

22 Cumulative and In-Combination Effects

- 22.1 This chapter of the PEIR sets out the approach to, and initial stages of, the preliminary assessment of the cumulative and in-combination effects of the OMSSD project.
- 22.2 For the purposes of the assessment, cumulative effects are taken to be a reference to occasions where another project could have an impact via the same pathway as the OMSSD project and could, therefore, result in an overall effect that is of greater or lesser significance than the effect of the OMSSD project in isolation. These effects are also referred to as 'inter-project effects' by EIA practitioners.
- 22.3 The cumulative effects assessment (CEA) focuses on the identification and assessment of other proposed development which could give rise to significant effects cumulatively with the construction and operation of the OMSSD project.
- 22.4 The CEA does not consider other development already existing as, where relevant, this development forms part of the baseline environment considered in the topic assessment chapters. Furthermore, the CEA does not include consideration of GHG and climate change, as the assessment of GHG emissions which contribute to climate change is intrinsically cumulative, and is, therefore, covered under the Greenhouse Gases and Climate Change preliminary assessment reported separately within this PEIR (see Chapter 13).
- 22.5 The methodology for the assessment of cumulative effects has been developed with regard to the guidance contained within the Planning Inspectorate's (PINS) Advice Note 17, 'Cumulative effects assessment relevant to nationally significant infrastructure projects' (AN17)⁶⁵².
- 22.6 The ES that will be produced as part of the OMSSD application will set out the full cumulative effects assessment and outline any significant cumulative effects associated with the OMSSD project.
- 22.7 In-combination effects are taken to be a reference to occasions where different effects of the OMSSD project may combine to interact with each other to affect the same receptor. In-combination effects are also referred to as 'intra-project effects' by EIA practitioners.
- 22.8 The ES that will be produced as part of the OMSSD application will outline the in-combination effects assessment, bringing together the conclusions regarding the predicted residual effects of the OMSSD project from each of the topic chapters of the OMSSD ES as appropriate, in order to identify any significant in-combination effects of the OMSSD project.

⁶⁵² Planning Inspectorate (2019) Advice Note 17: Cumulative effects assessment relevant to nationally significant infrastructure projects.

Implications of Legislation, Policy and Guidance

22.9 Article 3(1)(e) of EU Directive 2014/52/EU (the EIA Directive)⁶⁵³ highlights that an EIA shall identify, describe and assess in an appropriate manner, *“the interaction between the factors referred to in points (a) to (d)”*, namely:

(a) *“population and human health;*

(b) *biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*

(c) *land, soil, water, air and climate;*

(d) *material assets, cultural heritage and the landscape; ...”*

22.10 Article 5(1)(f) of the Directive further indicates that the report of the environmental assessment shall include any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

22.11 Annex IV(5)(e) states that a description should be included of the likely significant effects resulting from:

“the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular importance likely to be affected or the use of natural resources;”

22.12 Regulation 14(2)(f) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017⁶⁵⁴ (as amended) – reflecting the requirements of the EIA Directive – indicates that, amongst other things, an environmental statement should include:

“any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.”

22.13 Schedule 4(5)(e) indicates that an ES should include the information detailed in Annex IV(5)(e) of the EIA Directive.

Policy

22.14 The National Policy Statement for Ports (2012) (NPSfP)⁶⁵⁵ highlights that an Environmental Statement for any relevant NSIP proposal will need to meet the requirements of relevant EIA legislation. In respect of considering cumulative effects, the NPSfP makes clear that:

⁶⁵³ EIA Directive (2014/52/EU)

⁶⁵⁴ Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

⁶⁵⁵ Department for Transport (2012) National Policy Statement for Ports

“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)” (paragraph 4.7.3).

22.15 The NPSfP goes on to make clear that the Secretary of State should consider how:

“the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place.” (paragraph 4.7.4.)

22.16 The Overarching National Policy Statement for Energy (EN-1) (2011)⁶⁵⁶ indicates that, in considering any proposed development and in particular when weighing its adverse impacts against its benefits, the Secretary of State should take into account:

- *“its potential benefits including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and*
- *its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts”* (paragraph 4.1.3).

22.17 With regard to what should be included in an ES, EN-1 states 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).” (paragraph 4.2.5)

Guidance

22.18 In its Advice Note 17, PINS highlights that there is a range of public sector and industry-led guidance available on cumulative effects assessment and no single agreed industry standard method. Consequently, it is recognised that the approach taken to such assessments within applications for development consent varies.

