

# OIKOS MARINE & SOUTH SIDE DEVELOPMENT



CONSULTATION BOOKLET

Incorporating the Non-Technical Summary of Preliminary  
Environmental Information

PINS Reference TR030004  
April 2021

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# 1 Introduction

## What is the Purpose of this Booklet?

- 1.1 Welcome to the Consultation Booklet for the Oikos Marine & South Side Development (OMSSD) project. This booklet provides you with information about the project, the preliminary assessment work we have undertaken and the consultation process that is currently underway, including how you can get involved in the consultation and how to comment on the OMSSD project. More detailed technical information can be found in our Preliminary Environmental Information Report that is available separately.
- 1.2 We hope this document is informative and useful. If you have any questions, please contact the project team by either emailing [oikos@communityrelations.co.uk](mailto:oikos@communityrelations.co.uk) or calling Freephone: 0800 206 2583

## What is the Purpose of this Consultation?

- 1.3 At its Haven Road facility on Canvey Island, Oikos Storage Limited (Oikos) is proposing, in summary, to construct additional marine loading and unloading infrastructure on its two operational jetties and to redevelop the southern land side part of the facility. This project is known as the Oikos Marine & South Side Development, or OMSSD for short.
- 1.4 The consultation we are currently undertaking represents an important point in the timeline of the project. Known as the 'Statutory Consultation Period' this is our opportunity to share with you the detail of our proposed development as it currently stands, explain how we plan to deliver and operate it, and explain how we will seek to make sure its impacts are acceptable both when we build it and when the development is in use.
- 1.5 Since our last consultation process in November 2019 a great deal of work has been carried out to design, evaluate and assess the proposed OMSSD project. Although not yet complete, our proposals have now reached a stage where we can provide - through this current consultation - more detail on the proposed development and the work we will carry out to manage our impact on local communities, local roads and the natural environment.
- 1.6 The Statutory Consultation Period is, therefore, important for you as it is your chance to review our proposals and tell us about any issues that you feel are missing or require additional information. It will give you the information you need to stay involved, both now as we consult on our proposals and in the future when our proposals are considered in detail by the decision maker.

## When Can I Get Involved?

- 1.7 Our Statutory Consultation Period is open from **6<sup>th</sup> April until 11:59pm on Tuesday 18<sup>th</sup> May 2021**. We would very much welcome your involvement and input into this important stage in the preparation of this critical project.

## Structure of this Document

- 1.8 Following this introductory section, this document provides a non-technical summary of the more detailed information about the project which is contained within our Preliminary Environmental Information (PEI) documentation that is made available as part of the consultation.
- 1.9 To help you to locate the information you require we have structured this booklet so that the topic sections share the same chapter numbers as those topics within the main PEI Report (the PEIR). Table 1 below provides signposts for each chapter.

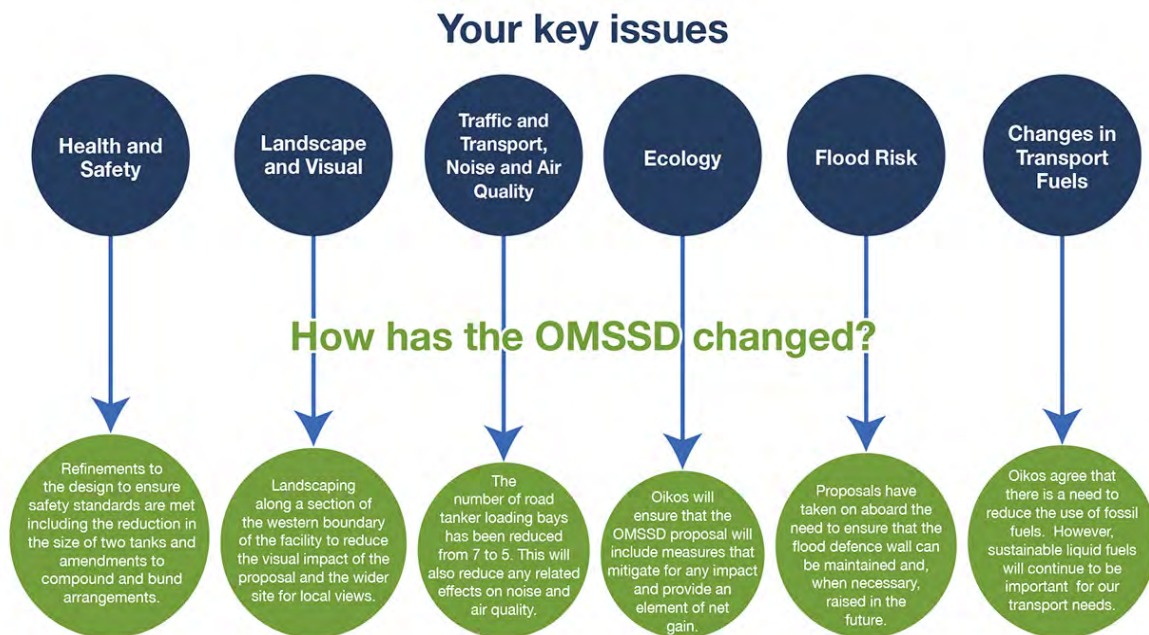
*Table 1: Topic Signpost*

Information or Topic Type	Consultation Booklet Section	PEIR Chapter
Site and Surroundings	2	2
The OMSSD Project	3	3
Need and Alternatives	4	4
Legislative and Policy Context	5	5
Environmental Impact Assessment Process	6	6
Terrestrial Ecology	7	7
Water Environment	8	8
Marine Ecology	9	9
Commercial and Recreational Navigation	10	10
Traffic and Transport	11	11
Air Quality	12	12
Greenhouse Gases and Climate Change	13	13
Noise and Vibration	14	14
Ground Conditions	15	15
Flood Risk and Surface Water Drainage	16	16
Landscape and Visual	17	17
Lighting	18	18
Historic Environment	19	19
Safety	20	20
Socio-Economic	21	21
Cumulative and In-Combination Effects	22	22

## What has changed since November 2019?

- 1.10 In November 2019 we announced the OMSSD project to the public. This began the process of obtaining feedback from the local community, businesses and other key stakeholders to inform the development and design of the project. In particular, it helped us to identify issues of significant interest to the community and local stakeholders which we have taken account of in the ongoing design process.
- 1.11 You may have attended one of our events or taken part by responding to us with your thoughts and views and if you did, we would like to thank you for your time – all views received have been considered and taken into account.
- 1.12 Following the non-statutory consultation in November 2019 we have continued to work hard on the project’s design and have made improvements and revisions to the proposals in the light of this, our ongoing assessment and design work, and our discussions with statutory bodies. Key changes to the OMSSD are show below in Figure 1.
- 1.13 More details of the previous consultation activities in November 2019 are available to view at: [www.oikos.co.uk/omssd/](http://www.oikos.co.uk/omssd/)

Figure 1: Key Changes to the OMSSD Project since November 2019



## Benefits of the OMSSD Project

- 1.14 Information on the benefits of the OMSSD project is provided within the non-technical summary information that follows this introductory section. These benefits include the fact that the OMSSD project will significantly enhance the contribution which the Oikos Facility makes to the security, resilience, flexibility, affordability and sustainability of the UK’s fuel supply and distribution system. The project will also benefit the ability of the facility to store and distribute alternative liquid fuels as and when they become more widely available and

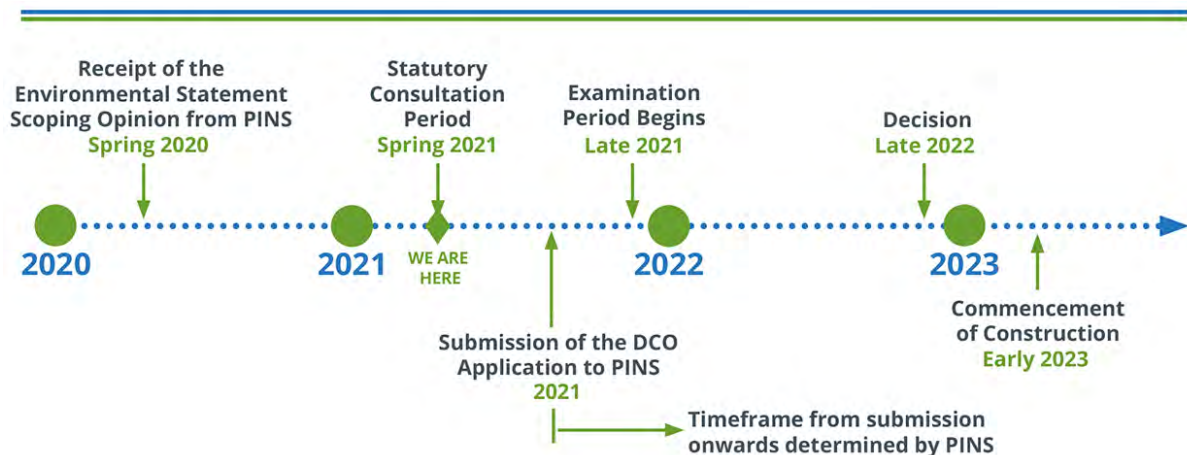
used.

- 1.15 The OMSSD project will deliver benefits in the form of employment opportunities, both during the construction and operational phases. The project also seeks to provide environmental benefits. Most notably in the form of an extensive package of off-site ecological mitigation and enhancement works, as well as on-site landscape enhancements.

## Timeline

- 1.16 As you can see on the Project Timeline below (Figure 2), we have now entered the Statutory Consultation Period, which will run until the 18<sup>th</sup> May 2021. We will record all formal written responses received during the consultation period and carefully consider these in finalising our application.
- 1.17 We will summarise this information in a Consultation Report, which will form part of the Development Consent Order (DCO) application that we aim to submit to the Planning Inspectorate later in 2021.
- 1.18 For more information about the DCO process visit the Planning Inspectorate's (PINS) website: <https://infrastructure.planninginspectorate.gov.uk>

Figure 2: Latest Project Timeline



- 1.19 Although once we have submitted our application the timeframe will be determined by PINS, and subject to PINS accepting our application, we anticipate that the examination period for the OMSSD project could begin in late 2021, with a decision due by late 2022. If consent is granted, construction would be anticipated to start in early 2023.
- 1.20 As we proceed, we will continue to update our Project Timeline and make this available on our Project website.

## How to Get Involved

- 1.21 Due to the ongoing COVID-19 pandemic we are using a digital-first approach to consultation and engagement to give you access to all appropriate information and opportunities to

provide feedback, but without having to meet in person. We have also taken into consideration the fact that a digital-first approach to consultation and engagement may not be suitable for all and have provided non-digital options for taking part in the consultation process as well.

