes. Where environmental assessment information regarding other schemes is not available, is limited or is uncertain, the cumulative assessment has necessarily been qualitative in nature using professional opinion.
- 25.4.14 When considering cumulative effects, the mitigation measures set out in **Chapters 6 - 24 [TR030008/APP/6.2]** have been taken into account (i.e. only the residual effects of the Project have been considered within the assessment). Cumulative and in-combination effects will be assessed to be negligible, minor, moderate, large or very large. Moderate, large or very large effects are considered to be significant, using the methodologies outlined in each technical chapter (refer to **Chapters 6 - 24 [TR030008/APP/6.2]**).
- 25.4.15 In accordance with the approach contained within the Inspectorate's Advice Note Seventeen (Ref 25-4), the approach to the CEA follows a staged approach, as summarised in **Plate 25-1**.



**Plate 25-1 Staged Approach to the Cumulative Assessment**



**Stage 1: Establishing the long list of ‘other existing development and/or approved development’**

25.4.16 Stage 1 activities focused on establishing the Project’s Zone of Influence (“Zol”). The Zol used for this CEA was derived from the study areas associated with the environmental topics assessed within the EIA. **Table 25-3** presents the Zols that were identified within each environmental topic and used for the final cumulative assessment.

**Table 25-3: Summary of indicative Zones of Influence (Zols)**

Environmental Topic	Zols Applied to the Assessment of Cumulative Effects
Air Quality	<p><b>Construction:</b> Within 350m of the Site Boundary and/or 50m of a public road used by construction vehicles that is within 500m of a site access point, and where there are sensitive ecological receptors within 50m of the Site Boundary and/or 50m of a public road used by construction vehicles that is within 500m of a site access point.</p> <p><b>Operation:</b> The Zol for onsite point source emissions during operation which includes worst-case human health, nature conservation and vessel emission impacts within 10km of the emissions sources.</p> <p><b>Operational traffic-related Air Quality:</b> 200m from affected road links<sup>1</sup></p>

<sup>1</sup> Affected roads are roads which are predicted by the traffic model to exceed threshold increases in traffic flows—as set by the Guidelines for the Environmental Assessment of Road Traffic (IEMA, 2003)—and where receptors have been identified that would be affected by the increases. Full details can be found in paragraphs 6.5.3 and 6.5.4 of **Chapter 11: Traffic and Transport [TR030008/APP/6.2]**.

Environmental Topic	Zols Applied to the Assessment of Cumulative Effects
	<p>As the construction phase traffic data includes traffic associated with other developments, the air quality impacts assessment of traffic-related construction impacts reported in <b>Chapter 6: Air Quality [TR030008/APP/6.2]</b>, is inherently cumulative. There is therefore no separate assessment of cumulative air quality construction traffic-related impacts included in this ES.</p> <p>Refer to <b>Chapter 6: Air Quality [TR030008/APP/6.2]</b> for more information.</p>
Noise and Vibration	<p><b>Construction Noise and Vibration and Operational Noise:</b> 500m Zol from the Site Boundary.</p> <p>The construction phase traffic model includes traffic associated with other developments, the noise and vibration assessment of construction-related traffic noise reported within <b>Chapter 7: Noise and Vibration [TR030008/APP/6.2]</b> is inherently cumulative. Any effects due to operational vibration were scoped out of further assessment (refer to <b>Chapter 7: Noise and Vibration [TR030008/APP/6.2]</b>), therefore no assessment of cumulative operational vibration effects has been undertaken.</p> <p>Refer to <b>Chapter 7: Noise and Vibration [TR030008/APP/6.2]</b> for more information.</p>
Nature Conservation (Terrestrial)	<p><b>Construction and Operation:</b> 2km from the Site Boundary</p> <p>Refer to <b>Chapter 8: Nature Conservation (Terrestrial Ecology) [TR030008/APP/6.2]</b> for more information.</p>
Nature Conservation (Marine)	<p><b>Construction and Operation:</b> 10km Zol for International and National nature conservation designations.</p> <p><b>Construction and Operation:</b> The Zol for all other nature conservation and marine ecology effects is focused on the Port of Immingham and proposed disposal sites.</p> <p>Refer to <b>Chapter 8: Nature Conservation (Marine Ecology) [TR030008/APP/6.2]</b> for more information.</p>
Ornithology	<p><b>Construction and Operation:</b> 10km Zol for International and National nature conservation designations.</p> <p><b>Construction and Operation:</b> The Zol for all ornithology effects is focused on the Port of Immingham area. Refer to <b>Chapter 10: Ornithology [TR030008/APP/6.2]</b> for more information.</p>
Traffic and Transport	<p>The effects of construction traffic have been assessed to include any traffic that would be generated by committed 'other developments'. The assessment of construction traffic effects is therefore inherently cumulative. Further details are presented in <b>Chapter 11: Traffic and Transport [TR030008/APP/6.2]</b>.</p>
Marine Transport and Navigation	<p><b>Construction and Operation:</b> The study area has been defined as the area comprising the Humber Estuary bounded on the west by the Humber Bridge and on the east by the Humber Estuary Services Statutory Harbour Authority (SHA) limit for the Humber Estuary</p> <p>Refer to <b>Chapter 12: Marine Transport and Navigation [TR030008/APP/6.2]</b> for more information.</p>

Environmental Topic	Zols Applied to the Assessment of Cumulative Effects
Landscape and Visual Impact	<p><b>Construction and Operation:</b> 3km from the Site Boundary</p> <p>Refer to <b>Chapter 13: Landscape and Visual Impact [TR030008/APP/6.2]</b> for more information.</p>
Historic Environment (Terrestrial)	<p><b>Construction and Operation:</b> 2km from the Site Boundary</p> <p>Refer to <b>Chapter 14: Historic Environment (Terrestrial) [TR030008/APP/6.2]</b> for more information.</p>
Historic Environment (Marine)	<p><b>Construction and Operation:</b> 2km from the Site Boundary</p> <p>Refer to <b>Chapter 15: Historic Environment (Marine) [TR030008/APP/6.2]</b> for more information.</p>
Physical Processes	<p><b>Construction and Operation:</b> Zol defined as the Project site, adjacent Immingham Coastline, existing jetties, the area between the sunk dredged channel and Halton middle and the proposed spoil grounds.</p> <p>Refer to <b>Chapter 16: Physical Processes [TR030008/APP/6.2]</b> for more information.</p>
Marine Water and Sediment Quality	<p><b>Construction and Operation:</b> The Zol is considered to be the Site and the adjacent Immingham coastline, the existing jetties across the near-field and the central part of the Humber Estuary, generally between Sunk Chanel and Halton Middle. Within the far-field region, the study area includes the wider Humber Estuary from the mouth up to estuary of the Hull Bend.</p> <p>Refer to <b>Chapter 17: Marine Water and Sediment Quality [TR030008/APP/6.2]</b> for more information.</p>
Water Quality, Coastal Protection, Flood Risk and Drainage	<p><b>Construction and Operation:</b> 1km from the Site Boundary</p> <p>Refer to <b>Chapter 18: Water Use, Water Quality, Coastal Protection, Flood Risk and Drainage [TR030008/APP/6.2]</b> for more information.</p>
Climate Change	<p>N/A – due to the receptor for emissions of greenhouse gases being the entire global climate and therefore sources of emissions for assessment should not be constrained within a geographically defined location. Therefore, a detailed cumulative effects assessment has not been undertaken for Climate Change.</p> <p>Refer to <b>Chapter 19: Climate Change [TR030008/APP/6.2]</b> for more information.</p>
Materials and Waste	<p>N/A as the assessment is considered inherently cumulative – this is due to Waste Planning Authorities accounting for additional provision of waste as a result of local development within their Waste Management Plans. This therefore does not need to be, duplicated as part of the CEA process.</p> <p>Refer to <b>Chapter 20: Materials and Waste [TR030008/APP/6.2]</b> for more information.</p>
Ground Conditions and Land Quality	<p><b>Construction and Operation:</b> 500m from the Site Boundary for geology and soil resources and 1km from the Site Boundary for the assessment of effects to controlled waters.</p>

Environmental Topic	Zols Applied to the Assessment of Cumulative Effects
	Refer to <b>Chapter 21: Ground Conditions and Land Quality [TR030008/APP/6.2]</b> for more information.
Major Accidents and Disasters	<b>Construction and Operation:</b> 5km from the Site Boundary Refer to <b>Chapter 22: Major Accidents and Disasters [TR030008/APP/6.2]</b> for more information.
Socio-economics	<b>Construction and Operation:</b> 500m from the Site Boundary for Public Rights of Way, 500m from the Site boundary for residential receptors and businesses, 1.5km from the Site boundary for community facilities and 5km from the site boundary for the influx of new workers and impacts on schools/GPs in the area.  Refer to <b>Chapter 23: Socio-economics [TR030008/APP/6.2]</b> for more information.
Human Health and Wellbeing	The Human Health cumulative Zol is representative of the study area presented in <b>Chapter 24: Human Health and Wellbeing [TR030008/APP/6.2]</b> which is informed by other ES chapters and therefore varies depending on the receptor in question. The maximum study area relates to primary healthcare facilities which is set at 5km from the Site.  Refer to <b>Chapter 24: Human Health and Wellbeing [TR030008/APP/6.2]</b> for more information.

25.4.17 The Traffic and Transportation assessment (**Chapter 11: Traffic and Transport [TR030008/APP/6.2]**) assesses the impacts of construction traffic in the year of peak construction for the Project (2026), for the road links listed below:

- a. A180 East – between east of the A180/A1173 Junction;
- b. A1173 – between A1173/Kiln Lane and A1173/Kings Road;
- c. Queens Road - between A1173/Kings Road and Queens Road/Laporte Road;
- d. Kings Road - between A1173/Kings Road and Kings Road/Pelham Road;
- e. Manby Road - between A160/Manby Road and Kings Road/Pelham Road;
- f. A160 - between Manby Road/A160 and A160/A1077 roundabout;
- g. A160 - between A160/A1077 roundabout and A160/A180;
- h. A180 West - between A180/ A1173 and A180/ A160; and
- i. Laporte Road – between Queens Road and Kiln Lane/Hobson Way roundabout

25.4.18 The 2026 baseline traffic against which the effects of construction traffic have been assessed includes any traffic that would be generated by committed ‘other developments’. The assessment of construction traffic effects is therefore inherently cumulative. Further details are presented in **Chapter 11: Traffic and Transport of the ES [TR030008/APP/6.2]**.