22.19 In respect of cumulative effects assessment, AN17 sets out a *“staged process that applicants may wish to adopt in CEA (Cumulative Effects Assessment) for NSIPs.”* A staged approach along the lines set out in AN17 is proposed in respect of the OMSSD project, as explained further under the ‘Assessment Methodology’ heading in this chapter.

⁶⁵⁶ Department for Energy and Climate Change (2011), Overarching National Policy Statement for Energy (EN-1),

22.20 PINS Advice Notes do not give any specific guidance on in-combination effects assessment. However, Advice Note 9 (Rochdale Envelope)⁶⁵⁷ explains that the interactions between different aspect / topic assessments should be taken into account.

Consultation

22.21 Table 22.1 summarises responses to the Scoping Report from the Planning Inspectorate and consultation bodies, along with further comments received from engagement with consultees.

Table 22.1: Summary of consultation to date

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
Planning Inspectorate	May 2020	At this stage, the Inspectorate cannot agree to scope out the development listed in Table 21.1 from the cumulative assessment in the ES, as there is no explanation in the Scoping Report to support the justification for scoping them out, and there is no evidence of consultation and/or agreement with statutory bodies. The ES should include an assessment of the cumulative impacts with this development where significant effects are likely to occur. (Scoping Opinion Ref/ID: 4.16.1)	The methodology for Stages 1 and 2 of the CEA have been refined, following the Planning Inspectorate’s comments, to provide further justification for scoping projects in and out of the CEA. Oikos is seeking to agree the CEA methodology and the identified short list set out in this chapter with relevant consultees – including through the production of this PEIR document and the statutory consultation process.
		<p>The Scoping Report states that there are no NSIPs registered on the PINS website within the study area at the time of writing. At this time, the Inspectorate cannot agree to scope out other NSIPs from the cumulative assessment, as it considers that the study area is not robust.</p> <p>The ES should define a study area based on the ZOI and consider which NSIPs in the study area have potential to cause cumulative effects with the Proposed Development. Evidence and consultation should determine whether or</p>	<p>The areas of search (or study areas) for the CEA have been defined taking into account the Zones of Influence (ZOI) for each relevant environmental topic considered within the PEIR.</p> <p>The ZOI are set out in Table 22.2 of this chapter. The areas of search for different types of development (including NSIPs) are set out in Table 22.3 of this chapter.</p> <p>Following the Planning Inspectorate’s comments, and taking into account the ZOI, the area of search for NSIPs has been expanded from 5km to</p>

⁶⁵⁷ Planning Inspectorate (2018) Advice Note 9: Rochdale Envelope

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
		<p>not identified NSIPs should be scoped in or out of the assessment. (Scoping Opinion Ref/ID: 4.16.2)</p>	<p>10km. This is considered to be a suitably wide area to ensure that other NSIP developments which could result in potentially significant cumulative effects with the OMSSD project are identified.</p> <p>Oikos is seeking to agree the CEA methodology and the identified short list set out in this chapter of the PEIR with relevant consultees – including through the production of this PEIR document and the statutory consultation process.</p>
		<p>The anticipated replacement of 3km of revetment to be delivered by the EA, Jacobs and other suppliers in 2022/23 – 2024/25 and the proposed Roscommon Way extension have potential to cause cumulative impacts in aspects such as traffic and transport and should be included in the assessment. (Scoping Opinion Ref/ID: 4.16.3)</p>	<p>These projects have been included in the short list presented in Appendix 22.1.</p>
		<p>AN17 on which the Scoping Chapter is based offers three tiers of development to be considered in the cumulative assessment, yet the Scoping Report only considers Tiers 1 and 2. The ES should explain and justify any deviation in the approach if AN17 is used to inform the assessment. (Scoping Opinion Ref/ID: 4.16.4)</p>	<p>The CEA methodology set out within this chapter of the PEIR follows the approach in AN17 in respect of the different tiers of development.</p> <p>Table 22.3 of this chapter outlines the different types of other development considered within the CEA, including the status of development considered, and the corresponding tier within AN17 within which the development falls.</p>
		<p>The Applicant should make effort to agree the approach to the cumulative and in-combination effects assessment with relevant consultation bodies, including the short list of other developments to be included in the assessment. (Scoping Opinion Ref/ID: 4.16.5)</p>	<p>Oikos is seeking to agree the methodology for the CEA and in-combination effects assessment set out in this PEIR chapter with relevant consultees through statutory consultation. Agreement is also sought on the short list of other proposed development that has been identified and is presented in Appendix 22.1, which will be taken forward to the CEA in the ES.</p>