- 1.22 **Virtual Webinar and Online Question and Answer Sessions** – The project team will present information about the OMSSD and seek to answer your questions on the project. These sessions will be held on the following dates:
- Monday 26<sup>th</sup> April 2021, 11 am – 2pm
  - Thursday 29<sup>th</sup> April 2021, 9am – 1pm
  - Tuesday 4<sup>th</sup> May 2021, 6pm – 9pm
  - Saturday 8<sup>th</sup> May 2021, 8am – 11am
- 1.23 Access is by registration only. Please visit [www.oikos.co.uk/omssd/consultation](http://www.oikos.co.uk/omssd/consultation) or call 0800 206 2583 if you are interested in attending.
- 1.24 **The Virtual Exhibition Room** – recognising the restrictions we all face at this present time we have worked hard to create a virtual exhibition space in which you can spend time learning about the project. The Virtual Exhibition Room will be available throughout the Statutory Consultation Period and can be accessed via the following link:  
[www.consultationspace.com/Oikos-OMSSD](http://www.consultationspace.com/Oikos-OMSSD)
- 1.25 **Telephone Surgeries** – project surgery ‘appointments’ can be booked with a member of the OMSSD project team to talk through questions and issues relating to the project. Please email [oikos@communityrelations.co.uk](mailto:oikos@communityrelations.co.uk) or call 0800 206 2583 if you would like to book an appointment.
- 1.26 **OMSSD Consultation Website** – details about the project, the consultation activities, documents, feedback questionnaire and how to submit your comments are available on the OMSSD Consultation website at [www.oikos.co.uk/omssd/consultation](http://www.oikos.co.uk/omssd/consultation)
- 1.27 **Printed copies** – for those who require them, printed copies of all documents and consultation materials found on the OMSSD website will be made available. There may be a charge for certain documents, including the PEIR, of up to a maximum of £300. To arrange for copies of information that you require, or to discuss your information needs, please call 0800 206 2583 or email [oikos@communityrelations.co.uk](mailto:oikos@communityrelations.co.uk).

## How to Respond to the Consultation

- 1.28 A feedback questionnaire has been produced to help you provide comments on the project. This questionnaire can be accessed digitally and is also available in paper copy from:
- The OMSSD exhibition room: [www.consultationspace.com/Oikos-OMSSD](http://www.consultationspace.com/Oikos-OMSSD)
  - The OMSSD Consultation website: [www.oikos.co.uk/omssd/consultation](http://www.oikos.co.uk/omssd/consultation)
  - Via Email: [oikos@communityrelations.co.uk](mailto:oikos@communityrelations.co.uk)



- Or call Freephone: 0800 206 2583 to request a copy to be posted to you
- 1.29 Please complete the feedback questionnaire online either from within the virtual exhibition room or via the OMSSD consultation website, or alternatively send your completed forms or any other written comments to:
- Email address [oikos@communityrelations.co.uk](mailto:oikos@communityrelations.co.uk)
  - Postal address OIKOS FREEPOST (must be written in capitals and no stamp is required)
- 1.30 However, you choose to tell us your views, **we ask that you ensure we receive your response in writing by no later than 11:59pm on Tuesday the 18th May 2021.** Responses received after this date may not be considered.
- 1.31 **Public Information Points:** Information relating to the OMSSD consultation webpage is also available on the Castle Point Borough Council and Canvey Island Town Council websites.
- [www.castlepoint.gov.uk/](http://www.castlepoint.gov.uk/)
- [www.canveyisland-tc.gov.uk/](http://www.canveyisland-tc.gov.uk/)

## 2 Site and Surroundings

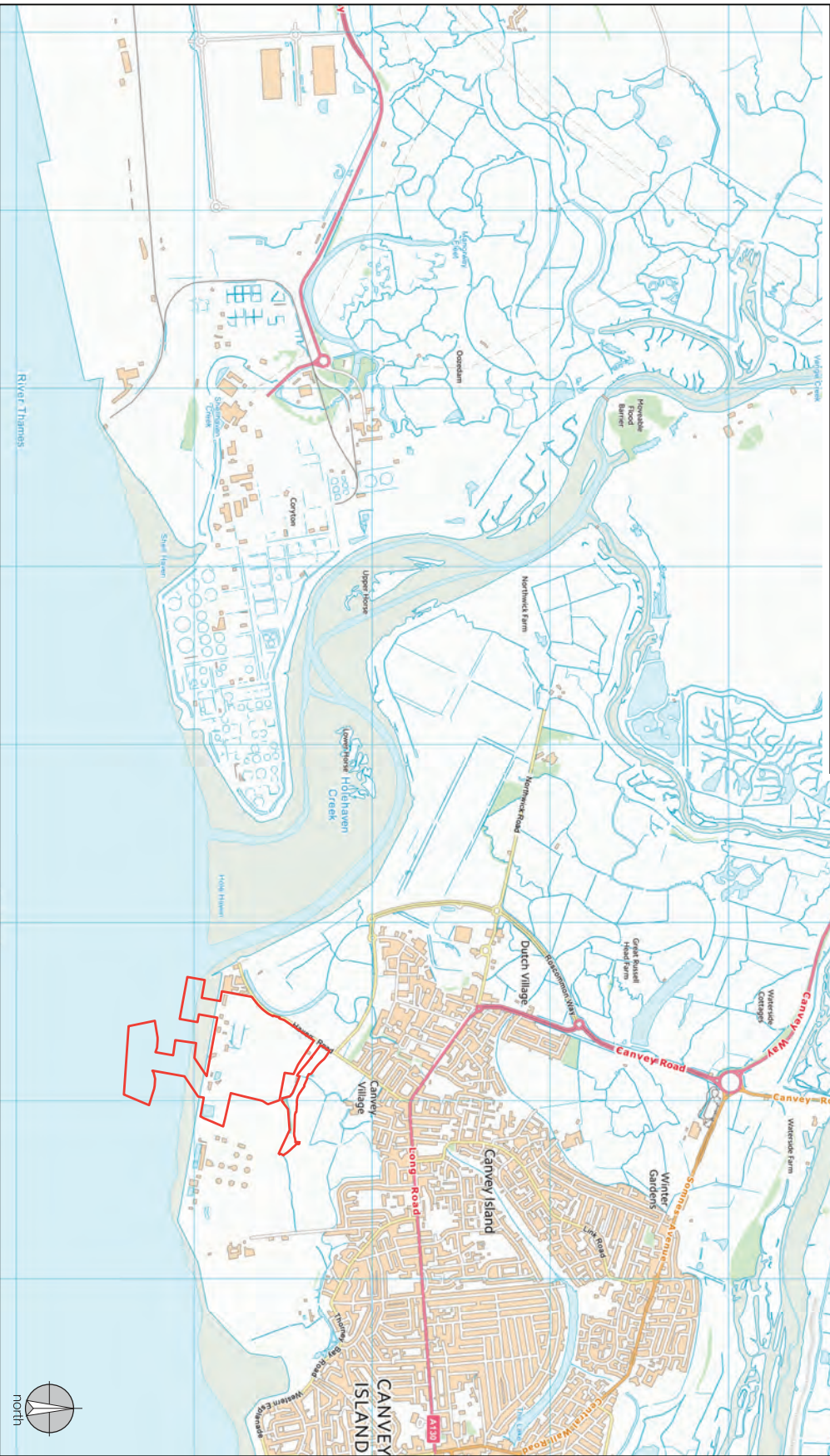
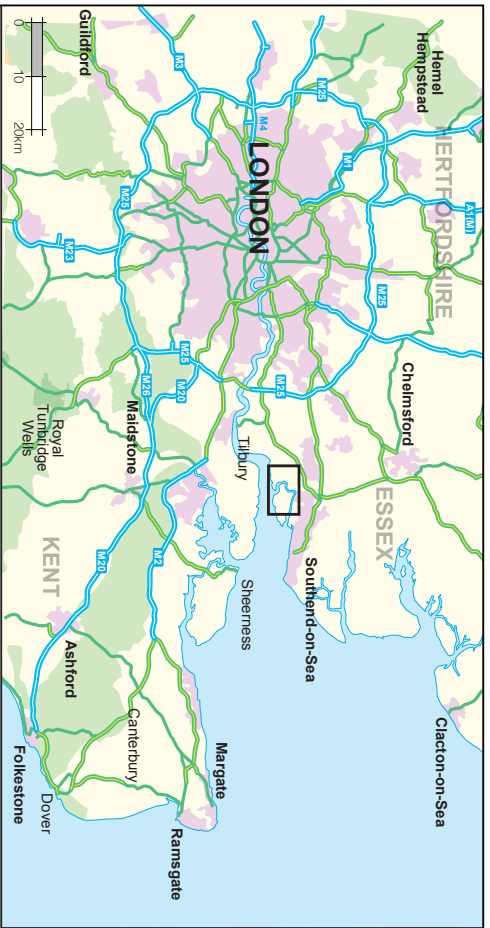
### The Oikos Facility

- 2.1 The Oikos harbour facility covers an area of approximately 27.5 hectares (ha). It is located in the south-west corner of Canvey Island, on the River Thames, in the administrative area of Castle Point Borough Council (CPBC) and in the county of Essex (see Figure 3).
- 2.2 The facility fronts directly onto the River Thames and forms part of the busy port and industrial coastal vista of the area. The Oikos Facility was first commissioned in the 1930s and has developed over the years. It is held on a long lease from the freehold owners, the Port of London Authority (PLA), and is recognised as being nationally significant.
- 2.3 The facility handles imports and exports of fuel, oil and petroleum bulk liquid products. Its operations are controlled and regulated by the Health and Safety Executive (HSE) and the Environment Agency (EA) under the Control of Major Accident Hazards Regulations 2015 (as amended) (the COMAH Regulations). The Oikos Facility is designated as an upper tier COMAH site and is fully compliant with the relevant requirements of the COMAH Regulations.
- 2.4 The facility holds a Hazardous Substances Consent (HSC) which is issued by the relevant local authority - Castle Point Borough Council (CPBC). This permits the storage of 292,237m<sup>3</sup> of various petroleum and related products across the site – although the facility's current storage capacity is only 271,737m<sup>3</sup>.

- 2.5 Although the facility has three jetties only two are currently operational. Jetty 1 is able to accommodate tanker vessels of up to 55,000 Dead Weight Tonnes (DWT). Jetty 2 is able to accommodate tanker vessels of up to 120,000 DWT.
- 2.6 Bulk liquid products are brought to the facility by ship, pumped ashore along one of the jetties and stored in one or more of the storage tanks before onward distribution. The onward distribution currently takes place by either underground pipeline or by road tanker. The Oikos Facility is connected to two national fuel distribution pipeline networks which are used for the export of jet fuel, gasoline and diesel from the facility. The facility is understood to be unique in that it is independently owned with such pipeline connections. In addition, three road loading bays for the onward distribution of product are currently in operation at the facility.
- 2.7 Although it has historically contained storage tanks and related infrastructure, the southern part of the Oikos Facility included in the OMSSD project area is today largely clear of such infrastructure, the previous storage tanks having been relatively recently removed.
- 2.8 Existing ecological features at the Oikos Facility consist of two ecological mitigation areas which were created as a result of a previous development at the Oikos Facility.
- 2.9 As well as good accessibility for sea going vessels, the Oikos Facility has excellent links with the strategic road network via Haven Road, Roscommon Way and the A130. These roads, which run around the western edge of the built-up areas of Canvey Island and South Benfleet, provide direct access to the A13 north and west at the Sadlers Farm junction. The A13, in turn, provides access to the M25 at junction 30 approximately 20km to the west.