- 25.4.19 A detailed cumulative effect assessment has not been undertaken for Climate Change due to the receptor for emissions of greenhouse gases being the entire global climate and therefore sources of emissions for assessment should not be constrained within a geographically defined location. A detailed cumulative effect assessment for climate change is also not reasonably practicable due to the difficulties in accessing reliable future emissions data for other developments. Further information on this is presented in the Climate Change cumulative effects section of **Appendix 25.C [TR030008/APP/6.4]**.
- 25.4.20 A detailed cumulative effects assessment has not been undertaken for Materials and Waste due to Waste Planning Authorities accounting for additional provision of waste as a result of local development within their Waste Management Plans. This therefore does not need to be, in effect, duplicated as part of the CEA process. Further information on this is presented in the Materials and Waste cumulative effects section of **Appendix 25.C [TR030008/APP/6.4]**.
- 25.4.21 A detailed cumulative impact assessment has not been undertaken for Nature Conservation (Terrestrial) ecology impacts, because the assessment has not identified any impacts on terrestrial ecology receptors that could occur beyond the Project boundary. There is therefore no potential for the impacts of the Project to combine with effects from any other plan or project identified within the list of cumulative projects.
- 25.4.22 The study area for the consideration of cumulative effects has been developed by taking into account the predicted Zol for each technical discipline as reported (**Chapters 6 to 24 [TR030008/APP/6.2]**). The largest Zol within the ES technical assessments is 10km for the assessment of air quality effects on nature conservation receptors and potential ecological impacts to internationally designated sites. As a result, the maximum Zol used for the cumulative assessment is 10km. The areas of search within this maximum Zol were then varied depending upon the type and scale of development as follows:
- 10km – NSIPs (based on potential air quality and marine ecological effects in accordance with standard guidance);
  - 5km – Major developments (as defined in section 2 of The Town and Country Planning (Development Management Procedure) (England) Order 2015) (Ref 25-7);
  - 5km – Marine licence activities/development;
  - 5km – Local plan allocations (adopted and emerging); and
  - 1km – Non-major development (other development which does not meet the criteria for major development (excludes very small scale development such as domestic extensions or garages, for which cumulative effects are unlikely to arise when considered alongside another development)

*Initial Long List of Developments*

- 25.4.23 An initial long list of other developments in the vicinity of the Project was identified following a search of the relevant planning databases (e.g. National

Infrastructure Planning Portal, NELC’s Planning Portal and the Marine Management Organisation’s license application portal).

- 25.4.24 This initial search focused on developments within the 10km search area which meet the criteria outlined above. This preliminary search, based on information available from local authority online planning portals, the National Infrastructure Planning Portal and the Marine Management Organisation’s license application portal, was subsequently extended as further work was undertaken during the EIA process, to capture other developments within the adopted areas of search, and to ensure the most up to date information was used to inform the EIA.
- 25.4.25 During the completion of the ES, the long list of other developments continued to be reviewed and updated with any additional developments or relevant information that emerged, up until an assessment cut-off date of the start of July 2023.
- 25.4.26 Each development within the long list was reviewed to determine its status at the time of undertaking the assessment (July 2023) and was assigned a final status and tier (from Tier 1 (most certain), to Tier 3, (least certain)), as described in **Table 25-4**, informed by the guidance and levels presented within Advice Note seventeen (Ref 25-4). The long list of planned developments and development allocations and their assigned tiers are presented in **Appendix 25.A [TR030008/APP/6.4]**.

**Table 25-4 Development Tier in Accordance with Advice Note Seventeen**

Tier	Degree of Certainty
Tier 1	<ul style="list-style-type: none"> <li>• Development currently under construction.</li> <li>• Approved applications which have not yet been implemented (covering the past five years and taking account of those that received planning consent over three years ago and are still valid but have not yet been completed).</li> <li>• Submitted applications not yet determined.</li> <li>• Refused applications, subject to appeal procedures not yet determined.</li> </ul>
Tier 2	<ul style="list-style-type: none"> <li>• Developments on the National Infrastructure Planning Programme of Projects (if a Scoping Report has been submitted).</li> </ul>
Tier 3	<ul style="list-style-type: none"> <li>• Developments on the National Infrastructure Planning Programme of Projects (if a Scoping Report has not been submitted).</li> <li>• Development identified in the relevant Development Plan (and emerging Development Plans).</li> <li>• Development identified in other plans and programmes which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.</li> </ul>

- 25.4.27 For planning applications that have submitted a variation application both the original application and the variation have been considered.



- 25.4.28 The potential for cumulative effects to arise as a result of the decommissioning phase of the Project have not been assessed within the CEA due to this being a minimum of 25 years into the future. When the Project is due to be decommissioned, the other developments are likely to be different from those assessed currently and therefore new or different cumulative effects could be present. Cumulative effects associated with decommissioning would, therefore, be considered at that point in time.
- 25.4.29 Consultation with NELC has taken place throughout the pre-application phase, such as through the Scoping Opinion (presented within **Appendix 1.B [TR030008/APP/6.4]**) and Statutory Consultation for the Project. The long list used for the CEA was sent to NELC for comment, and a response was provided on 27 June 2023. NELC recommended that Scheme ID 116 be included within the shortlist of cumulative schemes. Scheme ID 116 has therefore been included and assessed as part of this CEA.

**Stage 2: Establishing a shortlist of ‘other existing development and/or approved development’**

- 25.4.30 At Stage 2, any development of a nature or scale without the potential to result in cumulative impacts has been excluded with due consideration given to the likely Zol for each environmental topic.
- 25.4.31 The criteria used to determine whether to include or exclude other existing development and/or approved development from the shortlist, based on the guidance provided in the Planning Inspectorate’s Advice Note Seventeen (Ref 25-4), is detailed below:
- a. **Temporal scope:** Considering the relative construction, operation or decommissioning programmes of the ‘other existing development and/or approved development’ identified as part of Stage 1 and establishing whether there is an overlap or any potential for interaction with the Project.
  - b. **Scale and nature of development:** Considering whether the scale and nature of the ‘other existing development and/or approved development’ identified at Stage 1 are likely to interact with the Project.
  - c. **Source-pathway-receptor linkages:** Considering any other factors such as the nature and/or capacity of the receiving environment that would make a significant cumulative effect as a result of the Project and developments identified in Stage 1 more or less likely utilising a source-pathway-receptor approach.
- 25.4.32 Land allocations without supporting planning applications 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.
- 25.4.33 Developments that are already in existence i.e. those which are completed and operational, and those that are expected to be completed prior to the Project construction are considered to form part of the environmental baseline and future baseline conditions within which the Project will be implemented. The cumulation

of effects associated with such existing developments has therefore been accounted for through establishment of the current baseline within each technical assessment presented in **Chapters 6 – 24 [TR030008/APP/6.2]** and were therefore not considered for shortlisting.

- 25.4.34 Where individual technical disciplines have scoped out assessment of developments included on the shortlist for the purposes of their cumulative assessment, the reasoning for this is set out within the Stage 4 CEA presented in **Appendix 25.C [TR030008/APP/6.4]**.

### **Stage 3: Information Gathering**

- 25.4.35 Stage 3 has involved reviewing the available information relating to shortlisted developments in order to establish the details of their likely environmental effects.
- 25.4.36 Information relating to the shortlisted developments has been collected from the appropriate sources including the local planning authority websites, the Inspectorate's website or directly from the applicant/developers, and has included, but not been limited to:
- a. Proposed design and location information;
  - b. Proposed programme of demolition, construction, operation and/or decommissioning; and
  - c. Environmental assessments that set out baseline data and effects arising from 'other development'.

### **Stage 4: Assessment**

- 25.4.37 Those developments which are shortlisted in Stage 2 and have available information gathered at Stage 3 have been incorporated into the CEA. This has involved identifying where cumulative effects are likely to occur and assessing the significance of those effects on environmental receptors and resources, taking into account any defined mitigation measures.
- 25.4.38 The criteria for determining the significance of any potential cumulative effect has been based upon:
- a. The duration of effect i.e. whether it would be temporary or permanent;
  - b. The extent of effect i.e. the geographical area of an effect;
  - c. The type of effect i.e. whether additive or synergistic;
  - d. The frequency of the effect;
  - e. The 'value' and resilience of the receptor affected; and
  - f. The likely success of mitigation on the Project and the developments included within the CEA.
- 25.4.39 The assessment has been documented in a matrix in accordance with Matrix 2 in Appendix 2 of the Planning Inspectorate's Advice Note Seventeen (Ref 25-4).



## Impact Assessment Significance Criteria

25.4.40 The significance of potential in-combination and cumulative effects upon environmental receptors and resources has been determined using a combination of the criteria set out in **Table 25-5**, below and professional judgement, assisted by the views and opinions of the competent experts responsible for undertaking the topic assessments. In some cases, the assessment may deviate from the specific criteria outlined in **Table 25-5**. Where this is the case, professional judgement and competent expert advice will have been used to inform the outcome.

**Table 25-5 Classification of In-combination and Cumulative Effects**

Effect Classification	Typical Descriptors of Effect
Very large (typically adverse only)	Where the combined effects of the Proposed Development upon an individual or collection of environmental receptors would result in a very highly significant (beneficial or adverse, though typically adverse only) effect. Effects would be due to permanent impacts for receptors of very high value.
Large (adverse or beneficial)	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.: <ul style="list-style-type: none"> <li>• widespread/large scale for a receptor of high value<sup>2</sup>;</li> <li>• permanent for a receptor or receptors of high value;</li> <li>• localized for a receptor or receptors of very high value; or</li> <li>• temporary for a receptor or receptors of very high value</li> </ul>
Moderate (adverse or Beneficial)	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.: <ul style="list-style-type: none"> <li>• permanent for a receptor or receptors of medium value;</li> <li>• localized for a receptor or receptors of high value; or</li> <li>• temporary for a receptor or receptors of high value.</li> </ul>
Minor (adverse or beneficial)	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 be due to impacts which would be e.g.: <ul style="list-style-type: none"> <li>• permanent for receptors of low value;</li> <li>• localized for a receptor or receptors of medium value; or</li> <li>• temporary for a receptor or receptors of medium value.</li> </ul>

<sup>2</sup> Note that the term 'value' refers here to both intrinsic value and sensitivity.

Effect Classification	Typical Descriptors of Effect
Neutral/ Negligible (adverse or beneficial)	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.

