



Marine Management Organisation

Marine Management Organisation response to Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11 Scoping consultation and notification of the Applicant’s contact details and duty to make available information to the Applicant if requested

Title: Oikos Marine & South Side Development

Applicant: Adams Hendry Consulting Ltd

PINS Reference: TR030004-000005

MMO Reference: DCO/2020/00001

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1 Proposal

Oikos Marine & South Side Development.

1.1 Project Background

Oikos Storage Ltd (Oikos) proposes to undertake marine works and develop additional storage capacity at its existing liquid bulk harbour facility on Canvey Island in Essex. The project, known as the Oikos Marine and South Side Development (OMSSD) project, is planned to provide additional marine loading arms and infrastructure on two of the existing operational jetties, Jetty 1 and Jetty 2, at the Oikos Facility and include a capital dredge of the berth pocket to service Jetty 2. The OMSSD project will also include the redevelopment of the south side of the Oikos Facility to provide new storage tanks, providing an additional capacity of around 328,000m³ of storage, and associated operational infrastructure.

2 Scoping Opinion

The MMO's role in Nationally Significant Infrastructure Projects

The MMO was vested under the Marine and Coastal Access Act, 2009 (the 2009 Act) to make a contribution to sustainable development in the marine area and to promote clean, healthy, safe, productive and biologically diverse oceans and seas. The responsibilities of the MMO include the licensing of construction works, deposits and removals in English inshore and offshore waters and Northern Ireland offshore waters by way of a marine licence¹. Inshore waters include any area which is submerged at mean high water spring (MHWS) tide. They also include the waters of every estuary, river or channel where the tide flows at MHWS tide. Waters in areas which are closed permanently or intermittently by a lock or other artificial means against the regular action of the tide are included, where seawater flows into or out from the area.

In the case of NSIPs, the 2008 Act enables Development Consent Orders (DCO) for projects which affect the marine environment to include provisions which deem marine licences².

As a statutory consultee under the 2008 Act, the MMO advises developers during pre-application on those aspects of a project that may have an impact on the marine area or those who use it. In addition to considering the impacts of any construction, deposit or removal within the marine area, this includes assessing any risks to human health, other legitimate uses of the sea and any potential impacts on the marine environment from terrestrial works.

1 Under Part 4 of the 2009 Act
2 Section 149A of the 2008 Act

Where a marine licence is deemed within a DCO, the MMO is the delivery body responsible for post-consent monitoring, variation, enforcement and revocation of provisions relating to the marine environment. As such, the MMO has a keen interest in ensuring that provisions drafted in a deemed marine licence (DML) enable the MMO to fulfil these obligations.

Further information on licensable activities can be found on the MMO's website³.

Further information on the interaction between the PINs and the MMO can be found in our joint advice note⁴.

MMO comments

The MMO has reviewed the Oikos Marine & South Side Development Environmental Statement – Scoping Report (April 2020) in consultation with our scientific advisors at Centre for Environment, Fisheries and Aquaculture Science (Cefas). Please find the MMO's comments provided below:

2.1 Benthic Ecology

- 2.1.1 The information provided in the scoping report clearly presents the scope of the project. As described, the proposed contents (sections) of the Environmental Statement (ES) and the methods used to assess potential impacts to benthic ecology are all considered to be appropriate.
- 2.1.2 The potential direct and indirect impacts of the project on benthic ecology receptors appear relevant and complete.
- 2.1.3 With regards to the dredged material disposal options presented, if water injection dredging is to be adopted the impacts of this should be considered in the ES. The sediment plume and changes in water quality associated with this form of dredging are likely to be greater than those of the other two options. Similarly, if marine disposal of material is required (i.e., trailer suction hopper or backhoe dredging is implemented), the potential impacts to benthic ecology of these should be assessed in the ES.
- 2.1.4 Although mitigation measures are not detailed at this scoping stage (such measures will be specifically identified during the assessment process; Section 4.37), it is stated that relevant measures will be considered when further details regarding the approaches adopted and potential impacts are better known. A number of example 'in built' measures are provided and these are all relevant and suitable.

³ <https://www.gov.uk/planning-development/marine-licences>

⁴ <http://infrastructure.planningportal.gov.uk/wp-content/uploads/2013/04/Advice-note-11-v2.pdf>

2.1.5 The potential cumulative and inter-related impacts and effects on the physical and biological environment are reviewed in Section 21. The potential for such impacts is summarised in Table 21.1 wherein a scoping assessment of the relevant applications is presented. It is noted that at this time, there do not appear to be any relevant applications that have the potential to impact benthic ecology receptors in the area and, thus, the MMO cannot comment regarding the suitability of this scoping assessment.