### **The area surrounding the Oikos Facility**

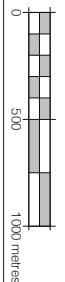
- 2.10 To the immediate north and east of the Oikos Facility is a vehicle salvage and sales operation run by IAA Vehicle Services. This operation consists of a large open-air site, which stores damaged vehicles prior to their sale through online auctions.
- 2.11 Immediately to the north of the IAA site is Howards Way, which provides the primary – and private - vehicle access for road tankers to and from the Calor LPG terminal. Beyond this private access road is an open area of farmland – which is used for grazing and contains a small collection of farm buildings which form Brick House Farm. Part of this open farmland area is currently designated as Brick House Farm Marsh Local Wildlife Site (LWS).
- 2.12 The Calor LPG terminal, located to the east of the Oikos Facility and the IAA vehicle services site, is owned and operated by Calor Gas Ltd. The Calor site adjoins the south-east corner of the Oikos Facility. The terminal contains LPG storage tanks and benefits from a jetty that extends out into the River Thames.
- 2.13 Beyond the Calor LPG terminal and further to the east lies an existing waste water treatment works, the Concord Rangers Football Club and Thorney Bay Caravan Park.



**KEY**  
 OMSSD Project Boundary

**OIKOS MARINE & SOUTH SIDE DEVELOPMENT**  
**FIGURE 3**  
**LOCATION PLAN**

Source: Adams Hendry Consulting Ltd  
 Drawn by: MS Date: 16/03/21



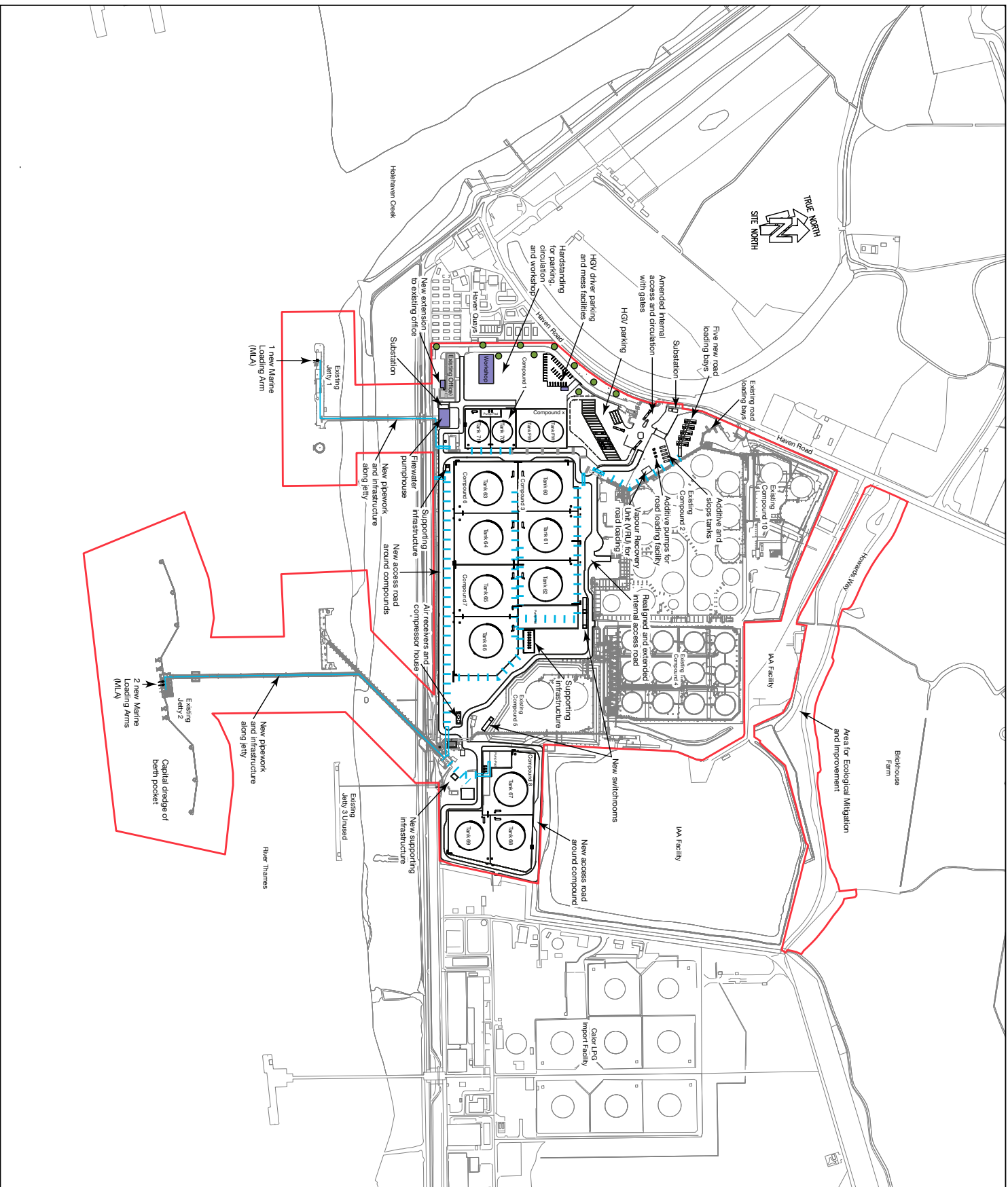
Contains OS data © Crown copyright 2021



- 2.14 There is an existing public footpath (Reference: CANV\_8) immediately to the south of the landside element of the Oikos Facility which forms part of a circular route that runs around the perimeter of Canvey Island. Immediately adjacent to this footpath is the flood defence wall, which extends some 1.5 to 2m above the adjacent ground level, beyond which lies the River Thames.
- 2.15 The closest residential properties to the Oikos Facility are at Haven Quays, located adjacent to the south-western corner of the Oikos Facility. This residential area contains former Coast Guard cottages (Grade II listed), a modern housing development, some static mobile homes and the Lobster Smack Public House (Grade II listed). Access to Haven Quays is via Haven Road.
- 2.16 To the west of Haven Quays lies Holehaven Creek. A large proportion of Holehaven Creek is designated as a Site of Special Scientific Interest (SSSI). To the south of the Oikos Facility is the River Thames, the southern bank of which forms part of the Thames Estuary and Marshes SSSI, Special Protection Area (SPA) and RAMSAR site.

## 3 The OMSSD Project

- 3.1 The Oikos Marine South Side Development (OMSSD) project – as shown on Figure 4 – comprises of the following elements. The description that follows is a summary, and reference should be made to chapter 3 of the PEIR for a more detailed description of the project.
- (i) **Site preparation works** – This element includes the removal of remaining redundant buildings and infrastructure, the relocation of existing ecological areas, the infilling of fire lagoons, the removal of contaminated land and the levelling of the site.
  - (ii) **Additional marine infrastructure** – This element includes the erection of one new Marine Loading Arm (MLA) and associated pipework and infrastructure on Jetty 1 and two new MLAs and associated pipework and infrastructure on Jetty 2. All three new MLAs will have a maximum height of approximately 23m above the level of the jetty.
  - (iii) **A dredge of the Jetty 2 berth pocket** – This dredge element will create a berth pocket with a depth of 16.5m below chart datum over an area approximately 350m long by 60m wide and will enable a broader range of large fully laden vessels to be handled.



**KEY**

- OMSSD Project Boundary
- New compounds / tanks / supporting infrastructure
- New pipelines and supports
- Pipe gantry
- Sump
- Sloop tank
- Potential Landscaping Areas

Source: Worley Drawing No. 60-SG81-00-PI-DPP-0001\_REV1

**Note:**

The OMSSD Project also include various minor ancillary works and alterations to existing infrastructure within the facility.

The OMSSD Project still to be subject to final detailed engineering design.

**OIKOS MARINE & SOUTH SIDE DEVELOPMENT**  
**FIGURE 4**  
**THE OMSSD PROJECT**

Source: Adams Hendry Consulting Ltd  
 Drawn by: MS/NM Date: 23/03/21



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 Ordnance Survey 100050535



**(iv) New storage tanks and associated infrastructure** – Twelve new storage tanks will be constructed within five new bunded compound areas. Eight of the new tanks will have an approximate operational storage capacity of 33,000m<sup>3</sup> each and be approximately 29m tall by 45m in diameter. Two of the new tanks will have an approximate operational storage capacity of 23,400m<sup>3</sup> each and be approximately 26m tall by 38m in diameter. The remaining two tanks will have an approximate operational storage capacity of 7,200m<sup>3</sup> each and be approximately 18m tall by 27.5m in diameter.

Each new compound will be surrounded by an impermeable concrete wall and be provided with an impermeable base. Necessary infrastructure such as pumps, pipeline instrumentation, lighting, drainage infrastructure and associated safety infrastructure will be provided for each of the new bunded compounds and throughout the site as necessary.

**(v) New internal site access roads and amendments to existing site access roads** – These works are necessary to enable access to be provided to all parts of the facility once the project has been constructed.

**(vi) New Road Tanker Loading Facilities and parking** – Five new road tanker loading bays will be constructed to enable a variety of products to be distributed from the facility by road. These facilities will be provided with necessary supporting infrastructure and an area of associated HGV parking will also be provided.

**(vii) Connections to the national fuel distribution pipelines** – The new storage infrastructure will be connected to the entry points into the national fuel distribution pipeline networks which already exist at the Oikos Facility.

**(viii) New buildings** – This element will include the construction of a new workshop building, an extension to the existing office building and the provision of a small ‘mess building’.

**(ix) Associated operational infrastructure** – This element will include utilities, lighting, drainage infrastructure, parking areas and vehicle circulation space, CCTV provision and minor alterations to existing infrastructure within the facility.

**(x) Fire Water System** – As the existing fire water lagoons are to be filled in, a replacement fire water system is required. Two options are being considered. The first is to construct two tanks to store fire water (identified as Compound X on the figure). The second is to use water from the River Thames via a new pipeline along Jetty 1. New pumps and pipework would also be provided. If the River Thames option is chosen, then the two tanks that have been identified will most likely be used for the storage of appropriate products. Within the current proposals these two tanks have an approximate operational storage capacity of 7,200m<sup>3</sup> each and will be approximately 18m tall by 27.5m in diameter.

**(xi) On site landscaping** – Some localised landscaping will be provided within the western part of the Oikos Facility.

**(xii) Off-site ecological mitigation, enhancements and improvements** – Ecological works will take place off site to both mitigate for the impact of the OMSSD project works and to provide an appropriate level of biodiversity net gain

## Construction of the OMSSD Project

- 3.2 For the purposes of the preliminary assessments reported in the PEIR, construction activity has been broken down into a series of packages that are set out in Table 3.2 of Chapter 3 of the main PEIR document. It is presently anticipated that overall, the construction process is likely to take approximately 24 months – although it could take longer. Whilst at this stage there can be no certainty as to the precise construction period, for the purposes of this preliminary assessment, a worst case assumption has been assessed in terms of potential environmental effects.
- 3.3 The preliminary assessments have proceeded on the basis that construction working hours Monday to Friday would generally be 10 hours (8am to 6pm) and generally 8 hours (8am to 4pm) on Saturdays and Sundays. Some equipment maintenance or set up work may, however, need to take place outside the hours specified above.
- 3.4 It is assumed that a peak flow of approximately 80 HGV loads (160 movements) per day will be generated during the construction phase. Around 120-150 construction workers are expected on site on a typical day, equating to 98 trips (196 two-way light vehicle movements). In total, therefore, forecast peak construction traffic movements are 196 light vehicle and 160 heavy vehicle movements per day. This is a total of 356 movements per day.
- 3.5 All HGV movements associated with the construction of the project will route via Roscommon Way and the A130 to and from the site in order to avoid the residential built-up areas on Canvey Island.