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
		<p>The ES should clearly describe the criteria used to determine which projects should be taken forward into stage 2 of the assessment and why other development is excluded. Effort should be made to agree the approach with relevant consultation bodies. (Scoping Opinion Ref/ID: 4.16.6)</p>	<p>The criteria used to determine which projects should be taken forward into Stage 2 of the assessment is described under paragraph 22.43 of this chapter. Other development which does not meet these criteria are not considered likely to give rise to significant cumulative effects with the OMSSD development and have therefore been scoped out. Oikos is seeking to agree the CEA methodology, including these criteria, with relevant statutory consultees.</p>
		<p>The Scoping Report does not define the temporal scope for the assessment. For clarity, in the ES assessment, the temporal scope used to establish a short list of developments should include the construction and operation of other developments that are both temporally consecutive and overlap with that of the Proposed Development. Additionally, other factors should be considered such as the capacity of the receiving environment, when establishing a short list of other developments to take forward in the assessment in the ES. (Scoping Opinion Ref/ID: 4.16.7)</p>	<p>The temporal scope used to establish the short list is defined in paragraph 22.42 of this chapter. Other development which meets the criteria set out under paragraph 22.43— including Criterion 1 relating to temporal scope—are included in the short list. This is considered to be a robust and proportionate approach to establishing the short list, taking into account the nature and scale of the OMSSD project.</p>
		<p>The methodology for the in-combination assessment in the Scoping Report remains vague with no explanation of how the aspect Chapters will be reviewed to take forward potential impacts for assessment, how the potential impacts and receptors were decided in Table 21.2, their ability to interact or how the level of significance will be determined.</p> <p>The ES should clearly set out the methodology for assessing in-combination, or interrelated effects between</p>	<p>The methodology for the in-combination assessment has been clarified following this comment from the Planning Inspectorate. The amended methodology is set out in this chapter of the PEIR.</p> <p>Oikos is seeking to agree the methodology for the in-combination effects assessment outlined in this chapter with relevant consultees.</p>

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
		aspects, based on relevant guidance or professional judgement. (Scoping Opinion Ref/ID: 4.16.8)	
Port of London Authority	May 2020	<p>Overall, the scoping report gives the impression that both jetties will work to full design capacity, so the jetty one berth and approach will continue to require substantial maintenance and in the process some accretion does occur for a short time (weeks-months) in jetty two. To note the arrival and departure of fully laden 16m vessels to jetty two is not just dependent on the depth on the berth but also on the extensive approaches which extend outside of the PLA's navigational jurisdiction. The proposed scheme therefore becomes reliant on the deep water channel to the Sunk being monitored and maintained so that the socio-economic benefits that will be presented can be realised. The potential reliance of this scheme on others, such as London Gateway, must be considered as part of this proposal within this chapter.</p>	<p>The CEA will assess other proposed development which could give rise to significant effects cumulatively with the OMSSD project. This will include consideration of commercial and recreational navigation and socio-economic significant cumulative effects which could arise during the construction and operation of the OMSSD project.</p> <p>Other existing operational developments form part of the baseline environment and are therefore considered as part of the topic assessment chapters.</p> <p>The operation of the Oikos Facility with the OMSSD project in place – including in respect of vessel movements and their potential effects – is explained within Chapter 3 and 10 of this PEIR.</p>
Public Health England	May 2020	<p>This part of Essex is expected to experience a number of large developments and NSIPs in the short term. The demand for additional public services, including healthcare, or the need to find accommodation may create significant impacts due to the presence of the individual construction workforces. The cumulative impact assessment must therefore consider a geographic scope wider than those proposed for direct impacts on health, for example a travel to work approach.</p> <p>Although the scheme in isolation may not have a significant effect on the demand for local housing, this</p>	<p>The geographic scope of the areas of search for other development to be included in the CEA is set out in Table 22.3. These areas of search are considered to be appropriate to ensure that other developments which could result in potentially significant socio-economic cumulative effects with the OMSSD project are identified.</p> <p>Beyond these areas, the socio-economic effects of the OMSSD project are considered to be sufficiently diffuse and of low magnitude that they would not be likely to give rise to significant adverse effects cumulatively with other proposed developments.</p> <p>The CEA will assess other proposed development which</p>