- 25.4.41 In determining the possible significance of cumulative effects, the location and timing of the identified other developments and their associated impacts/ effects have been taken into account wherever possible.
- 25.4.42 The cumulative effects assessment only considers those receptors that would experience a residual effect that is more than negligible associated with the Project. For receptors where the Proposed Development’s residual effects are assessed to be neutral/ negligible, it is considered that such receptors could not experience cumulative effects.
- 25.4.43 In-combination and cumulative effects that are moderate, large or very large are considered significant effects in relation to the EIA Regulations.
- 25.4.44 In some cases, an effect on a receptor is judged to increase or intensify as a result of cumulative or in-combination effects between the Project and other developments but is not considered to be at a level different to the effect category reported in the technical environmental assessment as a result of the Project alone. Therefore, the presence of a significant effect in the core topic assessment would likely result in a significant cumulative or in-combination effect being reported even though the magnitude of impact is only marginally worse than the core assessment and in some cases at a level which would not change the level of effect assessed for the Project alone. Where this is the case, this has been clarified within the assessment contained in **Section 25.5** of this chapter for In-combination effects and in **Appendix 25.C [TR030008/APP/6.4]** for cumulative effects.
- 25.4.45 The approach taken to assess the cumulative effects as provided in **Appendix 25.C [TR030008/APP/6.4]** follows the approach as outlined above in this chapter, however in some instances certain topics have deviated to align with the methodology outlined within their relevant ES chapter due to topic specific guidance. In addition, certain topic cumulative assessments have assessed the interaction of all or a group of the shortlisted cumulative developments alongside the Project occurring at the same time. This is the case for Landscape and Visual and Socio-economics as it is considered to be an appropriate approach in determining the likelihood for significant effects to occur. However, where topics have not taken this approach, it is considered that the interaction between the Project and specific other development would not result in a materially different/ greater cumulative effect should the approach described above be adopted.

## 25.5 In-Combination Effects Assessment

- 25.5.1 Details of the in-combination effects assessment are discussed in the sections below. The assessment considers each environmental topic presented within this

ES (**Chapters 6 – 24 [TR030008/APP/6.2]**) and potential impacts upon a ‘Shared Receptor List’, presented within **Table 25-2**. The outcomes of the in-combination effects assessment are summarised in **Table 25-6** to **Table 25-8**.

- 25.5.2 Each of the technical assessments reported in the ES **[TR030008/APP/6.2]** has identified effects which may occur as result of the Project, ranging from negligible or minor (not significant) to moderate and large (significant). Multiple effects upon one or more common receptors could theoretically interact or combine, to result in an in-combination effect which is more/or less significant than the effects individually. As described in **Section 25.4**, only receptors and/or resources experiencing a minor effect and above are included within this in-combination effects assessment.
- 25.5.3 As described in **Section 25.4**, some of the technical assessments have already assessed effects that result from the combination or interaction of different types of impacts on individual receptors. Any effects arising from the interaction of impacts on individual receptors which have already been assessed within the technical assessments are not repeated here. This section considers only those in-combination effects which have not been identified elsewhere within the technical assessments.
- 25.5.4 When considering in-combination effects, the mitigation measures as set out in **Chapters 6 – 24 [TR030008/APP/6.2]** (including embedded mitigation measures built into the Project’s design and measures embedded in the **Outline Construction Environmental Management Plan (“Outline CEMP”)** **[TR030008/APP/6.5]**) must be taken into account. Therefore, only residual effects (post-mitigation) are considered.
- 25.5.5 Mitigation of any combined effects identified is best achieved through management and control measures employed to prevent or reduce the individual effects in the first instance, these measures are outlined in the ES **Chapters 6 – 24 [TR030008/APP/6.2]** thereby reducing the likelihood of the effects interacting and combining.
- 25.5.6 The following sections provide a qualitative assessment of the potential for in-combination effects to arise, following a review of ES **Chapters 6 - 24 [TR030008/APP/6.2]**.

**Table 25-6: Summary of in-combination effects (construction)**

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
<p><b>31 Queens Road and other residential properties along Queen's Road, eastern end</b></p> <p>Type of receptor: Residential Noise receptor: NSR1 Representative viewpoint: VP11 Traffic and transport receptor: Link 3</p>	High	<p><b>Dust:</b> Minor adverse <b>Noise</b> (Landside construction): Minor adverse <b>Noise (Construction Traffic):</b> Minor adverse <b>Vibration:</b> Minor adverse <b>Visual:</b> Major adverse <b>Traffic and transport:</b> Minor adverse <b>Floodplain inundation from tidal flooding, alteration in fluvial and overland flow paths, and potential increase in flood risk, as a result of storing construction materials in the floodplain:</b> negligible/minor adverse.</p>	Temporary	Local	<p>In-combination effects are assessed to occur on 31 Queen's Road and other residential properties along Queen's Road (eastern end) as a result of construction dust, noise (both landside construction and construction traffic), vibration, visual effects resulting from the potential views of construction activity, traffic and transport, and increases in flood risk.</p> <p>The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised, therefore the overall in-combination effect on these receptors is assessed to be <b>Large adverse (significant)</b>. This effect is no worse than the major adverse visual effect in isolation.</p>	As the residual in-combination effect is driven by the major adverse visual effect, the in-combination effect is no worse than the effect in isolation. This effect in isolation has been mitigated as far as appropriate. Therefore, no additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Large adverse (significant)</b>
<p><b>1 Queens Road and other residential properties along Queen's Road, western end</b></p> <p>Type of receptor: Residential Noise receptor: NSR2 Representative viewpoint: VP11 Traffic and transport receptor: Link 3</p>	High	<p><b>Dust:</b> Minor adverse <b>Noise</b> (Landside construction): Minor adverse <b>Noise (Construction Traffic):</b> Minor adverse <b>Vibration:</b> Minor adverse <b>Visual:</b> Major adverse <b>Traffic and transport:</b> Minor adverse <b>Floodplain inundation from tidal flooding, alteration in fluvial and overland flow paths, and potential increase in flood risk, as a result of storing construction materials in the floodplain:</b> negligible/minor adverse.</p>	Temporary	Local	<p>In-combination effects are assessed to occur on 1 Queen's Road and other residential properties along Queen's Road (western end) as a result of construction dust, noise (both landside construction and construction traffic), vibration, visual effects resulting from the potential views of construction activity, traffic and transport, and increases in flood risk.</p> <p>The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised, therefore the overall in-combination effect on these receptors is assessed to be <b>Large adverse (significant)</b>. This effect is no worse than the major adverse visual effect in isolation.</p>	As the residual in-combination effect is driven by the major adverse visual effect, the in-combination effect is no worse than the effect in isolation. This effect in isolation has been mitigated as far as appropriate. Therefore, no additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Large adverse (significant)</b>
<p><b>Residential properties on Chestnut Avenue, Waterworks Street and Spring Street (East of Immingham)</b></p> <p>Type of receptor: Residential Representative viewpoint: VP5 Noise Receptor: NSR3</p>	High	<p><b>Dust:</b> Minor adverse <b>Visual:</b> Minor adverse <b>Floodplain inundation from tidal flooding, alteration in fluvial and overland flow paths, and potential increase in flood risk, as a result of storing construction materials in the floodplain:</b> negligible/minor adverse.</p>	Temporary	Local	<p>In-combination effects are assessed to occur residential properties along Chestnut Avenue, Waterworks Street and Spring Street as a result of construction dust, visual effects resulting from the potential views of construction activity, increases in flood risk and landside construction noise.</p> <p>The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised, therefore the overall in-combination effect on</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the	<b>Minor adverse (not significant)</b>



Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
		<b>Noise</b> (Landside construction): Negligible/minor adverse			these receptors is assessed to be <b>minor adverse (not significant)</b> .	<b>Outline CEMP [TR030008/APP/6.5].</b>	
<b>Residential properties on Somerton Road, Worsley Road, Dunster Walk, Ings Lane, Oakham Walk and Kendal Road (East of Immingham)</b> Type of receptor: Residential Noise receptor: NSR4	High	<b>Dust:</b> minor adverse <b>Floodplain inundation from tidal flooding, alteration in fluvial and overland flow paths, and potential increase in flood risk, as a result of storing construction materials in the floodplain:</b> negligible/minor adverse. <b>Noise</b> (Landside construction): Negligible/minor adverse	Temporary	Local	In-combination effects are assessed to occur residential properties along Somerton Road, Worsley Road, Dunster Walk, Ings Lane, Oakham Walk and Kendal Road as a result of construction dust, landside construction noise and increases in flood risk.  The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised, therefore the overall in-combination effect on these receptors is assessed to be <b>minor adverse (not significant)</b> .	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5].</b>	<b>Minor adverse (not significant)</b>
<b>Commercial receptors along Queen's Road</b> Type of receptor: Commercial Representative Viewpoint: VP11	Low	<b>Visual:</b> Major adverse <b>Floodplain inundation from tidal flooding, alteration in fluvial and overland flow paths, and potential increase in flood risk, as a result of storing construction materials in the floodplain:</b> negligible/minor adverse.	Temporary	Local	In-combination effects are assessed to occur on commercial receptors along Queen's Road as a result of visual effects resulting from the potential views of construction activity and increases in flood risk.  The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised. The overall in-combination effect on these receptors is assessed to be <b>large adverse (significant)</b> . This effect is no worse than the major adverse visual effect in isolation.	As the residual in-combination effect is driven by the major adverse visual effect, the in-combination effect is no worse than the effect in isolation. This effect in isolation has been mitigated as far as appropriate. Therefore, no additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5].</b>	<b>Large adverse (significant)</b>
<b>PRoW (Bridleway 36 and the proposed England Coastal Path)</b> Representative Viewpoint: VP2 and VP3	Medium	<b>Visual:</b> Major adverse <b>Socio-economics:</b> Minor adverse	Temporary	Local	In-combination effects are assessed to occur on Bridleway 36 and the proposed England Coastal Path as a result of visual effects resulting from the potential views of construction activity, socio-economics and increases in flood risk.  The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>large adverse (significant)</b> . This effect is no worse than the major adverse visual effect in isolation.	As the residual in-combination effect is driven by the major adverse visual effect, the in-combination effect is no worse than the effect in isolation. This effect in isolation has been mitigated as far as appropriate. Therefore, no additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the	<b>Large adverse (significant)</b>

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
						<b>Outline CEMP [TR030008/APP/6.5].</b>	
<b>North Beck Drain</b> Type of receptor: watercourse	High	<b>Direct spillage:</b> Negligible/Minor adverse <b>Runoff contamination:</b> Negligible/Minor adverse <b>Alteration in fluvial and overland flow paths, and potential increase in flood risk as a result of storing construction materials in the floodplain:</b> Negligible/Minor adverse <b>Increased risk of blockage of drains as a result of increased material transported from run-off from Site:</b> Negligible/Minor adverse <b>Increase in risk of fluvial/surface water flooding due to changes in surface water runoff rates/volumes due to compaction of soil, increases in impermeable area, disruption/alteration of existing surface water flow paths, works/structures within watercourses:</b> Minor adverse <b>Surface water contamination:</b> Minor adverse (not significant)	Temporary	Local	In-combination effects are assessed to occur on the North Beck Drain as a result of the potential impacts and risks listed left. The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project, and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant).	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5].</b>	<b>Minor adverse (not significant)</b>
<b>Habrough Marsh Drain</b> Type of receptor: watercourse	High	<b>Direct spillage:</b> Negligible/Minor adverse <b>Runoff contamination:</b> Negligible/Minor adverse <b>Alteration in fluvial and overland flow paths, and potential increase in flood risk as a result of storing construction materials in the floodplain:</b> Negligible/Minor adverse <b>Increased risk of blockage of drains as a result of increased material transported from run-off from Site:</b> Negligible/Minor adverse <b>Increase in risk of fluvial/surface water flooding due to changes in surface water runoff rates/volumes due to compaction of soil, increases in impermeable area, disruption/alteration of existing surface water flow paths, works/structures within watercourses:</b> Minor adverse <b>Potential changes in tidal regime including wave erosion/accretion rates resulting in siltation of the Habrough Marsh Drain outfall, increasing fluvial flood risk:</b> Minor adverse <b>Surface water contamination:</b> Minor adverse	Temporary	Local	In-combination effects are assessed to occur on the Habrough Marsh as a result of the potential impacts and risks listed left. The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project, and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant).	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5].</b>	<b>Minor Adverse (not significant)</b>