## Indicative Operational Information

- 3.6 Once the OMSSD project has been completed the Oikos Facility will continue to operate 24 hours a day, seven days a week and 364 days a year. All products will continue to be delivered by vessel, stored on site and then exported via the existing fuel distribution pipelines, via road tanker and - following the completion of the OMSSD project - also via vessels using Jetty 1 and 2.
- 3.7 The OMSSD project will result in an increased number of vessels visiting the Oikos Facility, and it is estimated that the number of vessels using Jetty 2 per year could increase as a result of the OMSSD project by around 107 vessels above the 2019 figure of 42 vessels. For Jetty 1, an increase of 93 vessels above the 2019 figure of 43 vessels could be expected.
- 3.8 For the purposes of the preliminary assessment, it has been assumed that the five new road loading bays will operate at full capacity 24 hours a day, seven days a week and 364 days a year, generating a peak of 20 HGVs per hour (10 movements in and 10 movements out). In

practical operational terms, however, this level of activity will not be the case.

- 3.9 The OMSSD project will result in approximately 10 additional members of staff, some of whom will work shift patterns and therefore there will be a minimal increase in staff vehicles entering and leaving the site on a day to day basis.

## 4 Need and Alternatives

### The need for the OMSSD Project

- 4.1 There is, in summary, considered to be a clear need to ensure that the best use is made of the existing critical piece of national infrastructure that is the Oikos Facility in respect of its contribution to the UK's fuel supply and distribution system. This need is identified having regard to the following key factors:

- (i) **The recognised significance of the Oikos Facility and the various significant assets and benefits it has which are collectively considered to be unique, including:**
- A strategic River Thames north side location within the largest fuel market in North-West Europe.
  - Good strategic and site specific deep water marine access, and good landside accessibility.
  - Existing operational connections to two national fuel distribution pipelines – individually both nationally significant assets in their own right.
  - Areas of previously developed but currently vacant land located within the existing operational boundary of the facility.
  - Independent ownership, meaning that the facility is not dependent on the operations or requirements of a particular fuel or product provider.
  - The basic, modern marine infrastructure in place that has the ability to accommodate further equipment and infrastructure for the handling of additional volumes of product and to enable the break bulk of large cargoes and transshipment activities to occur.
- (ii) **The significance of the cargo handled by the Oikos Facility and the changing nature of that trade.**

- 4.2 The products handled at the Oikos Facility are a key critical part of the nation's energy needs and are increasingly being imported by bigger, deeper-draft vessels. Even with the move towards decarbonising transport, there will still be significant demand for liquid transport fuels in the period to 2050, and an increasing amount of this demand will be for imported biofuels and synthetic fuels alongside the residual demand for oil derived diesel, gasoline and jet fuel.



- (iii) **The significance of a flexible, resilient and competitive fuel provision and distribution system that provides capacity where it is required.**
- 4.3 Government policy highlights these matters as key elements in the overall need for new port capacity. The Oikos Facility is located where capacity is required and makes a significant contribution to these aspects of the UK's fuel provision and distribution system.
- (iv) **The recognised significance of the need for the type of infrastructure provided by the Oikos Facility.**
- 4.4 The Oikos Facility is a type of facility which Government policy identifies as playing a vital role in the import and export of energy supplies and as being needed in order to achieve energy security. Government policy indicates that the need for the type of infrastructure provided by the Oikos Facility should be accepted by decision makers.
- (v) **The significance of port facilities contributing to the achievement of sustainable development.**
- 4.5 The achievement of sustainable development is, in general terms, easier to meet in respect of proposals which seek to make the best use of an existing facility.

## **The Consideration of Alternatives**

- 4.6 The preliminary consideration of possible alternative solutions to meeting the need identified can be described by reference to a series of different stages.

### ***Stage 1: Identification and consideration of potential broad options***

- 4.7 Doing nothing or undertaking development at a non-Oikos location are not potential broad options as they would not meet the identified need. The only realistic broad option for meeting the need that has been identified is to undertake further capacity development at the Oikos Facility.

### ***Stage 2: Identification and analysis of initial solutions***

- 4.8 In order to identify and analyse initial solutions falling within the identified broad option, it was necessary to consider those elements of the facility that have the potential to influence its capacity. In summary, as a result of the initial considerations undertaken by Oikos in respect of potential solutions it was concluded that the initial solution to meeting the need identified should consist of:
- (i) a dredge of the Jetty 2 berth to provide 16.5m below chart datum water depth over an appropriate area;
  - (ii) two additional Marine Loading Arms on the Jetty 2 jetty head platform connected to two new pipelines along the jetty approach into the storage area of the facility;
  - (iii) an additional Marine Loading Arm on the Jetty 1 jetty head platform connected to a new pipeline along the jetty approach into the storage area of the facility;

- (iv) approximately 300,000m<sup>3</sup> of additional storage provided in ten approximately 30,000m<sup>3</sup> storage tanks;
  - (v) approximately 10,000m<sup>3</sup> of biofuel product storage in two approximately 5,000m<sup>3</sup> storage tanks;
  - (vi) up to seven additional road loading bays to export product from the facility; and
  - (vii) necessary supporting equipment and infrastructure such as pipework and pumps, control equipment and workshop facilities.
- 4.9 The above elements were worked up into a preferred initial solution. Elements of this preferred initial solution formed the basis of the initial project details publicly announced and subject to initial non statutory consultation in November 2019. The preferred initial solution also formed the basis of the project details subject to formal EIA scoping in early 2020.

### ***Stage 3: Working up a detailed proposal***

- 4.10 Following the announcement of the project in November 2019 and the EIA scoping of the project in early 2020, the preferred initial solution was then subject to a 'Front End Engineering Design' (FEED) study. The purpose of the FEED study was to undertake a detailed review of the preferred initial proposal to determine its engineering feasibility, identify any major implications and then consider any potential amendments required. Through this exercise the OMSSD project has been refined and has emerged from this process as the project as now described in the project's PEIR and in this booklet.

## **5 Legislative and Policy Context**

### **The Planning Act 2008**

- 5.1 The Planning Act 2008 (as amended) sets out the legal framework for applying for, examining and determining applications for Nationally Significant Infrastructure Projects (NSIPs). In deciding an application for an NSIP, the relevant Secretary of State must have regard to, amongst other things, any relevant national policy statement. For the OMSSD project this is the National Policy Statement for Ports (DfT, 2012). In addition, there are relevant aspects of national policy within the overarching National Policy Statement for Energy EN-1 (2011).

### **National Policy Statement for Ports (NPSfP) (2012)**

- 5.2 The NPSfP makes it clear that ports play an essential role in the UK economy, identifying them as having a vital role in the import and export of energy supplies, including oil. Section 3.3 of the statement identifies that ensuring the security of energy supplies through our ports is an important consideration
- 5.3 The statement sets out the Government's assessment of the need for new port

infrastructure. It is explained that the total need for new port infrastructure does not only depend on overall demand for port capacity but also on the need to retain the flexibility that ensures port capacity is located where it is required, and on the need to ensure effective competition and resilience in port operations (NPSfP, paragraph 3.4.1).

5.4 Section 3.5 of the statement sets out guidance to the decision maker on assessing the need for additional capacity. Decision makers are instructed to accept the need for future capacity to:

- *“cater for long-term forecast growth in volumes of imports and exports by sea for all commodities indicated by the demand forecast figures..., taking into account capacity already consented.....;”*
- *support the development of offshore sources of renewable energy;*
- *offer a sufficiently wide range of facilities at a variety of locations to match existing and expected trade, ship call and inland distribution patterns and to facilitate and encourage coastal shipping;*
- *ensure effective competition among ports and provide resilience in the national infrastructure; and*
- *take full account of both the potential contribution port developments might make to regional and local economies.”* (paragraph 3.5.1)

5.5 The statement goes on to make it clear that given the level and urgency of need for infrastructure of the types covered as set out above, the decision maker should start with a presumption in favour of granting applications for port development (paragraph 3.5.2).

### **Overarching National Policy Statement for Energy (EN-1) (2011)**

5.6 This policy statement makes clear that, *“energy is vital to economic prosperity and social well-being and so it is important to ensure that the UK has secure and affordable energy”*. In considering the need for new oil infrastructure projects, the NPS EN-1 highlights the significance of oil products to the UK economy (paragraph 3.9.3) before making clear that:

*“The UK needs to ensure it has the safe and secure supplies of the oil products it requires. Sufficient fuel and infrastructure capacity are necessary to avoid socially unacceptable levels of interruption to physical supply and excessive costs to the economy from unexpectedly high or volatile prices. These requirements can be met by sufficient, diverse and reliable supplies of fuel, with adequate capacity to import, produce, store and distribute these supplies to customers. This in turn highlights the need for reliable infrastructure including refineries, pipelines and import terminals and the need for flexibility in the supply chain to accommodate the inevitable risk of physical outages.”*

### **Energy White Paper – Powering Our Net Zero Future (2020)**

5.7 The White Paper puts in place a strategy for the wider energy system that seeks to transform

energy, supports a green recovery and creates a fair deal for customers. The strategy confirms the phasing out the sale of new diesel and petrol cars by 2030 and the requirement for new cars and vans to be zero emissions at the tailpipe from 2035, whilst recognising the difficulty in identifying zero emissions solutions for HGVs. Reference is also made to supporting the production of sustainable aviation fuels within the UK.

- 5.8 The White Paper considers the downstream oil sector. Recognising its current importance in providing the energy used for transport, the sector is identified as continuing to play a vital role in the transition to a net zero economy, delivering fuel to consumers.
- 5.9 The White Paper further highlights the need to make sure that as we make the transition away from fossil fuels, secure supplies of fuel to the people and businesses whose livelihoods depend on it must be maintained. It makes clear that the need for the energy infrastructure currently set out in the energy national policy statement remains, except in the case of coal-fired generation.

### **The Adopted and Emerging Castle Point Borough Council Local Plan**

- 5.10 The adopted local plan proposals map from 1998 identifies the site of the Oikos Facility simply by the words 'Oil Storage'. Within the emerging plan the Oikos Facility is the subject of draft policy EC4 – Canvey Port Facilities. The supporting text highlights, amongst other things, that the Oikos Facility is nationally significant and has a role to play in ensuring the security of energy supplies in the UK.

## **6 Environmental Impact Assessment Process**

- 6.1 Environmental Impact Assessment (EIA) is a systematic process that provides information about certain categories of development proposals and projects and an indication of their likely significant effects on the environment. The process is designed to identify and assess any significant effects that the given project is likely to have on the environment and then, where appropriate, to identify measures to either mitigate or offset those likely significant adverse effects or maximise likely significant beneficial effects.

### **Proposed Scope of the OMSSD Environmental Statement**

- 6.2 In early 2020 Oikos formally notified the Secretary of State in writing that it intends to provide an Environmental Statement (ES) in respect of the proposed OMSSD project and that the ES will accompany the application for a DCO. An opinion was sought from the Planning Inspectorate on behalf of the Secretary of State as to the scope of that ES. The opinion was provided in May 2020. Throughout the main PEIR document an explanation is given as to how the matters raised within the Scoping Opinion have been addressed at this preliminary information stage.