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
		<p>needs to be considered across the wider geographic housing area and in particular the demand for accommodation from other concurrent large developments and NSIPs, for example for Lower Thames Crossing.</p> <p>Given the number of other large developments near the study area the cumulative impact on housing provision should be included.</p> <p>Demand for temporary accommodation by the construction work force should be identified and an assessment made regarding the impact on local housing supply and affordability, particularly in relation to low cost housing.</p>	<p>could give rise to significant socio-economic effects cumulatively with the OMSSD project. This will include consideration of significant cumulative effects on demand for local housing and public services as appropriate.</p>
		<p>Although the scheme in isolation may not have a significant effect on the local demand for public services and local health services, this needs to be considered across the wider geographic area and in particular the demand on public services from other concurrent large developments and NSIPs, for example for Lower Thames Crossing.</p> <p>Given the number of other large developments near the study area, the cumulative impact on public services should be included.</p> <p>The ES should assess the current and future demand on public services and the subsequent assessment of significance as a result of the DCO.</p>	

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
Suffolk County Council	May 2020	<p>In the cumulative impacts section, significant projects have been considered within a distance of 5km. The zone of influence, particularly for labour market impact, should take into account a 90-minute travel to work radius for residential workers. However, the zone of influence for a supply chain assessment that would identify local supply for construction and operation should include a far greater geography ensuring areas such as Ipswich, Lowestoft and Great Yarmouth, where a significant supply chain supporting other energy infrastructure builds, are located. There is the potential for impacts on transport networks, especially if the proposed timescales are similar to that of the projects in Suffolk and these potential cumulative effects should be considered for further assessment. Although there is a distance between Canvey Island to projects within Suffolk, if there is an overlap of timescales, there could be a significant impact on the county and potentially a number of planned and approved projects.</p>	<p>The geographic scope of the areas of search for other development to be included in the cumulative effects assessment is set out in Table 22.3. These areas of search are considered to be appropriate to ensure that other developments which could result in potentially significant cumulative effects with the OMSSD project are identified.</p> <p>Beyond these areas, the socio-economic and transport effects of the OMSSD project are considered to be sufficiently diffuse and of low magnitude that they would not be likely to give rise to significant adverse effects cumulatively with other proposed developments.</p> <p>The CEA will assess other proposed development which could give rise to significant socio-economic effects cumulatively with the OMSSD project.</p>
Marine Management Organisation (MMO)	June 2020	<p>The MMO provided comments regarding cumulative and in-combination effects in relation to the topics of benthic ecology, coastal processes, fish ecology and fisheries, shellfish, and underwater noise. With regard to benthic ecology, the MMO noted that there did not appear to be any relevant applications in Table 21.1 of the Scoping Report that have the potential to impact benthic ecology receptors in the area and, thus, the MMO could not comment regarding the suitability of this scoping assessment. The MMO</p>	<p>The MMO's comments have been noted and taken into account in preparing this chapter of the PEIR.</p>

Consultee	Date	Summary of Response	How comments have been addressed in this Chapter / PEIR
		indicated that the proposed approach for assessing potential cumulative and inter-related impacts on fish ecology and fisheries and shellfish seemed appropriate. With regard to fish ecology and fisheries, the MMO furthermore noted that the significance of cumulative and inter-related impacts and effects are likely to depend on the method of dredging used and the need for offshore disposal.	
Essex County Council (Highways)	November 2020	Essex County Council Highways advised that the short/medium term proposals at the A130 / A127 Fairglen Interchange north of Canvey Island are programmed to commence in 2021. The long term scheme is still subject to funding being secured and remains a number of years off in its implementation.	The short/medium term and long term proposals for the A130 / A127 Fairglen Interchange have been considered but are not included in the short list and scoped into the CEA as they are not considered to meet all of the short list criteria.
Environment Agency	November 2020	The EA advised that, in terms of proposed flood defence works on Canvey Island, the only EA scheduled works up to 2025 are the Southern Shoreline works in the Thorney Bay area. The EA referred to this project in its response to the Scoping Report.	This project has been included in the short list presented in Appendix 22.1.