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
<b>Local Drains (including Immingham Pump Drain)</b> Type of receptor: watercourse	Medium	<b>Direct spillage:</b> Negligible/Minor adverse <b>Runoff contamination:</b> Negligible/Minor adverse <b>Alteration in fluvial and overland flow paths, and potential increase in flood risk as a result of storing construction materials in the floodplain:</b> Negligible/Minor adverse <b>Increased risk of blockage of drains as a result of increased material transported from run-off from Site:</b> Negligible/Minor adverse <b>Increase in risk of fluvial/surface water flooding due to changes in surface water runoff rates/volumes due to compaction of soil, increases in impermeable area, disruption/alteration of existing surface water flow paths, works/structures within watercourses:</b> Minor adverse.	Temporary	Local	In-combination effects are assessed to occur on Local Drains as a result of the potential impacts and risks listed left. The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project, and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant).	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Minor Adverse (not significant)</b>
<b>Benthic habitats and species</b> Type of receptor: ecological	High	<b>Changes to benthic habitats and species as a result of seabed material during dredging:</b> insignificant/minor adverse <b>Introduction and spread of non-native species:</b> insignificant /minor adverse	Temporary	Local	<p>The capital dredge and ongoing maintenance dredging have the potential to result in combined effects on subtidal habitats and species with respect to habitat change. Following the cessation of capital dredging, a broadly similar benthic assemblage would be expected to occur as a result of recolonisation which would occur relatively quickly (with populations of infaunal species in the area known to fully re-establish in typically less than 1-2 years and for some species within a few months). Maintenance dredging is expected to be to be very limited (if required at all). As a result, any dredging that is required will only be undertaken very periodically (frequency will be dictated by operational requirements but is anticipated there could be several years or more between maintenance dredge campaigns if required at all). On this basis, given the expected frequency of dredging, a comparable macrofaunal community to pre dredge conditions would be expected to occur over much of the maintenance dredging area between maintenance dredging campaigns.</p> <p>Cumulative effects could also occur due to introduction and spread of non-native species during construction and operation. However, biosecurity control measures will be implemented during both phases to minimise the risk.</p> <p>Following the impact assessment methodology, the probability of occurrence and of cumulative impact pathways interacting is considered to be high but the magnitude of change will be small at worst with the application of the proposed measures. The exposure to change is, therefore, assessed as low. Given the overall low to moderate sensitivity of benthic habitats and species with the mitigation measures in place, and their moderate to high importance (depending on the nature conservation value of individual habitats and species), the potential cumulative and in-</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Negligible to minor adverse (not significant)</b>

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
					combination effects are assessed as negligible to minor adverse and not significant.		
<b>Fish</b> Type of receptor: ecological	High	<b>Effect of underwater noise disturbance and vibration during piling, capital dredging and dredge disposal:</b> Minor adverse	Temporary	Local	<p>Piling could potentially occur concurrently with capital dredging during construction which could result in potential cumulative underwater noise effects on fish. However, capital dredging is only expected to cause behavioural reactions in a relatively localised area in the vicinity of the dredger and is expected to be of a similar magnitude to noise from maintenance dredging vessels and ships operating in the local area. Furthermore, any cumulative/in-combination effects on fish will be temporary, only occurring for the duration of construction, and the baseline situation will fully return upon cessation of the works.</p> <p>Following the impact assessment methodology, the probability of occurrence of a cumulative effect is considered to be high but the magnitude of change will be small at worst with the application of the proposed piling mitigation measures. The exposure to change is, therefore, assessed as low. Given the overall low to moderate sensitivity of fish with the mitigation measures in place, and their low to high importance (depending on the nature conservation and/or commercial value of individual species), the potential cumulative and in-combination effects are assessed as insignificant to minor adverse and not significant.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Minor adverse (not significant)</b>
<b>Marine Mammals</b> Type of receptor: ecological	High	<b>Effect of underwater noise disturbance and vibration during piling, capital dredging and dredge disposal:</b> Minor adverse	Temporary	Local	<p>Piling could potentially occur concurrently with capital dredging during construction which could result in potential cumulative underwater noise effects on marine mammals. However, capital dredging is only expected to cause behavioural reactions in a relatively localised area in the vicinity of the dredger and is expected to be of a similar magnitude to noise from maintenance dredging vessels and ships operating in the local area. Furthermore, any cumulative/in-combination effects on marine mammals will be temporary, only occurring for the duration of construction, and the baseline situation will fully return upon cessation of the works.</p> <p>Following the impact assessment methodology, the probability of occurrence of a cumulative effect is considered to be high but the magnitude of change will be small at worst with the application of the proposed piling mitigation measures. The exposure to change is, therefore, assessed as low. Given the overall low to moderate sensitivity of marine mammals with the mitigation measures in place, and high importance (depending on the nature conservation and/or commercial value of individual species), the potential in-combination effects are assessed as insignificant to minor adverse and not significant.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Minor adverse (not significant)</b>
<b>Coastal waterbirds</b> Type of receptor: ecological	High	<b>Effect of airborne noise and visual disturbance to coastal waterbirds using intertidal:</b> minor adverse	Temporary	Local	There is the potential for in-combination effects related to potential noise and visual disturbance during construction and operation. However, the proposed construction mitigation measures are considered to be effective in minimising potential disturbance effects to coastal waterbirds during this phase. Operational	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including	<b>Minor adverse (not significant)</b>



Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
					disturbance responses are expected to be relatively limited. On this basis, the potential cumulative and in-combination effects are assessed as <b>minor</b> adverse and not significant.	implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	
<b>Long Strip</b> <b>(Mature deciduous woodland, heritage asset)</b> Type of receptor: ecological/heritage	Low	<b>Pipe-rack and jetty access road construction resulting in loss of/ damage to woodland habitat: moderate adverse</b> <b>Pipe-rack and jetty access road construction resulting in impacts to the setting of the historic asset: minor adverse</b>	Permanent	Local	In-combination effects are assessed to occur on the 'Long Strip' woodland as a result of the construction of the pipe-rack and jetty access road causing loss of the woodland habitat combined with the effect on the setting of the asset from a historic environment perspective. The duration of these effects will be permanent in nature, as the construction of the pipe-rack and jetty access road will cause permanent loss of the woodland. The impacts on this receptor of low value will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>moderate adverse</b> (significant). An Outline Woodland Compensation Strategy has been prepared and is appended at <b>Appendix 8.I [TR030008/APP/6.4]</b> . The Strategy sets out the approach to off-site planting of trees in the Immingham area to ensure that the tree loss from the Long Strip is appropriately compensated, as well as enhancement of existing woodland. Despite the woodland compensation proposed, the overall in-combination effect on this receptor remains as <b>moderate adverse</b> (significant).	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b>	<b>Moderate adverse (significant)</b>
<b>Marine Water and Sediment Quality</b>	NA	<b>Changes to dissolved oxygen concentrations as a result of increased SSC during piling, capital dredging and disposal activities: Minor adverse</b> <b>Changes to chemical water quality as a result of potential sediment-bound contaminants being released during piling, capital dredging and disposal activities: Minor adverse</b> <b>Redistribution of sediment-bound contaminants during piling, capital dredging and disposal activities: Minor adverse</b> <b>Changes to marine water quality from accidental spillages of leaks: Minor adverse</b>	Temporary	Local	Changes are predicted to be low in magnitude (when compared with existing natural (baseline) conditions, temporary (whilst construction activity is ongoing) and short-lived (only occurring during piling/dredging/disposal activities). Therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant).	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Minor adverse (not significant)</b>
<b>Physical Processes</b>	NA	<b>Increased SSC and potential sedimentation over the extent of the disturbance plume as a result of the construction of the new piers (piling) and capital dredging works: Low</b> <b>Increased SSC and potential sedimentation as a result of the deposit of capital dredge material at a licensed offshore disposal site: Low</b> <b>Changes in seabed bathymetry and composition as a result of deposition of</b>	Temporary	Local	Changes are predicted to be low in magnitude (when compared with existing natural (baseline) conditions, temporary (whilst construction activity is ongoing) and short-lived (only occurring during piling/dredging/disposal activities). In relation to marine cultural heritage receptors, increases in sedimentation and burial (by finer-grained sediments for example) are regarded as beneficial effects for archaeological preservation. Impacts derived from shipwash and vessel propulsion have not been identified as affecting seabed and sub-seabed receptors.	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Low/ negligible exposure to change (not significant)</b>

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination Effect
		<p><b>dredged/disposal material within the area of the respective plumes: Low</b></p> <p><b>Construction vessel activity – impacts on local hydrodynamics and sediment transport arising from ship wash and vessel propulsion: Low</b></p>					

**Table 25-7: Summary of In-combination effects (Operation)**

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual in-combination effect
<p><b>Residential properties on Chestnut Avenue, Waterworks Street and Spring Street (East of Immingham)</b></p> <p>Type of receptor: Residential Noise receptor: NSR3</p>	High	<p><b>Noise (On-site Operational):</b> Minor adverse</p> <p><b>Floodplain inundation from tidal flooding, alteration in tidal and fluvial overland flow paths, and potential increase in flood risk to the surrounding areas, as a result of land raising in the West and East Sites:</b> Minor adverse</p>	Permanent	Local	<p>In-combination effects are assessed to occur residential properties along Chestnut Avenue, Waterworks Street and Spring Street as a result of operational noise (on-site operational noise) and increase in flood risk.</p> <p>The duration of these effects will be permanent in nature, and the impacts will be localised, therefore the overall in-combination effect on these receptors is assessed to be <b>minor adverse (not-significant)</b>.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (Not significant)</b>
<p><b>Residential properties on Somerton Road, Worsley Road, Dunster Walk, Ings Lane, Oakham Walk and Kendal Road (East of Immingham)</b></p> <p>Type of receptor: Residential Noise receptor: NSR4</p>	High	<p><b>Noise (On-site operational):</b> Negligible /Minor adverse</p> <p><b>Noise (Project Traffic):</b> Negligible /Minor adverse</p> <p><b>Floodplain inundation from tidal flooding, alteration in tidal and fluvial overland flow paths, and potential increase in flood risk to the surrounding areas, as a result of land raising in the West and East Sites:</b> Minor adverse</p>	Permanent	Local	<p>In-combination effects are assessed to occur residential properties along Somerton Road, Worsley Road, Dunster Walk, Ings Lane, Oakham Walk and Kendal Road as a result of operational noise (both on-site operational noise and as a result of project traffic) and increase in flood risk.</p> <p>The duration of these effects will be permanent in nature, and the impacts will be localised, therefore the overall in-combination effect on these receptors is assessed to be <b>minor adverse (not-significant)</b>.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (Not significant)</b>
<p><b>Benthic habitats and species</b></p> <p>Type of receptor: Ecological</p>	High	<p><b>Changes to benthic habitats and species as a result of seabed material during maintenance dredging:</b> minor adverse /insignificant</p> <p><b>Non-native species transfer during vessel operations:</b> minor adverse /insignificant</p>	Permanent	Local	<p>Maintenance dredging (if required) has the potential to result in combined effects on subtidal habitats and species with respect to habitat change. Maintenance dredging is expected to be to be very limited (if required at all). As a result, any dredging that is required will only be undertaken very periodically (frequency will be dictated by operational requirements but is anticipated there could be several years or more between maintenance dredge campaigns if required at all). On this basis, given the expected frequency of dredging, a comparable macrofaunal community to pre dredge conditions would be expected to occur over much of the maintenance dredging area between maintenance dredging campaigns.</p> <p>Cumulative effects could also occur due to introduction and spread of non-native species during construction and operation.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (not significant)</b>