## The OMSSD Environmental Information

- 6.3 Within the main PEIR document – at Tables 6.2 and 6.3 of Chapter 6 – it is explained where the information required by the relevant EIA legislation has been provided within the PEIR documentation.

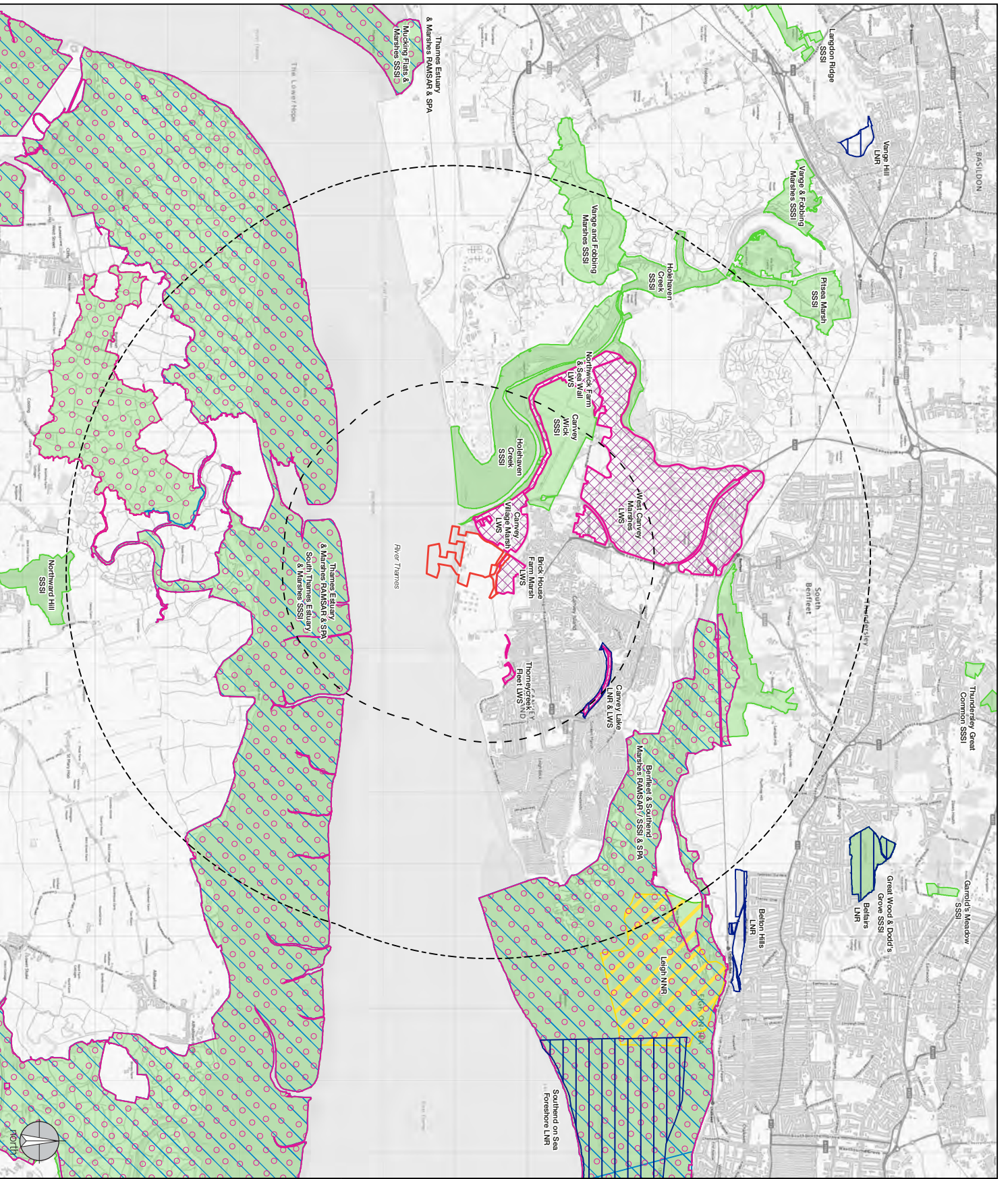
## Methodology used to assess Environmental Impacts

- 6.4 For some disciplines, specific guidance on EIA and the approach to assessment is available, while others rely on best practice. Each individual preliminary assessment chapter contained within the PEIR sets out the assessment methodology which has been utilised in respect of that specific topic, including whether it is based on published guidance and industry standards, or a specific methodology has been followed based on professional judgment.
- 6.5 Each topic assessment chapter of this PEIR has, however, been written to include, as far as practical, a number of general common elements.

# 7 Terrestrial Ecology

## What is there now?

- 7.1 A number of different habitat types are present on and in close proximity to the site of the OMSSD project, including bare ground, hardstanding, buildings, grassland, waterbodies and intertidal mudflats. The Oikos Facility also contains two areas created a number of years ago to mitigate for the ecological impacts of historic development at the facility.
- 7.2 In the vicinity of the OMSSD site there are a number of nature conservation sites of local, national and international importance – although the site of the proposed physical development is neither within or adjacent to any – and within the locality there are a number of records of wildlife species that are protected. Figure 5 illustrates some of this information.
- 7.3 The OMSSD proposals include an area of offsite ecological mitigation located to the north of the OMSSD site on land located around the private access road into the neighbouring Calor Terminal. Further ecological improvements and enhancements are also being investigated on other land within the vicinity of the Oikos Facility.

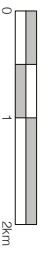


**KEY**

- OMSSD Project Boundary
- 2km Boundary
- 5km Boundary
- Site of Special Scientific Interest
- RAMSAR
- Special Protection Area
- National Nature Reserves
- Local Nature Reserves
- Local Wildlife Sites

**OIKOS MARINE & SOUTH SIDE DEVELOPMENT**  
**FIGURE 5**  
**STATUTORY AND NON-STATUTORY NATURE CONSERVATION DESIGNATIONS**

Source: Adarns Hendry Consulting Ltd  
 Drawn by: IMS Date: 16/03/21



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## **What have we assessed?**

- 7.4 We have carried out preliminary assessments of potential effects during the site preparation and construction phases and the operational phase of the proposed development. Our preliminary assessment has considered the potential effects upon statutory and non-statutory designated sites and associated features; breeding birds; terrestrial invertebrates; reptiles, and wintering birds.
- 7.5 Our preliminary assessment has taken account of a number of ‘in built’ mitigation measures, including the provision of off-site mitigation, enhancements and improvements.

## **What are the potential effects?**

- 7.6 Our preliminary assessment work has identified that during site preparation and construction of the OMSSD project potential direct and indirect effects upon statutory and non-statutory designated sites and wintering birds connected with those sites will be insignificant. Consideration of the effects upon breeding birds, and in particular black redstart, has shown that although there will be habitat loss on site, the overall impact when mitigation is taken into account will be of minor significance – a level not considered to be significant in EIA terms.
- 7.7 In terms of impacts upon reptiles, whilst there will be direct effects from habitat lost within the project boundary area and indirect effects from construction activities the overall effect predicted when mitigation is taken into account, is considered to be insignificant. Invertebrates will also experience direct effects resulting from habitat loss within the project boundary area and indirect effects from construction activities. With mitigation in place, however, the overall direct negative effects on invertebrates are considered to be of only minor significance, with indirect effects being insignificant.
- 7.8 Once the OMSSD project is operational all residual effects on the ecological features considered are considered to be insignificant. This is with the exception of the direct effect on terrestrial invertebrates, reptiles and breeding birds, where the provision of the mitigation that is proposed is considered to generate positive impacts of minor significance.

## **How will we control our effects?**

- 7.9 As a result of the preliminary assessment very little mitigation is proposed for terrestrial ecology over and above the ‘in built’ mitigation being provided, and maintained, in the form of extensive off-site mitigation, improvements and enhancement measures. The only additional mitigation currently proposed is the provision of additional nesting boxes for breeding birds to offset habitat lost through the removal of a building on site.

## 8 Water Environment

### What is there now?

- 8.1 The marine water environment of relevance to the OMSSD project is dominated by the River Thames and the Thames Estuary. The Thames Estuary is one of the largest estuaries on the east coast of England that has been heavily modified over time. A detailed description of this existing environment – in terms of matters such as sediment analysis and tidal processes – is provided within Chapter 8 of the main PEIR document.
- 8.2 Determining what is there now has involved undertaking samples of the area proposed to be dredged alongside Jetty 2.

### What have we assessed?

- 8.3 We have assessed the impact of the OMSSD project on the water (marine) environment by considering the effects generated by the proposed dredging of the berth at the existing Jetty 2, the effects of potential disposal of the dredged material at a marine disposal site, and the effects of implementing a River Thames option for the supply and discharge of water for the proposed fire system – one of the options being considered.
- 8.4 At this stage in the assessment process, it is not known whether the material dredged from alongside Jetty 2 will be disposed of at a marine disposal site or at a land disposal site. The water environment preliminary assessment has, for completeness, assessed the marine disposal of such material.

### What are the potential effects?

- 8.5 Carrying out the dredging at Jetty 2 and disposing of the material could lead to changes to the levels and character of the seabed and could disturb sediment and contaminants.
- 8.6 The dredge could give rise to changes in the concentration of suspended sediment in the water, whilst the change to the depth of the berth as a result of the dredge could also change the way that the water in the River behaves, affecting flow speed, wave behaviour and sediment dispersal.
- 8.7 Away from the OMSSD site the deposit of the dredged material offshore within the Thames Estuary could also change suspended sediment concentrations at the disposal site. Whilst the site that has been considered – the North Edinburgh Channel disposal site within the wider Thames Estuary - is licensed for such purposes the effects of the OMSSD upon it have been considered.
- 8.8 Construction of the marine firewater supply option could cause disturbance to the sea bed, whilst its operational use may cause scouring of the seabed and sediment deposition.



### **How will we control our effects?**

- 8.9 Our preliminary assessment has identified that the majority of potential effects during both the construction and operational phases of the OMSSD project – including effects relating to seabed level changes, sediment disturbance and dispersal, water quality, seabed disturbance and changes - would be insignificant and so mitigation is not required.
- 8.10 Minor significant effects have been identified as likely at the marine disposal site for the material removed during the capital dredge of Jetty 2, although these are expected to be very short term effects and capable of being controlled through the implementation of best practice methods during disposal.

## **9 Marine Ecology**

### **What is there now?**

- 9.1 As a harbour facility the Oikos Facility, and the site of the OMSSD project, is part situated within the natural environment of the River Thames.
- 9.2 The River Thames and the Thames Estuary include a number of different internationally and nationally designated sites. These are shown on Figure 5. The closest site to the Oikos facility is the Holehaven Creek Site of Special Scientific Interest (SSSI) located to the west.
- 9.3 In addition to describing designated sites, the main PEIR document provides a detailed description of the existing marine ecology environment in terms of protected species, intertidal and subtidal habitats and species, fish and shellfish and marine mammals. An understanding of the subtidal environment has been informed by site specific surveys undertaken at, and around, the site of the proposed dredge.