- 22.22 All comments relating to the cumulative and in-combination effects assessment submitted during statutory consultation and subsequent ongoing consultation will be taken into account in the preparation of the ES chapter.
- 22.23 In order to ensure a robust and proportionate approach, Oikos is seeking to agree the methodology for the CEA and in-combination effects assessment set out in this PEIR chapter with consultees, including through the statutory consultation process itself. Views are also sought on the preliminary short list of other proposed development that has been identified and is presented in Appendix 22.1 to this document, which will be taken forward to the CEA in the ES. Any projects which consultees consider should be included in the short list should be submitted to Oikos to be considered for inclusion in the short list.

- 22.24 Comments are, therefore, requested through the statutory consultation on the methodology and short list from the consultees involved in consultation and decisions on other projects in the vicinity of the OMSSD.

Assessment Methodology

Cumulative Effects Assessment

- 22.25 In accordance with PINS Advice Note 17, a staged approach to the cumulative effects assessment is proposed. The stages consist of:

Stage 1 – establish a long list of other developments;

Stage 2 – establish a short list of development from the Stage 1 long list;

Stage 3 – gather information on the short list of developments, and

Stage 4 – undertake an assessment of the cumulative effects of the short list developments with the OMSSD project.

- 22.26 For the purposes of the PEIR, Stage 1 and Stage 2 of the CEA process have been completed. The CEA is an iterative process, and as such, ongoing monitoring will be undertaken to update the work undertaken on Stages 1 and 2 so that the ES reflects the latest position of relevant other development proposed within the vicinity of the OMSSD project. Comments received during ongoing consultation will also be taken into account as part of the CEA process.

Stage 1 - Establishing a Long List of Developments

- 22.27 Stage 1 of the CEA process comprises the identification of a long list of other development proposed in the vicinity of the OMSSD project.

- 22.28 The first step in establishing such a long list was to identify the different types of development to investigate. A comprehensive approach was taken whereby types of development considered included development:

- (i) being taken forward under the Town and Country Planning regime – with a distinction being made between ‘major’ development, as defined by the appropriate planning legislation, and ‘non-major’ development;
- (ii) being taken forward under the Nationally Significant Infrastructure Project (NSIP) regime;
- (iii) being taken forward under the Marine Licence regime, and
- (iv) identified as possible development within development plans and other similar plans and programmes.

- 22.29 Applications for householder development, minor alternations to non-residential properties, and applications for advertisement consent have been scoped out of the process, as there is considered to be limited potential for these development types to give rise to significant cumulative effects with the OMSSD project, due to their very minor scale. Any such developments of these types currently taking place are also considered likely to be completed prior to the construction of the OMSSD project.
- 22.30 The second step in establishing a long list was then to consider what development to include in the list having regard to the certainty of that development taking place, which has implications for the level of detail likely to be available about the development in question.
- 22.31 AN17 provides – at Table 2 – some guidance on this matter by identifying three different tiers which, in summary, are as follows:
- Tier 1 development*** – consisting of developments which:
- are under construction;
 - have permitted applications which are not yet implemented;
 - have submitted applications not yet determined, including applications being appealed.
- Tier 2 development*** – consisting of projects on the Planning Inspectorate’s NSIP Programme of Projects where a scoping report has been submitted.
- Tier 3 development*** – consisting of projects:
- on the Planning Inspectorate’s NSIP Programme of Projects but where no scoping report has been submitted;
 - identified in relevant development plans;
 - identified in other plans and programmes.
- 22.32 This guidance has been used to guide the types of development identified on the long list.
- 22.33 Rejected applications, which are not the subject of appeals or are outside the timeframe for bringing an appeal, have been scoped out of the process. Withdrawn applications are also scoped out of the process. This is because the implementation of these planning applications is not considered to be reasonably foreseeable, as they are not approved or extant applications.
- 22.34 Allocated sites within relevant development plans which are not yet subject to planning applications, and projects identified in other plans and programmes which set the framework for future development – namely Tier 3 types of developments other than those on the Planning Inspectorate’s Programme of Projects – have also been scoped out of the process. This is because the details of any development that may come forward as a result of these plans are unknown. Furthermore, the future development of allocated sites will already be taken into account as appropriate in each of the specific topic assessments in considering the future development of the baseline environment. It is also expected that future

developers bringing forward projects identified in these plans would carry out their own assessment of cumulative effects.

22.35 The third step in establishing a long list of developments consisted of defining the area of search. These areas of search have been identified taking into account the different Zones of Influence (Zoi) for each relevant environmental topic assessment considered within the PEIR. For each environmental topic, the Zoi corresponds with the study area described in the respective PEIR chapter.