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual in-combination effect
					<p>However, biosecurity control measures will be implemented during both phases to minimise the risk.</p> <p>Following the impact assessment methodology, the probability of occurrence and of cumulative impact pathways interacting is considered to be high but the magnitude of change will be small at worst with the application of the proposed measures. The exposure to change is, therefore, assessed as low. Given the overall low to moderate sensitivity of benthic habitats and species with the mitigation measures in place, and their moderate to high importance (depending on the nature conservation value of individual habitats and species), the potential cumulative and in-combination effects are assessed as insignificant to minor adverse and not significant.</p>		
<p><b>Coastal waterbirds</b> Type of receptor: Ecological</p>	High	<p><b>Direct changes to foraging and roosting habitat as a result of the presence of infrastructure:</b> Minor adverse</p> <p><b>Airborne noise and visual disturbance to coastal waterbirds using intertidal habitats:</b> Minor adverse</p>	Permanent	Local	<p>There is the potential for in-combination effects related to potential noise and visual disturbance during operation. Operational disturbance responses are, however, expected to be relatively limited. On this basis, the potential cumulative and in-combination effects are assessed as <b>minor</b> adverse and not significant.</p> <p>There is also the potential for in-combination effects related to the changes in habitat as a result of the presence of infrastructure along with potential disturbance during operation. However, it is acknowledged that such effects are likely to be interrelated to some extent. Observations from the ornithology surveys in the area suggest that birds regularly feed in very close proximity to both the Eastern Jetty (approximately 1km from the Project) and the Immingham Oil Terminal approach jetty (approximately 500m from the Project) – which are both similar open piled structures - with species such as Redshank, Dunlin, Turnstone regularly recorded underneath jetties and Curlew, Shelduck and Black-tailed Godwit approaching them closely (&lt;10-20m). However, a review of bird distribution data for Sector C (for the period 2018/19 to 2021/22) found that the densities of coastal waterbirds (including Black-tailed Godwit, Shelduck, Dunlin and Redshank) were typically either higher or broadly comparable on the foreshore near to the existing IOT jetty (&lt;100-150m) compared to greater distances away (approximately 150m to 1km). There is therefore unlikely to be a change in the overall distribution of waterbirds more widely along the foreshore fronting Immingham in this area. Operational disturbance responses are expected to be relatively limited.</p> <p>Based on the information provided above, the probability of avoidance responses occurring due to both the presence of structures and operational disturbance stimuli is considered to be high. However, responses are expected to be limited to relatively a localised area around berthing infrastructure. Magnitude and consequently exposure to change is, therefore, likely to be small when considered cumulatively. Given the moderate sensitivity of some species and as importance is high because of the protection afforded to coastal waterbirds, the potential cumulative and in-</p>	<p>No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].</p>	<p><b>Minor adverse (not significant)</b></p>

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual in-combination effect
					combination effects are assessed as minor adverse and not significant.		
<b>Marine Water and Sediment Quality</b>	High	<p><b>Changes to dissolved oxygen concentrations as a result of increased SSC during piling, capital dredging and disposal activities:</b> Minor adverse</p> <p><b>Changes to chemical water quality as a result of potential sediment-bound contaminants being released during piling, capital dredging and disposal activities:</b> Minor adverse</p> <p><b>Redistribution of sediment-bound contaminants during piling, capital dredging and disposal activities:</b> Minor adverse</p> <p><b>Changes to marine water quality from accidental spillages of leaks:</b> Minor adverse</p>	Permanent	Local	Changes are predicted to be low in magnitude (when compared with existing natural (baseline) conditions and limited in extent to the Project footprint and a small area adjacent. Maintenance dredging is predicted to be very limited (if required at all), leading to a minor adverse (not significant) in-combination effect.	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (not significant)</b>
<b>Physical Processes</b>	NA	<p><b>Local changes to hydrodynamic regime (flow speed and direction) as a result of the piers (piling) and capital dredging:</b> Low</p> <p><b>Local changes to the wave regime, as a result of the piers (piling) and capital dredging:</b> Low</p> <p><b>Associated local changes to the sediment transport pathways, as a result of localised changes to the driving hydrodynamic (and wave) forcing:</b> Low</p> <p><b>Potential impact on existing features, including marine infrastructure, outfalls and estuary banks and channels:</b> Low</p>	Permanent	Local	Changes are predicted to be low in magnitude (when compared with existing natural (baseline) conditions and limited in extent to the Project footprint and a small area adjacent. Maintenance dredging is predicted to be very limited (if required at all), leading to a negligible impact.	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse/negligible exposure to change (not significant)</b>
<b>North Beck Drain</b>	High	<p><b>Potential operational pollution of surface watercourses from accidental spillages:</b> Negligible/minor adverse</p> <p><b>Potential run off of hazardous firefighting chemicals to surface water course:</b> Negligible/minor adverse</p> <p><b>Increase in risk of surface water flooding due to changes in surface water runoff rates/volumes due to increases in impermeable area, disruption/alteration of existing surface water flow paths:</b> Minor beneficial</p>	Permanent	Local	In-combination effects are assessed to occur on the North Beck Drain as a result of the potential operational impacts and risks listed left. The duration of these effects will be permanent in nature, and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant)	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (not significant)</b>



Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual in-combination effect
<b>Habrough Marsh Drain</b>	High	<p><b>Potential operational pollution of surface watercourses from accidental spillages:</b> Negligible/minor adverse</p> <p><b>Potential run off of hazardous firefighting chemicals to surface water course:</b> Negligible/minor adverse</p> <p><b>Increase in risk of surface water flooding due to changes in surface water runoff rates/volumes due to increases in impermeable area, disruption/alteration of existing surface water flow paths:</b> Minor beneficial</p> <p><b>Potential changes in tidal regime including wave erosion/accretion rates resulting in siltation of the Habrough Marsh Drain outfall, increasing fluvial flood risk:</b> Minor adverse</p>	Permanent	Local	In-combination effects are assessed to occur on the Habrough Marsh Drain as a result of the potential operational impacts and risks listed left. The duration of these effects will be permanent in nature, and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant).	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (not significant)</b>
<b>Local Drains</b>	High	<p><b>Potential operational pollution of surface watercourses from accidental spillages:</b> Negligible/minor adverse</p> <p><b>Potential run off of hazardous firefighting chemicals to surface water course:</b> Negligible/minor adverse</p> <p><b>Increase in risk of surface water flooding due to changes in surface water runoff rates/volumes due to increases in impermeable area, disruption/alteration of existing surface water flow paths:</b> Minor beneficial</p>	Permanent	Local	In-combination effects are assessed to occur on Local Drains as a result of the potential operational impacts and risks listed left. The duration of these effects will be permanent in nature, and the impacts will be localised, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant)	No additional mitigation measures are proposed beyond those committed to in the technical chapters [TR030008/APP/6.2].	<b>Minor adverse (not significant)</b>

**Table 25-8: Summary of in-combination effects (decommissioning)**

Receptor	Value	Potential In-combination impacts	Duration	Scale	Discussion	Mitigation	Residual In-combination effect
<p><b>Residential properties on Chestnut Avenue, Waterworks Street and Spring Street (East of Immingham)</b></p> <p>Type of receptor: Residential Noise receptor: NSR3 Representative viewpoint: VP5 Representative traffic and transport receptor: Link 5</p>	High	<p><b>Visual:</b> Minor adverse</p> <p><b>Floodplain inundation from tidal flooding, alteration in tidal and fluvial overland flow paths, and potential increase in flood risk to the surrounding areas, as a result of land raising in the West and East Sites:</b> Minor adverse</p>	Temporary	Local	<p>In-combination effects are assessed to occur residential properties along Chestnut Avenue, Waterworks Street and Spring Street as a result of construction dust, landside construction), visual effects resulting from the potential views of construction activity, traffic and transport, and increases in flood risk.</p> <p>The duration of these effects will be temporary in nature, occurring only during the decommissioning phase of the Project and the impacts will be localised, therefore the overall in-combination effect on these receptors is assessed to be <b>minor adverse (not significant)</b>.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline DEMP [TR030008/APP/6.6]</b> .	<b>Minor adverse (not significant)</b>
<p><b>North Beck Drain</b></p> <p>Type of receptor: watercourse</p>	High	<p><b>Direct spillage:</b> Negligible/Minor adverse</p> <p><b>Runoff contamination:</b> Negligible/Minor adverse</p> <p><b>Alteration in fluvial and overland flow paths, and potential increase in flood risk as a result of storing construction materials in the floodplain:</b> Negligible/Minor adverse</p> <p><b>Increased risk of blockage of drains as a result of increased material transported from run-off from Site:</b> Negligible/Minor adverse</p> <p><b>Increase in risk of fluvial/surface water flooding due to changes in surface water runoff rates/volumes due to compaction of soil, increases in impermeable area, disruption/alteration of existing surface water flow paths, works/structures within watercourses:</b> Minor adverse</p> <p><b>Surface water contamination:</b> Minor adverse</p>	Temporary	Local	<p>In-combination effects are assessed to occur on the North Beck Drain as a result of the potential decommissioning impacts and risks listed left. The duration of these effects will be temporary in nature, occurring only during the decommissioning phase of the Project, and the impacts will be localized, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse (not significant)</b>.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline DEMP [TR030008/APP/6.6]</b> .	<b>Minor adverse (not significant)</b>
<p><b>Habrough Marsh Drain</b></p> <p>Type of receptor: watercourse</p>	High	<p><b>Direct spillage:</b> Negligible/Minor adverse</p> <p><b>Runoff contamination:</b> Negligible/Minor adverse</p> <p><b>Alteration in fluvial and overland flow paths, and potential increase in flood risk as a result of storing construction materials in the floodplain:</b> Negligible/Minor adverse</p> <p><b>Increased risk of blockage of drains as a result of increased material transported from run-off from Site:</b> Negligible/Minor adverse</p> <p><b>Increase in risk of fluvial/surface water flooding due to changes in surface water runoff rates/volumes due to compaction of soil, increases in impermeable area, disruption/alteration of existing surface water flow paths, works/structures within watercourses:</b> Minor adverse</p>	Temporary	Local	<p>In-combination effects are assessed to occur on the Habrough Marsh Drain as a result of the potential decommissioning impacts and risks listed left.</p> <p>The duration of these effects will be temporary in nature, occurring only during the decommissioning phase of the Project, and the impacts will be localized, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse (not significant)</b>.</p>	No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline DEMP [TR030008/APP/6.6]</b> .	<b>Minor adverse (not significant)</b>