### **What have we assessed?**

- 9.4 We have considered the potential effects of the OMSSD project, during its construction and operation, upon designated conservation sites, marine protected species, intertidal and subtidal habitats and species, fish and shellfish and marine mammals. Potential effects on these features have been considered that could result from the proposed dredging of the berth at the existing Jetty 2, the effects of potential disposal of the dredged material at a marine disposal site, and the effects of implementing a River Thames option for the supply and discharge of water for proposed fire system.

### **What are the potential effects?**

- 9.5 During the construction phase of the OMSSD project there is the potential for impacts on marine habitats and species present on the seabed. These might occur as a result of the removal of part of the seabed, sediment deposition and disturbance, changes in water quality, the introduction and spread of non-native species, the creation of underwater noise

and the direct changes to fish populations and habitats.

- 9.6 Once operational the OMSSD could give rise to impacts resulting from sediment deposition and disturbance, changes to water and sediment quality, the introduction and spread of non-native species and the direct changes to fish populations and habitats.

### **How will we control our effects?**

- 9.7 Our preliminary assessment has considered these potential impacts and their associated effects carefully and all of the effects that have been identified as potentially affecting the marine environment have been judged, at an initial phase, to be largely insignificant.
- 9.8 Accordingly, the amount of mitigation required is very low both during the construction and operation phase and is likely to be limited to the careful control of the dredging works, including careful deposit of the material, and the preparation of a 'Biosecurity Plan' to ensure correct species control. With these measures in place all residual effects on marine ecology are considered to be insignificant.

## 10 Commercial and Recreational Navigation

### **What is there now?**

- 10.1 The Oikos Facility sits adjacent to the Yantlet channel within the Sea Reach section of the lower Thames. The principal responsibility for navigational safety and the safe operation of the harbour lies with the Port of London Harbour Master. The Port of London Authority is, amongst other things, the Statutory Harbour Authority for the Thames Estuary and Tidal River Thames.
- 10.2 The majority of vessel movements close to the Oikos site are within the Yantlet channel and are characterised by commercial vessels and port service craft. Recreational vessels pass in close proximity to the site, navigating away from the main shipping channels, whilst some high speed craft also pass the site, some of which are associated with nearby Holehaven Creek.
- 10.3 Along with Benfleet Creek, Holehaven Creek supports recreational activity. There is little fishing vessel activity in proximity to the site, or within the assessment study area.

### **What have we assessed?**

- 10.4 A study area was defined within the Thames Estuary from Southend Pier to the London Gateway port facility. Within this, we have assessed the impacts of the OMSSD project in respect of both commercial and recreation navigation both during construction and operation of the project. The effects have been assessed using expert opinion and by undertaking a

preliminary Navigational Risk Assessment (NRA). A final NRA will be provided as part of the OMSSD project ES and will be produced in consultation with the Port of London Authority as necessary.

### **What are the potential effects?**

- 10.5 Potential construction navigation effects include direct contact being made by construction or dredging craft with the Oikos jetties, collisions between construction or dredging craft and passing vessels, and collisions between construction or dredging craft and other vessels whilst navigating to or from the site. We have also assessed the potential for ‘swamping’ (filling with water) of construction craft by passing vessels.
- 10.6 Our assessment of potential operational effects upon navigation also includes the risk of collision due to the increase in vessel movements from the OMSSD, or from the increased dredging of the berths to maintain operations.
- 10.7 The potential effects of collisions with passing traffic, or with the jetties has also been assessed, as have the potential effects of operational spillages and of breaks in vessel moorings.

### **How will we control our effects?**

- 10.8 To ensure the potential effects are controlled, and reduced further where possible, a number of key navigation mitigation measures will be employed, including clear communication to inform mariners in the area and visiting the site, regular local weather forecasting, utilising safety boat(s), using direct lighting where required, establishing construction and operational contacts with the Port of London Authority, and utilising the Port of London Authority’s pilots where required.
- 10.9 Our likely effects, both during construction and when the OMSSD project is operational, upon navigation across the study area and in the vicinity of the site are considered to be either insignificant or of minor significance. With mitigation in place the effects are considered to be reduced to as low as reasonably practicable.

## **11 Traffic and Transport**

### **What is there now?**

- 11.1 The primary access to the Oikos Facility is via the main gate off Haven Road. The access currently directs heavy goods vehicles (HGVs) and other vehicles to a secure waiting area with security facilities within the facility. An existing, gated secondary / emergency site access is located to the north of the main gate by approximately 200m and also provides the exit for vehicles leaving the existing road loading facilities.
- 11.2 As shown on Figure 3, Haven Road links to the A130 to the north of Canvey via Roscommon

Way, a route which runs around the western edge of the built-up area. The A130 Canvey Road continues north eventually linking with the A13 at the Sadlers Farm junction. From the A13 access is gained to the wider strategic road network including the M25 some 20km to the west.

### **What did we assess?**

- 11.3 We assessed the increase in traffic movements predicted to occur as a result of the OMSSD project against the following areas of impact: severance; driver delay; pedestrian delay; pedestrian amenity; accidents and safety; and hazardous loads.

### **What are the potential effects?**

- 11.4 The OMSSD project proposes five additional road loading bays, which could be operational 24 hours a day, 7 days a week, 364 days per year. This could theoretically result in an additional 480 HGV movements per day. This level of activity has formed the basis of the preliminary assessment undertaken, even though in reality it is highly unlikely that all the new bays will be operating at this level. Staff numbers are proposed to increase by around 10 people. This equates to 7 car movements in and 7 car movements out per day. As a worst case, it is assumed around 50% of staff could arrive and leave during peak periods this equates to 3-4 movements during the peak period.
- 11.5 All HGV traffic will access the site via Haven Road, Roscommon Way and Canvey Way to gain access to the A13 / A130 at the Sadlers Farm roundabout and onto the wider network.
- 11.6 Traffic generated during the construction phase is envisaged to generate a peak flow of 160 HGV movements per day with a further 196 light vehicle movements generated.

### **How will we control our effects?**

- 11.7 Across all of the potential areas of impact, our assessment has confirmed that the operational traffic and transport effects of the OMSSD project will be either insignificant or of minor significance.
- 11.8 During the temporary construction period, daily construction traffic movements will be lower than operational traffic levels and so our construction traffic and related transport effects will be reduced from those set out above for the operational phase.
- 11.9 From the preliminary assessment we have undertaken, it is concluded that there will be no residual adverse effects on the flow of traffic and road safety as a result of the OMSSD project.

## 12 Air Quality

### What is there now?

- 12.1 The air quality environment at and around the OMSSD site is not characterised by any measured levels of pollutants that are a cause for concern for human health.
- 12.2 The main air pollutant measured in the local area is nitrogen dioxide. All measurements show that the amount of nitrogen dioxide in the area around the site is consistently below relevant target levels. Levels of particulate matter in the air are not measured locally indicating that there are no known concerns in the Borough regarding these.
- 12.3 Additionally, Castle Point Borough Council has not declared any Air Quality Management Areas (AQMAs). The neighbouring authorities of Rochford and Southend have declared AQMAs for exceedances of the annual mean nitrogen dioxide objective in Rayleigh and Southend-on-Sea. The Rayleigh AQMA boundary includes a small section of the A127 which could be used by OMSSD vehicles delivering fuel to Southend Airport.

### What have we assessed?

- 12.4 Our preliminary assessment has considered the Government's air quality standards and objectives for the protection of human health from the pollutant impacts of nitrogen dioxide, fine particles and sulphur dioxide. Air quality standards and objectives as applied to natural ecosystems have also been assessed, in particular to consider the impacts of nitrogen oxides, ammonia and sulphur dioxide and nutrient nitrogen and acid deposition fluxes. All of these objectives and sensitive human health and ecological receptors have been assessed against impacts during both construction and operation of the OMSSD project using recognised air quality modelling and verified against local monitoring sites where available.

### What are the potential effects?

- 12.5 During construction the main impacts are anticipated to be associated with dust and fine particles generated during earthworks and during demolition and construction, albeit these are largely expected to be experienced on the OMSSD project site. On-site vehicle emissions during construction are not expected to be of concern and impacts from road traffic during construction is expected to be less than those associated with operational road traffic.
- 12.6 When the OMSSD project is operational the main potential for impacts upon local air quality will be associated with emissions from vessels using their auxillary generators whilst berthed at the two jetties and from operational road traffic from the proposed additional road loading bays.

### How will we control our effects?

- 12.7 Additional controls will be put in place to ensure that the temporary dust effects arising during construction, demolition and earthworks are appropriately managed. On and off-site impacts from construction process dust will be minimised through the implementation of a Dust Management Plan.
- 12.8 All operational air quality effects upon human health receptors are judged to be insignificant. No specific controls for emissions have been identified as being necessary once the OMSSD project is fully operational.
- 12.9 With regards to the small section of the A127 that could be used for vehicles delivering fuel to Southend Airport, our preliminary assessment concluded that there are no locations at which relevant exposure to the annual mean objective measured in the Raleigh AQMA would occur.
- 12.10 The potential for significant operational air quality effects at sensitive designated habitats can be discounted at most nearby sites. For those closest to the traffic route to Sadlers Farm junction, changes in concentrations in nitrogen dioxide are limited to within several metres of the road. It is expected that there will be no adverse effect to the condition of habitats present nor will the integrity of the designated sites be compromised.

## 13 Greenhouse Gases and Climate Change

### What is there now?

- 13.1 Focussed primarily on the effects of greenhouse gas emissions associated with the OMSSD, we have identified the relevant emissions from activities currently on site, along with those associated with the consumption of electricity and those associated with activities linked to the Oikos site.
- 13.2 Greenhouse Gases (GHGs) are defined in terms of their Global Warming Potential (GWP), which is expressed in units of carbon dioxide over 100 years. The source of GHGs is defined by the GHG Protocol – Scope 1 are direct emissions and can be controlled by Oikos (such as refrigerant gas on site); Scope 2 are indirect emissions as a consequence of activities on site (such as electricity consumption); and Scope 3 are emissions which Oikos can influence but not control (such as emissions from shipping movements).
- 13.3 From this we have identified that the current Oikos Facility gives rise to direct and indirect greenhouse gas emissions from the facility equating to 92,496 tonnes carbon dioxide equivalent, the vast majority of which - 99.4% - fall with the Scope 3 category.

### **What did we assess?**

- 13.4 With current greenhouse gas emissions being derived from refrigerant gas, electricity consumption, vessels in transit to the facility (c98% of all emissions), fuel export by road, travel by road to and from the site and water consumption, we then considered how these emissions would change over time once the OMSSD was operational.
- 13.5 Focussing primarily on the effects of greenhouse gas (GHG) emissions associated with the construction and operational phases of the OMSSD project, we identified and considered seven key GHGs and their ability to produce carbon dioxide.
- 13.6 We also assessed the same emissions that could be emitted during construction based on our knowledge of the project to date, to enable us to establish the degree of impact that might arise, and any actions that would need to be taken.