22.36 Table 22.2 provides an overview of the Zoi for each topic assessment:

Table 22.2: Overview of Zones of Influence

Environmental Topic/Aspect	Approximate Zone of Influence (from OMSSD project site)
Terrestrial Ecology (Chapter 7)	<ul style="list-style-type: none"> • 500m for Habitats of Principal Importance • 2km for protected and notable species • 2km for non-statutory nature conservation designations (LWS) • 2km for Local Nature Reserves (LNR) • 5km for national nature conservation designations (Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs)) • 5km for international nature conservation designations (Natura 2000 sites – Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar)
Water Environment (Chapter 8)	<ul style="list-style-type: none"> • The Thames Estuary covering approximately 8km to the west and 11km to the east • 5km up and down flow from the centre of the disposal site (assumed to be the North Edinburgh Channel (TH080))
Marine Ecology (Chapter 9)	<ul style="list-style-type: none"> • The Thames Estuary covering approximately 8km to the west and 11km to the east • 5km up and down flow from the centre of the disposal site (assumed to be the North Edinburgh Channel (TH080))
Commercial and Recreational Navigation (Chapter 10)	The Thames Estuary covering from Southend Pier to the east to the London Gateway port facility to the west.
Traffic and Transport (Chapter 11)	The road links from the site to the A13 junction including Haven Road, Roscommon Way, Canvey Road and Canvey Way, and separately, junction 30 of the M25 (as shown on Figure 11.2).
Air Quality (Chapter 12)	<ul style="list-style-type: none"> • 350m for sensitive receptors from construction site activity • 20km for sensitive receptors from road traffic, covering the road links and nearest receptors described in the PEIR chapter • 20km for sensitive receptors from vessels, covering the Oikos facility jetties and nearest receptors to jetties, and the road links described in the PEIR chapter
Noise and Vibration (Chapter 14)	<ul style="list-style-type: none"> • 800m for noise sensitive receptors • 2.25km for noise sensitive road link receptors • 12.5km for ecological receptors, including the Thames Estuary and Marshes SPA/Ramsar/SSSI, the Holehaven Creek SSSI and the foreshore area immediately in front of the Oikos Facility

Environmental Topic/Aspect	Approximate Zone of Influence (from OMSSD project site)
Ground Conditions (Chapter 15)	<ul style="list-style-type: none"> • 1km
Flood Risk and Surface Water Drainage (Chapter 16)	<ul style="list-style-type: none"> • 1km • The Thames Estuary covering approximately 8km to the west and 11km to the east (when considering the potential for impacts on downstream water quality at a river catchment level)
Landscape and Visual (Chapter 17)	8km
Lighting (Chapter 18)	8km
Historic Environment (Chapter 19)	<ul style="list-style-type: none"> • 1km (when considering physical effects to heritage assets) • 5km (when considering non-physical effects from changes to the setting of heritage assets)
Socio-economic (Chapter 20)	The local and sub-regional area in respect of the majority of receptors, but the nation as whole in respect of the achievement of relevant policy objectives.
Safety (Chapter 21)	HSE Outer Consultation Zone

- 22.37 Following a review of these Zol and consideration of the scale and nature of the OMSSD project and the preliminary findings of the assessments undertaken, the areas of search set out in Table 22.3 were identified for each type of development to be considered within the CEA.
- 22.38 Based on the professional judgement and expertise of the project team, the identified areas of search are considered to be suitably wide areas to ensure that other developments which could result in potentially significant cumulative effects with the OMSSD project are identified. The identified areas of search are considered appropriate to ensure a robust and proportionate assessment to be undertaken.
- 22.39 Any suggestions, however, of any other proposed developments for inclusion in the CEA by consultees made during the statutory consultation process will be considered on a case-by-case basis, including those outside of the areas of search but which fall within a wider Zol for a specific topic or topics.
- 22.40 After undertaking these three steps – the results of which are summarised in Table 22.3 – developments to be included in the long list have then been identified from a review of the extant application records held online by relevant local planning authorities, information available on the Planning Inspectorate’s NSIP Programme of Projects and applications for marine license activities/development on the MMO’s online marine license register. The long list of developments identified from this search is set out in Appendix 22.1.