		<p><b>Potential changes in tidal regime including wave erosion/accretion rates resulting in siltation of the Habrough Marsh Drain outfall, increasing fluvial flood risk:</b> Minor adverse</p> <p><b>Surface water contamination:</b> Minor adverse</p>					
<p><b>Local Drains</b> Type of receptor: watercourse</p>	Medium	<p><b>Direct spillage:</b> Negligible/Minor adverse</p> <p><b>Runoff contamination:</b> Negligible/Minor adverse</p> <p><b>Alteration in fluvial and overland flow paths, and potential increase in flood risk as a result of storing construction materials in the floodplain:</b> Negligible/Minor adverse</p> <p><b>Increased risk of blockage of drains as a result of increased material transported from run-off from Site:</b> Negligible/Minor adverse</p> <p><b>Increase in risk of fluvial/surface water flooding due to changes in surface water runoff rates/volumes due to compaction of soil, increases in impermeable area, disruption/alteration of existing surface water flow paths, works/structures within watercourses:</b> Minor adverse</p>	Temporary	Local	<p>In-combination effects are assessed to occur on Local Drains as a result of the potential decommissioning impacts and risks listed left.</p> <p>The duration of these effects will be temporary in nature, occurring only during the decommissioning phase of the Project, and the impacts will be localized, therefore the overall in-combination effect on this receptor is assessed to be <b>minor adverse</b> (not significant).</p>	<p>No additional mitigation measures are proposed beyond those committed to in the technical chapters, including implementation of mitigation through the <b>Outline DEMP [TR030008/APP/6.6]</b>.</p>	<b>Minor adverse (not significant)</b>

## 25.6 Cumulative Effects Assessment (Stages 1 - 3)

25.6.1 Cumulative effects are generally unlikely to arise unless other development sites are in close proximity to the Project. However, the nature of potential effect and the actual distance at which two developments cumulatively impact a receptor depends on the nature of the impact (e.g. cumulative air quality effects could occur for the Project at a greater distance than say noise and vibration effects).

### **Stage 1: Establishing the Zol and Identifying a Long List of ‘Other Development’**

25.6.2 The initial screening exercise was repeated (Stage 1) since the Preliminary Environmental Information Report (“PEIR”) to identify any further potential major and other developments and plans within the study area and the various tiered developments within the study area as detailed above to create the long list for consideration based on Appendix 1 Matrix 1 of the Inspectorate’s Advice Note Seventeen (Ref 25-4). The long list of cumulative developments used for the CEA is presented in **Appendix 25.A [TR030008/APP/6.4]**.

### **Stage 2: Identify Shortlist of ‘Other Development’ for the CEA**

25.6.3 The long list has subsequently been screened based on the potential for interactions with the Project across all the technical disciplines considered within this ES (**Chapters 6 – 24 [TR030008/APP/6.2]**). The result of this screening exercise, and those developments that have been progressed to Stage 2, as well as the justification for shortlisting developments from the long list, is provided in **Appendix 25.B [TR030008/APP/6.4]**. The short-listed schemes are also shown on **Figure 25.1 [TR030008/APP/6.3]**.

25.6.4 A total of 29 developments on the shortlist presented in Appendix 25.B have been taken forward into Stage 3 and 4 of the CEA. These proposed developments are considered to have some potential for overlap with the Project in line with the criteria set out in **Paragraph 25.4.31** and warrant a full assessment of cumulative effects to be undertaken. Of these developments it is considered that the IERRT (ID 22: TR030007) has the greatest potential to lead to significant cumulative effects in association with the Project due to its nature, scale and location – this development is therefore discussed in further detail within the CEA, presented in **Appendix 25.C [TR030008/APP/6.4]**.

### **Stage 3: Information Gathering**

25.6.5 Following the initial information search on the shortlisted developments at Stage 2, a search for more detailed information within the public domain was carried out for the shortlisted developments. In line with Advice Note Seventeen (Ref 25-4), this included searching for and recording the following information where available:

- a. Development design and location information;
- b. Construction, operation and decommissioning information; and

- c. Any accompanying environmental assessment information detailing baseline data and effects arising from other development.

25.6.6 Information available for each of the proposed developments carried forward for the CEA is described below:

**Table 25-9 Available information for each shortlisted development**

ID	Development Description	Documents included within the application
ID 1: DM/1145/19/FUL (includes variation of conditions application DM/0603/22/FUL)	Construction and operation of an energy park comprising photovoltaic (PV) solar panels together with battery storage	<ul style="list-style-type: none"> <li>• Archaeological Report</li> <li>• Heritage Assessment</li> <li>• Ecology surveys</li> <li>• Flood Risk Assessment</li> <li>• Agricultural Land Quality Report</li> <li>• Construction Traffic Management Plan</li> <li>• Landscape and Visual Assessment</li> </ul>
ID 3: DM/0105/18/FUL (includes variation of conditions application DM/0545/20/NMA)	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 m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Flood Risk Assessment</li> <li>• Ecology reports</li> <li>• Environmental Statement (Transport, Noise and Vibration, Air Quality, Cultural Heritage, Ecology and Nature Conservation, Ground Conditions and Contamination, Water Quality, Flood Risk and Drainage, Landscape and Visual, Land Use and Agriculture, Socio-economics)</li> </ul>
ID 5: DM/0968/19/FUL	Variation of conditions 1 (Approved Plans) and 2 (Scheme of Landscaping) as granted in permission DC/101/98/IMM	<ul style="list-style-type: none"> <li>• Flood Risk Assessment</li> <li>• Surface Water Management Plan</li> <li>• Ecology reports</li> <li>• Landscape Visual Impact Assessment</li> <li>• Transport Statement</li> </ul>
ID 9: DM/0865/19/FUL	Erection of 20MW gas fuelled embedded energy generation compound – Site 4	<ul style="list-style-type: none"> <li>• Transport Statement</li> <li>• Landscape and Visual Impact Assessment</li> <li>• Flood Risk Assessment</li> <li>• Ecology survey reports</li> <li>• Ecological Impact Assessment</li> <li>• Environmental Statement (Ecology, Air Quality, Noise)</li> </ul>

ID	Development Description	Documents included within the application
ID 10: DM/0864/19/FUL	Erection of 20MW gas fuelled embedded energy generation compound - Site 3	<ul style="list-style-type: none"> <li>• Air quality assessment</li> <li>• Ecological impact assessment</li> <li>• Environmental Statement (Ecology, Air Quality, Noise)</li> </ul>
ID 13: DM/0628/18/FUL (includes variation of conditions DM/0274/20/FUL)	Partially demolish existing building and erect 20MWE waste to energy power generation facility, 65m stack and associated plant, machinery	<ul style="list-style-type: none"> <li>• Flood Risk Assessment</li> <li>• Environmental Statement (Air Quality and Climate Change, Ecology and Natural Heritage, Human Health, Landscape and Visual, Ground Conditions, Noise and Vibration, Transportation, Flood Risk, Drainage and Water, Major Accidents and Disasters, Socio-Economic, Cultural Heritage).</li> <li>• Transport Assessment</li> <li>• Noise Impact Assessment</li> </ul>
ID 16: DM/0862/19/FUL	Erection of 20MW gas fuelled embedded energy generation compound - Site 1	<ul style="list-style-type: none"> <li>• Environmental Statement (Air Quality, Noise)</li> <li>• Flood Risk Assessment</li> <li>• Ecological impact assessment</li> </ul>
ID 17: DM/0863/19/FUL	Erection of 20MW gas fuelled embedded energy generation compound - Site 2	<ul style="list-style-type: none"> <li>• Air quality assessment</li> <li>• Environmental Statement (Ecology, Air Quality, Noise)</li> <li>• Flood Risk Assessment</li> </ul>
ID 18: DM/0026/18/FUL	Erect an Energy Recovery Facility with an electricity export capacity of up to 49.5MW and associated infrastructure including a stack to 90m high	<ul style="list-style-type: none"> <li>• Environmental Statement (Landscape and Visual, Ecology and Nature Conservation, Noise and Vibration, Air Quality and Human Health, Soils, Geology and Hydrology, Surface Water and Flood Risk, Socio-economics, Archaeology &amp; Cultural Heritage)</li> <li>• Flood Risk Assessment</li> <li>• Transport Assessment</li> </ul>
ID 21: EN010107 DCO Application	South Humber Bank Energy Centre	<ul style="list-style-type: none"> <li>• Environmental Statement (Air Quality, Noise and Vibration, Traffic and Transport, Ecology, Landscape and Visual, Geology, Hydrology and Land Contamination, Cultural Heritage, Flood Risk, Hydrology and Water Resources, Socio-economics, Waste</li> </ul>

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

ID	Development Description	Documents included within the application
		Management, Human Health, Sustainability and Climate Change)
ID 22: TR030007 DCO Application	Immingham Eastern Ro-Ro Terminal (IERRT)	<ul style="list-style-type: none"> <li>Environmental Statement Volume 1-3 (Physical Processes, Water and Sediment, Nature Conservation and Marine Ecology, Commercial and recreational Navigation, Coastal Protection, Flood Defence, and Drainage, Ground Conditions, Including Land Quality, Air Quality, Airborne Noise and Vibration, Cultural Heritage and Marine Archaeology, Socio-economics, Traffic and Transport, Land Use Planning, Climate Change)</li> </ul>
ID 25: TR030001, TR030005 and TR030006 DCO Application	Able Marine Energy Park including Material Changes 1 and 2	<ul style="list-style-type: none"> <li>Environmental Statement (Geology, Hydrology and Ground Conditions, Hydrodynamic and sedimentary regime, Water Quality and Sediment Quality, Aquatic Ecology, Aquatic Ecology, Terrestrial Ecology and Birds, Commercial Fisheries, Drainage and Flood Risk, Commercial and Recreation Navigation, Traffic and Transport, Noise and Vibration, Air Quality, Marine and Terrestrial Archaeology, Light, Landscape and Visual, Socio-Economic, Aviation, Waste, Health)</li> </ul>
ID 27: EN010038, DCO Application	North Killingholme Power Project	<ul style="list-style-type: none"> <li>Environmental Statement (Air Quality, Ecology and Biodiversity, Historic Environment, Landscape and Visual Impact, Noise and Vibration, Socio-economics, Traffic and Transport, Water Quality and Resources, Geology and Land Contamination, Public Health)</li> </ul>
ID 28: EN070006 DCO Application	Humber Low Carbon Pipelines	<ul style="list-style-type: none"> <li>Scoping Report</li> </ul>
ID 29: EN070008 DCO Application	Viking CCS Pipeline	<ul style="list-style-type: none"> <li>Scoping Report</li> </ul>
ID 35: DM/0329/18/FUL	Erection of industrial building and adjoined two storey office/control room to create	<ul style="list-style-type: none"> <li>Environmental Statement (Noise, Traffic and Transport, Ornithology, Socio-Economic)</li> </ul>