### **What are the potential effects?**

- 13.7 For our assessment of climate change and greenhouse gasses the identification of effects is not levied as specific receptors but instead against national and local policy and performance in terms of emissions and their relationship with national and international targets to decarbonise.
- 13.8 In this regard the OMSSD project must be viewed in its context as port development, and it is important that the guidance and policy set out in the Government's National Policy Statement for Ports is taken into account. This advises on how different greenhouse gas emissions should be taken into account and the weight to be afforded to them.
- 13.9 Whilst it is recognised that projects will require assessment of or may increase greenhouse gas emissions, for the OMSSD project it is necessary to balance any increase in emissions against what will occur as a result of Government policy generally.
- 13.10 Notwithstanding the provisions of Government policy, we recognise that the OMSSD project will, over its lifetime, give rise to an increase in the emissions of greenhouse gases,

### **How will we control our effects?**

- 13.11 Oikos is committed to adopting best practice mitigation to reduce and offset GHG emissions that it controls and to promoting policies that can reduce emissions it can influence. Oikos is developing a carbon roadmap for the OMSSD project which will set targets for GHG emissions reductions and measures that will be explored to achieve these targets, by set dates in the future.

## 14 Noise and Vibration

### What is there now?

- 14.1 The existing Oikos Facility operates on a 24-hour basis, 365 days of the year. Accordingly, it's operations give rise to a number of sources of noise including the arrival, unloading and departure of vessels and road tankers, on site operations noise from the fuel storage compounds and ancillary equipment, and staff movements to, from and within the site.
- 14.2 The site interacts with a range of differing land uses around its site boundary, including residential and amenity uses, agricultural activities, nature conservation habitat, industrial facilities, and the estuarine environment to the south.

### What have we assessed?

- 14.3 We have assessed the construction and operational noise and vibration impacts of the OMSSD project upon nearby representative residential properties located at Haven Quays, on Haven Road and on Hawkesbury Road. Our preliminary assessment has also considered the impacts of the project upon Brickhouse Farm (a commercial use) and the Concord Rangers Club House, a community sports and amenity receptor.
- 14.4 Consideration has also been given to the noise and vibration impacts during both construction and operation phases on ecological receptors – including the Holehaven Creek SSSI and the undesignated foreshore area immediately to the south of the Oikos Facility over which the operational jetties of the facility cross.

### What are the potential effects?

- 14.5 Potential noise and vibration effects can be summarised as arising from:
- site preparation during construction;
  - construction traffic noise;
  - construction plant noise and vibration effects to residential and ecological receptors;
  - construction piling and capital dredge noise and vibration effects;
  - operational noise effects on local residents and businesses as a result of traffic;
  - increases to operational ship movements including associated unloading; and
  - operational plant noise from the proposed development upon existing noise sensitive receptors, including any ecological receptors.
- 14.6 Our preliminary assessment has shown that, without mitigation, there is some potential for some significant noise and vibration effects to be experienced by those residential properties closest to the Oikos site at Haven Quays when certain construction activities take place in close proximity to them. Once operational some additional noise may be noticeable from additional road tanker movements.



## How will we control our effects?

- 14.7 During construction best practice means will be used to minimise the noise levels.
- 14.8 Construction plant and equipment will be kept in good working order and maintained in line with good practice on construction sites. Localised hoarding or shielding is proposed around piling equipment when in operation in proximity to noise sensitive receptors, along with a solid site hoarding / barrier at appropriate locations to further minimise noise at Haven Quays during construction. These measures, along with regular liaison with residents will also be detailed within a Construction Environment Management Plan (CEMP).
- 14.9 There is also the potential that a phasing plan for the construction works, which have yet to be determined in detail, will also contribute to a reduction in construction noise disturbance. These measures will reduce the resulting noise effects on the Haven Quays area. However, it is recognised that even with the current identified mitigation, there remains, at this preliminary assessment stage, the prospect of some limited significant noise effects at Haven Quays from specific activities occurring in close proximity to those residential properties.
- 14.10 No significant noise effects are predicted during the operational phase of the OMSSD project.

# 15 Ground Conditions

## What is there now?

- 15.1 The Oikos Facility has a long history of oil storage originating in the 1930s, before which it was largely in rural use. The facilities on site were expanded in the 1960s and the 1970s, whilst in the 1980s solvent products were stored in the south-west of the Oikos Facility (the western extent of the OMSSD project area). The facility has also been used to store tallow. Refurbishment and redevelopment of tank compounds has been undertaken progressively since 2010, largely in the northern area of the site.
- 15.2 All of these progressive changes have influenced the ground conditions on site and, therefore, the environment in which the OMSSD is to be constructed and operated.

## What have we assessed?

- 15.3 Our preliminary ground conditions assessment has considered the implications of the OMSSD project for human health in terms of exposure to contaminated soils during construction, contaminated construction dust and exposure to ground vapour. These risks have also been assessed for the operational OMSSD.
- 15.4 We have also undertaken a preliminary assessment of the potential impacts of the project upon groundwater and whether the OMSSD would cause contamination of any ecological

receptors.

### **What are the potential effects?**

- 15.5 Through our preliminary assessment we have identified that there is the potential for minor impacts to people working on site and nearby during the construction phase through exposure to contaminated soils and dust. During the operational phase we have identified that there may be a risk of vapour impacts to occupiers of buildings on the Oikos site.
- 15.6 We have also identified that, in the absence of mitigation, there is the potential for the piling needed to support the new tank bases and bund walls to create a pathway for any shallow level contamination to migrate further into the ground potentially impacting upon groundwater
- 15.7 No impacts on ecological features as a result of ground conditions have been identified, whilst the removal of contaminated material from the site as part of the site preparation stage is considered to be beneficial as this will reduce associated risks.

### **How will we control our effects?**

- 15.8 To bring our effects to their lowest level we will ensure that construction and commercial site operatives use correct personal protective equipment (PPE) suitable for all site areas. Use of PPE and the adoption of dust protection and mitigation measures will ensure that impacts from construction dust are negligible.
- 15.9 During construction appropriate methods of piling will be adopted that reduce the risks to groundwater to acceptable levels whilst methods of construction design will be employed for the workshop and welfare buildings to ensure no risks arise from vapour migration. With mitigation in place no significant effects are considered likely as a result of ground conditions.

## **16 Flood Risk and Surface Water Drainage**

### **What is there now?**

- 16.1 The nearest surface water features to the site of the OMSSD project are the River Thames, immediately south, Sluice Dyke and Holehaven Creek to the west, and a network of drains to the east which discharge into Thorney Creek and then the Thames.
- 16.2 The site is located within Flood Zone 3, although with the benefit of the adjacent flood defence wall – a defence that is constructed around the whole of Canvey Island - the flood risk at the facility and to surrounding land is considered to be low.
- 16.3 Surface water runoff from the site, currently collected via a network of above and below

ground drainage assets. Rainwater is retained within the various tank compounds and is only manually drained into the wider site network following a visual check of the retained water for the presence of any product from the tanks. The site drainage system is routed through an interceptor and oil recovery system prior to its discharge into the River Thames.

### **What have we assessed?**

- 16.4 We have looked at the effects of flooding from the River Thames, both directly and indirectly if floodwater were to enter the site from inland and our assessment has examined the potential impacts of climate change upon the flood resilience of the site and has also considered the role played by flood defences around Canvey island.
- 16.5 We have also considered the surface water management regime on site, and the proposals that will be put in place as part of the OMSSD to continue to ensure surface water is appropriately controlled once the project is operational.

### **What are the potential effects?**

- 16.6 As a result of appropriate design – including taking account of the likely future need to raise the adjacent flood defence – the development of OMSSD related infrastructure will not have an adverse effect upon the flood defences at the site, including the flood defence wall.
- 16.7 If the surface water drainage network for the site was not appropriately upgraded to serve the new proposals, this could result in a change to surface water flood risks within the site. However, surface water infrastructure will be upgraded appropriately.
- 16.8 There is a potential that the regular discharge of surface water runoff to the River Thames could present a pathway for the release of pollutants, including silt in surface waters and accidental spillages of contaminating substances.

### **How will we control our effects?**

- 16.9 All OMSSD infrastructure into the facility will be constructed to enable the flood defence wall on the top of the embankment to be raised as necessary in the future. In addition, appropriate surface water drainage infrastructure will be constructed which will reflect the recently upgraded drainage that exists across other parts of the site.
- 16.10 As is the case with existing infrastructure on site, the OMSSD project infrastructure is being designed so that it can be shut down safely and remotely in the event of a flood such that no release of product would occur. The bunded compounds containing the storage tanks will provide protection in this regard. The existing site emergency flood plan will also be maintained and updated as necessary.
- 16.11 With appropriate design interventions and mitigation in place, residual flooding and surface water drainage effects of the OMSSD project will be no greater than of minor significance.

# 17 Landscape and Visual

## What is there now?

- 17.1 The existing Oikos Facility has been used for marine-fed fuel and associated product storage since the 1930s. Its presence within the landscape is, therefore, also long-established and whilst progressive changes have taken place on site, these have retained the same broad function and appearance throughout its use. The facility does not lie within a designated landscape at a national, regional or local level, nor does it form part of the setting to a national or regional landscape designation.

## What have we assessed?

- 17.2 Our preliminary assessment considered the likely environmental impacts of the OMSSD upon regional / district and local level landscape character; topography, land use and vegetation; the historic and cultural landscape, and changes to the character and amenity of the range of visual receptors during both the construction and operational phases of the project.
- 17.3 To carry out our assessment we have examined these impacts in a study area expanding to a radius 8km from the centre of the OMSSD project site, and have taken account of landscape designations, landscape values and policies within that area. Key viewpoints of the OMSSD project site were selected in discussion with the landscape consultant to Essex County Council to ensure a wide representation of views for the assessment. This included consideration of residential receptors, public accesses and rights of way, visitor attractions and amenities, areas of open space and views from the River Thames Estuary.

## What are the potential effects?

- 17.4 As with the majority of development, moderate adverse effects are likely to occur at those receptors within the close proximity of the OMSSD project site. However, the proposed new infrastructure as part of the OMSSD project site will be perceived as an extension to the existing operational facility and as replacement for the redundant storage tanks and infrastructure on the OMSSD project site.
- 17.5 Partial and distant views of the OMSSD project site will occur from the distance receptors, including during the construction phases. However, with the additional infrastructure on the OMSSD project site, the overall OMSSD project site will continue to form a small part of the wider coastal panorama.
- 17.6 As a result, the impacts of the OMSSD upon all levels of landscape character and value are considered to give rise to negligible effects, whilst effects associated with residential receptors and users of rights of way and open space are judged to be of moderate adverse significance at their most severe, but in most instances negligible.

### **How will we control our effects?**

- 17.7 Due to the very low level of the impacts from the OMSSD upon landscape and visual receptors both during construction and operation best practice measures will be used to ensure any visual impacts are appropriately controlled.
- 17.8 New planting is proposed along the western boundary of the OMSSD project site, providing visual interest to this part of the Oikos Facility from this stretch of Haven Road.