Table 22.3: Types of other proposed development and areas of search

Other development type	Status of development	Equivalent Tier given in Advice Note 17	Area of search
Major development (as defined under the Development Management Procedure (England) Order 2015) (as amended) / Local Development Orders (as set out within the Town and Country Planning Act 1990 (as amended))	Projects that are under construction	Tier 1	5km
	Permitted application(s) not yet implemented	Tier 1	
	Submitted application(s) not yet determined	Tier 1	
	All refusals subject to appeal procedures not yet determined	Not specifically included in AN17 but considered to be equivalent to Tier 1	
Non-major development	Projects that are under construction	Tier 1	1km
	Permitted application(s) not yet implemented	Tier 1	
	Submitted application(s) not yet determined	Tier 1	
	All refusals subject to appeal procedures not yet determined	Not specifically included in AN17 but considered to be equivalent to Tier 1	
Nationally Significant Infrastructure Projects / Projects on the Planning Inspectorate's Programme of Projects	Projects on the PINS Programme of Projects that are under construction	Tier 1	10km
	Projects with development consent not yet implemented	Tier 1	
	Submitted application(s) undergoing the development consent process but not yet consented	Tier 1	
	All refusals subject to judicial review not yet determined	Not specifically included in AN17 but considered to be equivalent to Tier 1	
	Projects on the Programme of Projects where a scoping report has been submitted	Tier 2	

Other development type	Status of development	Equivalent Tier given in Advice Note 17	Area of search
	Projects on the Programme of Projects where a scoping report has not been submitted	Tier 3	
Marine licence activities/development	Projects on the MMO marine licence register that are being undertaken/constructed	Not specifically included in AN17 but considered to be equivalent to Tier 1	5km
	Submitted applications not yet determined	Not specifically included in AN17 but considered to be equivalent to Tier 1	
	All refusals subject to appeal procedures not yet determined	Not specifically included in AN17 but considered to be equivalent to Tier 1	
Projects identified in development plans and other plans and programmes	Projects identified in the relevant development plan (and emerging development plans)	Tier 3	N/A – Scoped out
	Projects identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward	Tier 3	

Stage 2 - Establishing a short list of developments for the assessment:

- 22.41 The preliminary long list of developments identified under Stage 1 (see Appendix 22.1) has then been filtered to produce a short list which includes only those other proposed developments considered to potentially give rise to significant cumulative effects.
- 22.42 The temporal scope used to establish the short list comprises the suggested construction and operation timescales of the OMSSD project. Construction is anticipated to commence during Q1 2023. It is envisaged that some tanks will be commissioned and operating by Q4 2024, with the aim being for the project to be fully commissioned and operational in 2025. As such, there may be some overlap between the project’s construction and operational phases, which will be taken into account in the CEA.

22.43 Following the approach suggested in AN17, criteria were developed to screen out development considered unlikely to lead to significant cumulative effects. In order to ensure an appropriate and proportionate assessment, only those projects which met all of the following criteria were included in the short list, unless professional judgement suggested otherwise:

- **Criterion 1 – Temporal scope:** the development is not completed or operational, and the construction or operation of the proposed development would be likely to take place within the same time period as the programmed construction or operation of the OMSSD project.
- **Criterion 2 – Location, scale and nature of the development:** the development is either within 500m of the OMSSD project or is identified as ‘EIA development’ under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) or the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended).
- **Criterion 3 – Source-pathway-receptor linkages:** it is considered that, for any one or more environmental topics/aspects, a significant cumulative effect could occur due to potential source-pathway-receptor linkages shared between the development and the OMSSD project.

22.44 Appendix 22.1 sets out which developments have been filtered out and which are included within the preliminary short list and proposed to be taken forward for assessment, following application of the above criteria and the project team’s professional judgement.

Stage 3 - Gather information on the short list developments:

22.45 Stage 3 of the assessment involves gathering as far as is possible detailed information on the short-listed developments in order to then undertake the assessment. This information includes the following:

- proposed design and location information;
- proposed programme of construction, operation and decommissioning;
- relevant environmental assessment information (if available) and any other relevant information to understand the environmental impacts of the proposed development and the potential for significant cumulative effects; and
- any other publicly available information deemed to be relevant.

22.46 Stage 3 of the process is currently being undertaken to inform the assessment (Stage 4) which will be presented in the ES.

Stage 4 - Undertake the assessment:

22.47 This stage involves undertaking the cumulative effects assessment of the short-listed developments and the OMSSD project. The assessment will be undertaken to an appropriate level of detail having regard to the type and extent of information available.

Professional judgement will be used to determine the potential for significant cumulative effects.