ID	Development Description	Documents included within the application
	power plant (18MW Energy From Waste)	<ul style="list-style-type: none"> <li>• Flood Risk Assessment</li> <li>• Ecology Report</li> <li>• Archaeology and Cultural Heritage Report</li> </ul>
ID 37: DM/1070/18/FUL	Construction of an energy from waste facility of up to 49.9MWe gross capacity including emissions stack(s) and associated infrastructure	<ul style="list-style-type: none"> <li>• Environmental Statement (Air Quality, Noise and Vibration, Traffic and Transport, Ecology and Nature Conservation, Landscape and Visual, Geology, Hydrology and Land Contamination, Cultural Heritage, Flood Risk, Hydrology and Water Resources, Socio-economics, Waste Management)</li> </ul>
ID 40: DM/0378/15/OUT	Outline planning application with means of access to be considered for the construction of up to 250 residential dwellings	<ul style="list-style-type: none"> <li>• Ecology surveys</li> <li>• Flood Risk Assessment</li> <li>• Geophysical Report</li> <li>• Transport Assessment</li> <li>• Archaeological Evaluation Report</li> <li>• Arboriculture Impact Assessment</li> </ul>
ID 41: DM/0728/18/OUT	Outline planning application for the development of up to 525 residential dwellings together with an extra care facility	<ul style="list-style-type: none"> <li>• Flood Risk Assessment</li> <li>• Heritage Assessment</li> <li>• Noise Impact Assessment</li> <li>• Geo Environmental Assessment</li> <li>• Air Quality Assessment</li> <li>• Sustainability Statement</li> <li>• Archaeological Evaluation Report</li> <li>• Transport Assessment</li> <li>• Ecological Appraisal</li> </ul>
ID 42: DM/1175/17/FUL	Residential development for 145 dwellings	<ul style="list-style-type: none"> <li>• Transport Assessment</li> <li>• Flood Risk Assessment</li> <li>• Ecology Report</li> </ul>
ID 87: DM/0422/17/FUL	Construction of a carbon regeneration plant, hydrothermal plant and associated works.	<ul style="list-style-type: none"> <li>• Flood Risk Assessment</li> </ul>



ID	Development Description	Documents included within the application
ID 94: MLA/2020/00520	Humber International Terminal berth 2: adaptation for car carriers	<ul style="list-style-type: none"> <li>N/A</li> </ul>
ID 95: PA/2018/918	Planning permission to construct a new gas-fired power station with a gross electrical output of up to 49.9 megawatts. A further non-material amendment application has been made (PA/2021/1039)	<ul style="list-style-type: none"> <li>Environmental Statement (Air Quality, Noise and Vibration, Landscape and Visual, Ecology, Cultural Heritage, Ground Conditions and Hydrology, Surface Water, Flood Risk and Drainage)</li> <li>Transport Statement</li> <li>Ecology surveys</li> </ul>
ID 96: DM/0111/21/FUL	Installation of wash down facility to include new drainage, underground tanks, above ground tanks with 1 m high bunded wall enclosure, installation of 2.4 m high track and trace ANPR (automatic number plate recognition) system and siting of modular building for staff welfare at Immingham Lorry Park Pelham Road	<ul style="list-style-type: none"> <li>Flood Risk Assessment</li> </ul>
ID 102: DM/1071/22/FUL	Rock revetment repair and reinforcement along a 4.5km section of the Humber Estuary, works to repair, reinstate and enable access to the gravity outfalls at Middle Drain, Oldfleet Drain and Mawmbridge Drain, associated landscape improvements, installation of temporary construction compounds and associated infrastructure	<ul style="list-style-type: none"> <li>Environmental Statement (Biodiversity – terrestrial, freshwater and marine, Water and Sediment Quality)</li> <li>Ecology Surveys</li> </ul>
ID 113 and 114: DM/0304/23/SCO and PA/SCO/2023/1	EIA Scoping request for Immingham onshore wind including up to three wind turbines	<ul style="list-style-type: none"> <li>Scoping Report</li> </ul>
ID 115: MLA/2014/00431/4	Maintenance dredge disposal at Grimsby, Immingham and Sunk Dredged Channel	<ul style="list-style-type: none"> <li>N/A</li> </ul>

ID	Development Description	Documents included within the application
ID 116: DM/0664/19/FUL	Velocys Waste to Fuel Plant, off Moody Lane	<ul style="list-style-type: none"> <li>Environmental Statement (Traffic and transport, noise, geo-environmental, heritage, social economic, landscape and visual, flood risk and drainage and air quality)</li> </ul>
ID 117: PA/SCO/2022/7	Station Road South Killingholme, works on land to the east of Rosper Road, Killingholme	<ul style="list-style-type: none"> <li>Scoping Report</li> </ul>

#### Stage 4: Cumulative Effects Assessment

25.6.7 The results of the Stage 4 CEA undertaken for the developments scoped in for further assessment are reported within **Appendix 25.C [TR030008/APP/6.4]** due to the scale of the assessment. A summary and conclusion of residual cumulative effects as a result of the CEA is presented in **Section 25.8**.

#### 25.7 Limitations and difficulties

25.7.1 The assessment of potential in-combination effects uses information from the assessments contained within the relevant ES technical chapters (Chapters 6 - 24). This information is thus subject to the same limitations as associated with these individual assessments, as presented within their respective ES chapters **[TR030008/APP/6.2]**.

25.7.2 With regard to potential cumulative effects, the information included within this chapter is based upon information available at the time of the assessment regarding the environmental effects of the other planned or committed schemes that have been scoped into the assessment. Applicants for developments that are proposed after the DCO application for this Project is submitted will be responsible for considering the Project within the respective CEAs for their planned developments, as required.

#### 25.8 Residual Effects and Conclusions

##### In-combination effects assessment

25.8.1 The assessment of in-combination effects has considered the potential for the effects of minor significance and above, identified within each of the technical assessments reported within **Chapters 6 to 24 [TR030008/APP6.2]**, to interact and combine to affect common receptors.

## Construction

- 25.8.2 During the construction phase of the Project, the in-combination effects assessment has concluded that there would be a large adverse (significant) combined effect on '31 Queens Road and other residential properties along Queens Road, at the eastern end' and '1 Queens Road and other residential properties along Queens Road, at the western end' as a result of the combined effect of construction dust, noise (landside construction and construction traffic), vibration, visual effects, traffic and transport and increases in flood risk. The duration of these effects will be temporary in nature and the impacts will be localised. The in-combination effect reported on these residential receptors is no greater than the visual effect alone (major adverse), as reported in **Chapter 13: Landscape and Visual Impact [TR030008/APP/6.2]**. This effect in isolation has been mitigated as far as appropriate and therefore there are no additional mitigation measures proposed beyond those recommended in the technical chapters and **Outline CEMP [TR030008/APP/6.5]**.
- 25.8.3 The in-combination effects assessment also concluded that there would be a large adverse (significant) combined effect during construction on commercial receptors along Queens Road as a result of visual effects and increases in flood risk. The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised. The in-combination effect reported on these commercial receptors would be no greater than the visual effect alone (major adverse), as reported in **Chapter 13: Landscape and Visual Impact [TR030008/APP/6.2]**. This effect in isolation has been mitigated as far as appropriate and therefore there are no additional mitigation measures proposed beyond those recommended in the technical chapters, including implementation of mitigation through the **Outline CEMP [TR030008/APP/6.5]**.
- 25.8.4 During the construction phase there would also be a large adverse (significant) in-combination effect on Bridleway 36 and the proposed England Coastal Path as a result of visual and socio-economic combined effects. The duration of these effects will be temporary in nature, occurring only during the construction phase of the Project and the impacts will be localised. As the residual in-combination effect is driven by the major adverse visual effect (as detailed in **Table 25-6**), the in-combination effect is no worse than the effect in isolation. This effect in isolation has been mitigated as far as appropriate and therefore there are no additional mitigation measures proposed beyond those recommended in the technical chapters, including implementation of mitigation through the **Outline CEMP [TR030008/APP/6.5]**.
- 25.8.5 The in-combination effects assessment concluded that there would be a moderate adverse (significant) combined effect during operation on the 'Long Strip' woodland, as a result of the construction of the pipe-rack and jetty access road causing loss of the woodland habitat, combined with the effect on the setting of the asset from a historic environment perspective. The duration of these effects will be permanent in nature and will be localised. The in-combination effect reported on this receptor would be no greater than the ecological effect alone (moderate adverse), as reported in **Chapter 8: Nature**

**Conservation (Terrestrial Ecology) [TR03008/APP/6.2]**, therefore no additional mitigation measures are proposed beyond those committed to in the technical chapter, including implementation of mitigation through the **Outline CEMP [TR030008/APP/6.5]**.

*Operation*

- 25.8.6 No significant residual in-combination effects have been identified for the operational phase of the Project.

*Decommissioning*

- 25.8.7 No significant residual in-combination effects have been identified for the decommissioning phase of the Project.