## **18 Lighting**

### **What is there now?**

- 18.1 Operating 24 hours a day/seven days a week and 364 days per year, vessels can arrive at either of the operational jetties at the current Oikos Facility at any time of the day or night. All areas of the operational terminal are lit, with security lighting around the boundary.
- 18.2 Existing lighting is designed to be energy efficient, low maintenance and to provide the appropriate level of lighting for each area according to operational, safety, security and navigational requirements.
- 18.3 Navigational lighting is a key necessity for the marine elements of the Oikos Facility to assist with the safe navigation of vessels on the River Thames and by its nature must be visible for a long distance. Navigational lighting therefore remains operational at all times as specified by the Harbour Master

### **What have we assessed?**

- 18.4 The location of the existing Oikos Facility on the north bank of the River Thames means that it can be viewed across a wide area, including the south bank of the River Thames. Locally, the nearest residential areas lie adjacent to the south west boundary of the Oikos Facility, although there are views of the Oikos Facility from established residential areas of Canvey Island to the north and north east across grazing land east of Haven Road.
- 18.5 Other receptors that have been taken into account include users of the adjacent footpath along the sea wall, users of footpaths located elsewhere and users of facilities within the locality.
- 18.6 Our preliminary lighting assessment, therefore, considered a study area of 8 kilometres radius from the application site. By extending the study area to 8km north of the application site, the potential for glare from light sources visible from up to 8km could be suitably assessed in order to inform a lighting strategy for the OMSSD project.

## What are the potential effects?

- 18.7 Glare from inappropriately orientated flood lighting associated with the construction phase has limited potential to affect river navigation during winter months, when flood lighting of construction operations is likely to be required for short durations after sunset. Measures within the lighting strategy will seek to minimise the significance of the effect of lighting on navigation.
- 18.8 It is likely that isolated instances of skyglow over the construction site would occur for short periods of time where tasks require specific lighting levels for safety. This would mainly occur between sunset and the end of the construction day.
- 18.9 In the event that construction lighting is required for safety during some preparation and construction tasks, the luminaires will be focussed into the site to limit the possibility of obtrusive light occurring and use focused task lighting as required by the construction task being undertaken. Temporary lighting in use within the construction phase will be required for the purposes of health and safety of the construction workforce, but all measures will be implemented through the lighting strategy to minimise its potential significance.
- 18.10 Due to compliance with the applicable British Standards for workplace lighting design, the existing lighting levels associated with the operation of the Oikos Facility would be described as medium to high brightness. This conclusion would likely be the same with the OMSSD project.

## How will we control our effects?

- 18.11 Although lighting is a necessary component of the OMSSD project, a lighting strategy is being developed that seeks to minimise the potential impacts by ensuring that the lighting system is deployed sensitively. It is likely that any new lighting will be characteristically similar to existing lighting in use across the operational Oikos Facility as any new lighting for the OMSSD project will serve a similar function to existing lighting.
- 18.12 A principle of 'lighting off unless required' will be deployed within the lighting strategy to ensure that luminaires with the highest potential to give rise to obtrusive light are switched off when not required for site operational safety. Additionally, luminaires will be orientated to ensure that the main beam is focused towards the task area and where possible, away from sensitive receptors to reduce the potential of glare.
- 18.13 Where there is limited potential for some temporary construction lighting to be required during the hours of darkness, which would require lighting for safety, the lighting strategy focuses on reducing the potential for construction lighting to be obtrusive in nature.

# 19 Historic Environment

## What is there now?

- 19.1 Canvey Island was predominantly rural until the beginning of the 20<sup>th</sup> century, when the increasing industrial development of the area led to the transformation of most of the landscape from open fields into residential areas and industrial estates.
- 19.2 Prior to this, during the Victorian period, Canvey was promoted as a seaside resort with the construction of several amenities for the public's enjoyment. Amongst these there was the Lobster Smack Inn, a public house and inn adjacent to the Oikos site, and Kynoch Hotel, the latter being the only feature being formerly located within the Oikos Facility and OMSSD project site.
- 19.3 Evidence of some war damage can be seen through examination of the site's records, yet the main features of the Oikos site are the result of the development and redevelopment of the site to accommodate the existing fuel storage infrastructure that is present today.
- 19.4 From previous borehole investigations on the OMSSD project site, including the area of Jetty 2, the geology mostly comprises very thick layers of alluvium and sands. Little in the way of archaeological remains have been recorded at the site, although there is the potential for buried remains from the medieval and post medieval periods.
- 19.5 Nearby assets of heritage significance include a row of Grade II Listed former coast guard cottages and the Grade II Listed Lobster Smack Inn, all located on Haven Road to the west of the existing Oikos Facility.

## What did we assess?

- 19.6 The preliminary historic environment assessment has considered the relationship between the OMSSD project site within the setting of identified nearby features of historical interest. The settings assessment used a minimum of a 5km buffer from the OMSSD project site.
- 19.7 Our preliminary assessment also considered the potential relationship between the proposed development and buried archaeological assets and a study area of 1km from the boundaries of the OMSSD project site provided the necessary context for understanding archaeological potential and heritage significance in respect of the OMSSD project and immediate surroundings.

## What are the potential effects?

- 19.8 Although there has been little evidence to date of features or assets of archaeological interest below ground within the site the potential for such features, and therefore the impact of the OMSSD project and the potential for environmental effects cannot be fully discounted.
- 19.9 There has been significant industrial development within the OMSSD project site for over 80

years and the areas where built form has been recorded (either extant or since demolished) may have somewhat truncated the top levels of deposits. Nonetheless, the OMSSD project site is located within an area of depositional environments with known potential for the preservation of archaeological remains at deeper levels, that through tidal and seasonal flooding may have become buried under several metres of alluvium. Thus, the hypothesis of survival of archaeological remains at deeper levels cannot be discarded.

- 19.10 Above ground, with the features of the site all representing progressive development over the last 100 years or so the degree of on-site impact is considered to be negligible, whilst the OMSSD's impacts on off-site heritage assets including adjacent listed buildings is not considered to give rise to any effects of significance.

### **How will we control our effects?**

- 19.11 To ensure that the potential for archaeological deposits within the site is kept under review further works will be implemented as part of the OMSSD project to establish if any effects might arise and to identify proportionate mitigation where those effects require it.
- 19.12 The preliminary settings assessment for identified off-site heritage assets has established that likely effects from the project upon the setting and conservation of those assets will not be significant and so no mitigation is proposed.

## **20 Socio-Economic**

### **What is there now?**

- 20.1 The existing Oikos Facility occupies a strategic Thames-side location within the South East of England and is a critical piece of national infrastructure making a significant contribution to a reliable, cost effective and resilient UK fuel distribution system.
- 20.2 Within Chapter 20 of the main PEIR document a detailed description of the existing socio-economic environment is provided. This description provides information on demography, deprivation, economic activity and employment, workforce characteristics economic structure and health and wellbeing.
- 20.3 The Oikos Facility itself is an important socio-economic receptor. The facility currently generates 37 full time equivalent jobs and makes a further socio economic contribution via contractor and supply chain linkages. There are limited other private assets and community resources within proximity of the Oikos Facility.

### **What have we assessed?**

- 20.4 Having regard to advice provided within the National Policy Statement for Ports, our preliminary assessment considered the potential socio-economic effects of the OMSSD project during both its construction and operational on or as a result of:



- jobs and training opportunities;
- local services and infrastructure;
- the impact of workers during construction phases;
- tourism;
- existing businesses, private assets and community receptors, and
- the achievement of relevant policy objectives.

### **What are the potential effects?**

- 20.5 During construction the OMSSD would give rise to temporary beneficial employment opportunities through construction jobs, apprenticeships and training, and through the use of local businesses and services. It is not anticipated that during the construction phase the project will have any significant adverse effect upon any of the remaining areas considered.
- 20.6 Once the OMSSD becomes operational an additional 10 jobs will be created on site, leading to a minor direct beneficial effect. It is not anticipated that the OMSSD – once operational - will give rise to any negative social or economic effects. The overall effect of the OMSSD project on the achievement of relevant socio-economic and related policy objectives is considered to be beneficial and of major significance.

### **How will we control our effects?**

- 20.7 Although specific mitigation measures are not considered necessary, during the construction phase Oikos will seek to:
- Encourage local recruitment where possible.
  - Ensure that where possible visiting construction workers are accommodated in the local area during their period of employment on the proposals supporting the local economy.
  - Encourage local supply linkages where possible.

## **21 Safety**

### **What is there now?**

- 21.1 The existing Oikos Facility is an 'Upper Tier establishment' regulated by the Control of Major Accident Hazard Regulations 2015 (as amended). As an Upper Tier establishment, the Oikos facility is subject to comprehensive and stringent regulatory safety controls which are overseen by the Health and Safety Executive and the Environment Agency acting in their joint capacity as the Competent Authority.

- 21.2 In addition, the Oikos Facility has to operate within the terms of an existing Hazardous Substances Consent which allows the site to store different fuel related products.

### **What have we assessed?**

- 21.3 Our preliminary assessment has considered and assessed a comprehensive list of safety risks that could potentially arise during site preparation, construction and the operational phases of the project. These include the risks associated with undertaking construction activity at an operational site and the risk of failure of on-site infrastructure or an on-site process or procedure,

### **What are the potential effects?**

- 21.4 In considering these potential risks and consequential effects we have also taken fully into account the in-built mitigation that already exists and the additional mitigation which will be provided – much of which derives from the exacting requirements of the COMAH Regulations with which total compliance is required by law.
- 21.5 By virtue of the processes and procedures set out under the COMAH legislation Oikos must undertake a full consequence analysis and produce an addendum to its existing site safety report which will document all of the potential safety and environment major accident hazards of relevance to the project and the site, the design standards that have been applied to the project, the potential risk of hazards becoming an incident, the potential consequences of such an incident, the mitigation measures put in place to prevent such an incident and finally a demonstration that such a risk has been reduced to an acceptable level.
- 21.6 The Safety Report Addendum will be provided to the Competent Authority for assessment whom, if they have outstanding concerns have the legal power to delay or even stop the commissioning of the project.

### **How will we control our effects?**

- 21.7 The safety risks of the OMSSD project will be controlled through the inherent in built mitigation referenced above. With such mitigation in place, any risks associated with the development and operation of the OMSSD project will be reduced to the required level, known as being “as low as reasonably practicable”.

## **22 Cumulative and In-Combination Effects**

- 22.1 Cumulative effects refers 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.

- 22.2 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

### **What are we assessing?**

- 22.3 The cumulative effects assessment (CEA) for the OMSSD is currently ongoing and is intended to be examined and added to as the proposals are assessed for the purposes of the project Environmental Statement, which the CEA will then become part of. The 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 To carry out the CEA we have identified a short list of developments that includes only those other proposed developments considered to potentially give rise to significant cumulative effects. As part of this we have considered key criteria to identify those developments most likely to lead to significant cumulative effects against which the OMSSD should be assessed.
- 22.5 At present work continues to identify as much detailed information as possible about the short listed developments to enable the assessment of cumulative effects to be carried out and reported.
- 22.6 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.
- 22.7 For the purposes of the PEIR document, a review of the preliminary topic assessment chapters 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.

### **When will the outcomes of the CEA and in-combination assessment be known?**

- 22.8 As we are currently at the preliminary stages of our assessment work, we do not currently know the outcomes of either the CEA or the in-combination assessment, although we do know on which cumulative developments and in-combination topics our assessment work needs to focus.
- 22.9 The outcomes of this work will continue to be informed by the progress that will be made to complete the OMSSD Environmental Statement and its associated assessments and will be finalised as part of completing and submitting our application for the OMSSD.