22.48 The Stage 4 assessment will be presented in the OMSSD ES.

In-Combination Effects Assessment

22.49 The assessment of in-combination effects involves the consideration of where two or more different types of effect arising from the OMSSD project could interact and whether this interaction could result in a significant combined effect upon environmental receptors or resources.

22.50 In order to assess the in-combination effects of the OMSSD project, the topic assessments will be reviewed to identify any receptors which will experience two or more different residual effects.

22.51 To ensure a proportionate approach, for the purposes of presenting the in-combination assessment, individual receptors are grouped together as appropriate into receptor groups. For example, individual heritage receptors are considered to form part of a 'Cultural Heritage' receptor.

22.52 The receptors scoped into the assessment and the residual effects predicted to be experienced by them will then be set out in a check-list table. This provides a clear overview of the different residual effects identified for each receptor and facilitate the assessment of in-combination effects.

22.53 The assessment will then be undertaken using the information from the topic assessments. A qualitative assessment will be undertaken by the project team using professional judgement, considering the interaction of the different residual effects on a given receptor and whether this interaction could give rise to a significant in-combination effect.

22.54 The overall level of significance of the potential combined effect on the receptor will be identified based on professional judgement informed by the level of significance of the relevant residual effects reported in the topic assessments which they were identified in. The outcome of this assessment, including any significant in-combination effects predicted and any proposed mitigation, will be presented in the ES.

22.55 For the purposes of the PEIR document, a review of the preliminary topic assessment chapters in this document has been undertaken to identify the receptors which, at this preliminary stage, are predicted to experience two or more different residual effects and, therefore, which may have the potential to experience significant in-combination effects. This information is provided in the form of a simple matrix table provided at Table 22.4.

Cumulative Effects Assessment (Stages 1 and 2)

Identification of a Long List of Developments

- 22.56 The long list of developments (Stage 1 of the process) is provided in Appendix 22.1. Figures 22.1 and 22.2 show the location of each development in relation to the defined search areas.
- 22.57 The only NSIP identified within the area of search for this type of development (10km) was the Tilbury Energy Centre project⁶⁵⁸. In a withdrawal letter published on the National Infrastructure Planning website in November 2018, the developer indicated that this project is not being progressed⁶⁵⁹. As such, this project is scoped out of the CEA in accordance with the methodology set out in this PEIR chapter.

Identification of a Short List of Developments

- 22.58 Appendix 22.1 also identifies the developments that have initially been shortlisted at this preliminary stage (Stage 2 of the process) along with a justification for this position. The developments which have been shortlisted and are proposed to be scoped into the CEA are identified in the final column of the table in Appendix 22.1.

In-Combination Assessment

- 22.59 From a review of the preliminary topic assessments and in accordance with the methodology outlined in this chapter, the following receptors have been identified:
- Local residents / population
 - Biodiversity / ecology features – marine and terrestrial
 - Surface water
 - Ground water
 - Soils
 - Cultural heritage
- 22.60 An overview of the residual effects these receptors are predicted to experience at this preliminary stage is set out in Table 22.4. This preliminary work will be kept under review during the assessment process. This review will also take account of any comments received during consultation.

⁶⁵⁸ Planning Inspectorate (2021), National Infrastructure Planning – Tilbury Energy Centre. Available at: <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/tilbury-energy-centre/> [Accessed 10 March 2021]

⁶⁵⁹ RWE (2018), Tilbury Energy Centre Withdrawal Letter. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010089/EN010089-000052-Tilbury%20Energy%20Centre%20-%20Withdrawal%20Letter.pdf> [Accessed 10 March 2021]

22.61 The assessment as to whether any significant in-combination effects could arise as a result of the interaction of the residual effects set out in Table 22.4 will be presented in the ES.

Table 22.4: Receptors and environmental effects identified for inclusion in the in-combination effects assessment

Receptors	Construction Effects								Operation Effects							
	Vessel Traffic	Traffic	Dust & Air Quality	Noise & Vibration	Landscape & Visual Change	Lighting	Accidents	Hydrodynamic & Water Change	Vessel Traffic	Traffic	Dust & Air Quality	Noise & Vibration	Landscape & Visual Change	Lighting	Accidents	Hydrodynamic & Water Change
Local Residents / Population	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Biodiversity / Ecology Features	X		X	X	X	X	X	X	X		X	X	X	X	X	X
Surface Water	X		X				X	X	X						X	X
Ground Water							X	X							X	X
Soils							X								X	
Cultural Heritage					X	X	X						X	X	X	