*Cumulative effects assessment*

- 25.8.8 The assessment of cumulative effects has considered other developments within 10km of the Site boundary (identifying 117 developments for consideration at Stage 1 in the long list, and 29 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 Project has been assessed.
- 25.8.9 Through consideration of the available information for each of the identified developments, it has been concluded that during construction, there is the potential for:
- a. Significant, **large beneficial** cumulative socio-economic effects due to the construction of the Project together with ten other developments (ID 13, ID18, ID22, ID25, ID29, ID35, ID37, ID 94, ID102, ID115), due to the increase in employment opportunities during the construction phase. The magnitude of effect is no greater than that reported within **Chapter 23: Socio-economics [TR030008/APP/6.2]** for the Project alone, however the major beneficial effect will be intensified by the construction of the 'other developments';
  - b. Significant, **moderate adverse** long-term cumulative landscape effects on the Site and its immediate setting due to construction of the Project together with ID5 and ID115 due to the cumulative developments introducing construction activity on land immediately to the south of the West Site and within the Humber Estuary to the north east. Due to the high number of existing large-scale industrial complexes and road corridors that influence the Site and its immediate setting, it is assessed that the introduction of construction activity alongside the Project would result in a limited change to the Site and its immediate setting. It is therefore assessed that the cumulative impact would remain at medium, the same for the Project assessed in isolation;

- c. Significant, **large adverse** short-term cumulative visual effects on Viewpoint 2 as a result of the construction of the Project together with ID13, ID18 and ID115. The construction of the stacks associated with the cumulative developments would be visible in the distance, above the line of trees and dredging would be visible in the foreground. The presence of other characteristic, cumulative developments will very slightly intensify the built visible structures from this location. The addition of the construction activities associated with the Project will result in a high cumulative impact, although no greater than that assessed for the Project in isolation;
- d. Significant, **large adverse** short-term cumulative visual effects on Viewpoint 3 as a result of the construction of the Project together with ID21, ID37, ID115 and ID116 as construction of the stacks associated with the cumulative developments would be visible in the distance, above the line of trees and dredging would be visible in the foreground. The presence of other characteristic, cumulative developments will very slightly intensify the built visible structures from this location. These effects are no greater than those concluded for the Project on its own; and
- e. Significant, **large adverse** short-term cumulative visual effects on Viewpoint 11 as a result of the construction of the Project together with ID13, ID18 and ID116, due to the construction of the stacks associated with the other developments being visible in the middle and far distance from this point. The presence of other characteristic, cumulative developments will very slightly intensify the built visible structures from this location however this effect will be no greater than that assessed for the Project in isolation.

25.8.10 Through consideration of the available information for each of the identified developments, it has been concluded that during operation, there is the potential for:

- a. Significant, **moderate adverse** cumulative visual effects on Viewpoint 2 as a result of the visibility of characteristic built structures slightly intensifying due to the operation of the Project cumulatively with three other developments (ID13, ID18 and ID115). These effects are no greater than those concluded for the Project on its own;
- b. Significant, **moderate adverse** long-term cumulative visual effects on Viewpoint 3 as a result of the visibility of characteristic built structures slightly intensifying due to both the operation of the Project together with other developments (ID21, ID37, ID115 and ID116) due to the presence of the stacks associated with the identified cumulative developments slightly intensifying the visibility of characteristic built structures from this location. These effects are no greater than those concluded for the Project on its own; and
- c. Significant, **moderate beneficial** cumulative socio-economic effects due to the operation of the Project together with other developments (ID22, and ID116) due to the increase in employment opportunities during the operational phase. The magnitude of this effect is no greater than that reported within **Chapter 23: Socio-economics [TR030008/APP/6.2]** for the

Project alone, however the major beneficial effect will be intensified by the operation of the 'other developments'.

- 25.8.11 There would be no significant cumulative effects relating to air quality, noise and vibration, nature conservation (terrestrial), nature conservation (marine ecology), ornithology, marine transport and navigation, historic environment (terrestrial and marine), physical processes, marine water quality, water use, water quality, coastal protection, flood risk and drainage, ground conditions and land quality and major accidents and disasters.



**Table 25-10 Summary of significant In-combination effects**

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
Construction	In-combination effect from construction dust, noise (landside construction and construction traffic), vibration, visual effects, traffic and transport and increases in flood risk to 31 Queens Road and other residential properties along Queens Road, at the eastern end.	<b>Large adverse (significant)</b>	No additional mitigation measures are proposed beyond those recommended in the technical chapters and <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Large adverse (significant)</b> The in-combination effect reported on these residential receptors is no greater than the visual effect alone (major adverse), as reported in <b>Chapter 13: Landscape and Visual Impact [TR030008/APP/6.2]</b> .	Temporary and localised
Construction	In-combination effect from construction dust, noise (landside construction and construction traffic), vibration, visual effects, traffic and transport and increases in flood risk to 1 Queens Road and other residential properties along Queens	<b>Large adverse (significant)</b>	No additional mitigation measures are proposed beyond those recommended in the technical chapters and <b>Outline CEMP [TR030008/APP/6.5]</b> .	<b>Large adverse (significant)</b> The in-combination effect reported on these residential receptors is no greater than the visual effect alone (major adverse), as reported in <b>Chapter 13: Landscape and</b>	Temporary and localised

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
	Road, at the western end.			<b>Visual Impact [TR030008/APP/6.2].</b>	
Construction	In-combination effect from construction visual effects and increases in flood risk on commercial receptors along Queens Road.	Large adverse (significant)	No additional mitigation measures are proposed beyond those recommended in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5].</b>	Large adverse (significant)  The in-combination effect reported on these commercial receptors would be no greater than the visual effect alone (major adverse), as reported in <b>Chapter 13: Landscape and Visual Impact [TR030008/APP/6.2].</b>	Temporary and localised
Construction	In-combination effect as a result of visual and socio-economic combined effects on Bridleway 36 and the proposed England Coastal Path.	Large adverse (significant)	No additional mitigation measures are proposed beyond those recommended in the technical chapters, including implementation of mitigation through the <b>Outline CEMP [TR030008/APP/6.5].</b>	Large adverse (significant)	Temporary and localised

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
Construction	In-combination effect from the construction of the pipe-rack and jetty access road causing loss of the woodland habitat, combined with the effect on the setting of the asset from a historic environment perspective on the 'Long Strip' woodland.	<b>Moderate adverse (significant)</b>	No additional mitigation.	<b>Moderate adverse (significant)</b> The in-combination effect reported on this receptor would be no greater than the ecological effect alone (moderate adverse), as reported in <b>Chapter 8: Nature Conservation (Terrestrial Ecology)</b> [TR030008/APP/6.2].	Permanent and localised

**Table 25-11 Summary of significant Cumulative effects**

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
Construction	Cumulative socio-economic effect due to the construction of the Project together with ten other developments (ID 13, ID18, ID22, ID25, ID29, ID35, ID37, ID 94, ID102, ID115), due to the increase in employment opportunities during the construction phase.	<b>Large beneficial (Significant)</b>	No mitigation.	Large beneficial (Significant). The magnitude of effect is no greater than that reported within <b>Chapter 23: Socio-economics [TR030008/APP/6.2]</b> for the Project alone, however the major beneficial effect will be intensified by the construction of the 'other developments'.	Temporary
Construction	Cumulative landscape effects on the Site and its immediate setting due to construction of the Project together with ID5 and ID115 due to the cumulative developments introducing construction activity on land	<b>Moderate adverse (Significant)</b>	No mitigation.	<b>Moderate adverse (Significant)</b> Due to the high number of existing large-scale industrial complexes and road corridors that influence the Site and its immediate setting, it is assessed that the	Long term

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
	immediately to the south of the West site and within the Humber Estuary to the north east.			introduction of construction activity alongside the Project would result in a limited change to the Site and its immediate setting. It is therefore assessed that the cumulative impact would remain at medium, the same for the Project assessed in isolation.	
Construction	Cumulative visual effects on Viewpoint 2 as a result of the construction of the Project together with ID13, ID18 and ID115. The construction of the stacks associated with the cumulative developments would be visible in the distance, above the line of trees	Large adverse (Significant)	No mitigation.	Large adverse (Significant)  The presence of other characteristic, cumulative developments will very slightly intensify the built visible structures from this location. The addition of the construction activities associated with the Project will	Short term

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
	and dredging would be visible in the foreground.			result in a high cumulative impact, although no greater than that assessed for the Project in isolation.	
Construction	Cumulative visual effects on Viewpoint 3 as a result of the construction of the Project together with ID21, ID37, ID115 and ID116 as construction of the stacks associated with the cumulative developments would be visible in the distance, above the line of trees and dredging would be visible in the foreground.	Large adverse (Significant)	No mitigation	Large adverse (Significant)  The presence of other characteristic, cumulative developments will very slightly intensify the built visible structures from this location. These effects are no greater than those concluded for the Project on its own.	Short term
Construction	Cumulative visual effects on Viewpoint 11 as a result of the construction of the Project together with	Large adverse (Significant)	No mitigation	Large adverse (Significant)  The presence of other characteristic, cumulative	Short term



Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
	ID13, ID18 and ID116, due to the construction of the stacks associated with the other developments being visible in the middle and far distance from this point.			developments will very slightly intensify the built visible structures from this location however this impact will be no higher than that assessed for the Project in isolation.	
Operation	Cumulative visual effects will occur on Viewpoint 2 as a result of the visibility of characteristic built structures slightly intensifying due to the operation of the Project cumulatively with three other developments (ID13, ID18 and ID115).	<b>Moderate adverse (significant)</b>	No mitigation	<b>Moderate adverse (significant)</b>  These effects are no greater than those concluded for the Project on its own.	Long term
Operation	Cumulative visual effects on Viewpoint 3 as a result of the visibility of characteristic built structures slightly intensifying due to both	<b>Moderate adverse (significant)</b>	No mitigation	<b>Moderate adverse (significant)</b>  These effects are no greater than those	Long term

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
	the operation of the Project together with other developments (ID21, ID37, ID115 and ID116) due to the presence of the stacks associated with the identified cumulative developments slightly intensifying the visibility of characteristic built structures from this location.			concluded for the Project on its own.	
Operation	Cumulative socio-economic effects due to the operation of the Project together with other developments (ID22, and ID116) due to the increase in employment opportunities during the operational phase.	<b>Moderate beneficial (significant)</b>	No mitigation	<b>Moderate beneficial (significant)</b> The magnitude of this effect is no greater than that reported within <b>Chapter 23: Socio-economics [TR030008/APP/6.2]</b> for the Project alone, however the major beneficial effect will be intensified by the	Long term

Immingham Green Energy Terminal  
Environmental Statement Chapter 25: Cumulative and In-Combination Effects

Development Stage	Environmental effect (following development design and impact avoidance measures)	Classification of effect prior to mitigation	Mitigation/ enhancement (if identified)	Classification of residual effect after mitigation	Nature of effect(s) (Long term (Lt)/ Medium term (Mt)/ Short term (St) and Permeant (P)/ Temporary (T))
				operation of the 'other developments'.	

## 25.9 References

- Ref 25-1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
- Ref 25-2 Department for Transport (2012). The National Planning Policy Statement for Ports.
- Ref 25-3 European Commission (2014). Directive 2014/ 52/ EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/ 92/ EU on the assessment of the effects of certain public and private projects on the environment.
- Ref 25-4 The Planning Inspectorate (2019). Advice Note Seventeen. Cumulative Effects Assessment (Version 2).
- Ref 25-5 UK Marine Policy Statement (2011).
- Ref 25-6 Marine Management Organisation (2016). East Inshore and East Offshore Marine Plans.
- Ref 25-7 The Town and Country Planning (Development Management Procedure) (England) Order 2015.