2.2 Coastal Processes

- 2.2.1 The MMO have no concerns regarding the applicant's approach to coastal processes. The scoping is detailed and the project development relevance of the environmental detail is clearly presented. The applicant states the intention to apply 'combined analytical methods' (paragraph 7.11), all of which are suitable for this assessment.
- 2.2.2 The scoping identifies only dredging as a source of potential significant impact i.e. no other construction works are assumed to require assessment. The MMO accept that this may be the case. However, the report does not describe why the other elements are scoped out – MMO would therefore assume that no barges are to be used for works on the jetty. On the other hand, if works from vessels are expected, and while MMO do not consider this a major omission (as berthed vessels are within the normal range of activities at a working dock), then the report should discuss what effects the other marine construction works would have, in order to clarify that they are insignificant. An additional short paragraph after paragraph 7.1 should suffice, unless (for example) jack-up barges are required.
- 2.2.3 The MMO also note that upgraded site drainage is mentioned amongst the works. The applicant will need to confirm that this does not require any drainage or works within the estuary.
- 2.2.4 Other than those noted in points 2.2.2 and 2.2.3, the applicant appears to have identified the major impacts to be assessed. Paragraph 7.80 (p86) lists impacts, including marginal changes in hydrodynamics and bedload sedimentation pathways, as well as more significant suspended sediment concentration impacts, due to works at both the development location and at the (unknown) potential disposal site. The scoping also notes the relative scales of potential impact from different dredge methods, and in the context of wider operational (mostly Water Injection) dredging of Thames estuary. It also notes that later maintenance dredging would be required and identifies various sources of cumulative impacts.

- 2.2.5 The scoping is detailed and the MMO have identified no major evidence gaps regarding coastal processes. Suggested data sources (Table 7.1, p70) are timely and extensive, including recent modelling by the relevant contractor. It is noted that the Geomorphological Review cited is relatively old (2004) but the MMO do not consider it likely that an update would be required for the scale of impact which is expected for this development.
- 2.2.6 The scoping report already provides some discussion of primary mitigation to be considered (such as selecting the dredge method and timing of dredge for lowest impact). The report also clearly indicates that further mitigation may be considered, depending on the impacts of the methods ultimately used – the procedure outlined for identifying and assessing any such required mitigation is suitable. The MMO have no additional measures to propose at this stage.
- 2.2.7 The scoping report identifies the need to assess all impacts (and has identified suitable receptors to capture these), including ongoing (maintenance) impacts and has highlighted awareness of various sources of cumulative impacts. Given the detailed description of the local environment and the clear signposting of project relevance noted in paragraph 9 of this minute, the MMO consider this level of specification adequate for the scoping stage.

2.3 Fish Ecology and Fisheries

- 2.3.1 The characterisation of the environment for fish is brief but recognises that the Thames Estuary is an important migratory route for several species of conservation importance, namely; Atlantic salmon, smelt, allis shad, twaite shad, European eel, river lamprey and sea lamprey.
- 2.3.2 The nursery grounds of commercially important species have been correctly identified including herring, plaice, sole, thornback ray, whiting, sprat, and lemon sole. The report does not acknowledge that the tidal Thames is recognised as an important nursery ground for European seabass (*Dicentrarchus labrax*). Seabass are a slow growing species that have suffered a long-term decline in population due to overfishing. As a result of declining stocks, seabass are now under new protection measures which include the waters in and around Kent and Essex (Kent & Essex IFCA Website). These have been introduced as scientific advice has identified the need to drastically reduce catches of this species following an increase in the fishing pressure and a reduction in reproduction. The MMO would expect the ES to consider seabass in the context of the current special measures in place i.e. whether dredging activity is likely to disturb bass nursery grounds or juvenile fish.

2.3.3 Spawning grounds for fish within the vicinity of the Oikos site have not been identified and the MMO would expect these to be identified in the ES, particularly as the outer Thames estuary is an important, high intensity spawning ground for Dover sole (Ellis *et al.* 2012), with sole spawning between April and June in shallow inshore waters close to sandbanks. This includes areas of the inner estuary, with high concentrations of sole eggs in the inner Thames Estuary demonstrated by Riley, D., (1974) (from Blaxter J.H.S., 1974). The Thames estuary is considered of national and international importance to the North Sea sole stock. Additionally, the Thames estuary is also one of the more important sole fisheries, especially for the UK fleet.

2.3.4 The seasonal variations in fish species abundance is also briefly acknowledged. Again, the MMO would expect a more detailed discussion on this to be included within the ES, including details of the spawning seasons for specific fish species and migratory seasons for species of conservation importance.

2.3.5 The supporting publications referenced within the scoping report are appropriate for a desk-based assessment. However, the ES may benefit from the use of some additional reference sources which are listed below.

- ZSL (2016) provides useful guidance for planners on the sensitive areas and seasons of Thames fish which may help inform decisions on the timing operations. The guidance focuses on fish conservation from Teddington Lock to Gravesend.
- The Environment Agency (EA) undertakes fisheries surveys in coastal and transitional waters including the Thames Estuary which may provide additional regional fisheries data. Data from these surveys can be downloaded from; <https://data.gov.uk/dataset/41308817-191b-459d-aa39-788f74c76623/trac-fish-counts-for-all-species-for-all-estuaries-and-all-years>
- The Cefas young fish survey (<http://data.cefas.co.uk/#/Search/1/YFS>) provides indices of abundance of small demersal fish for several areas around the UK coastline including the Thames Estuary (Figure 1). The survey particularly targeted juvenile 0-group and 1-group plaice and sole, prior to their recruitment to the fishery and the survey time series concluded in 2010. This may provide useful information for juvenile fish in the vicinity of the proposed development. The historic survey series data is reviewed in both Rogers *et al.*, (1998) and within a research project that analysed the data and produced a report in 2011; '*Trends in the inshore marine community of the east and south UK coast: 1970s to present*'. The final report can be downloaded from http://randd.defra.gov.uk/Document.aspx?Document=MF1107_sid5_2106_11_final.pdf and project information and relative abundance maps are available from <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16741>

- Between 2006 and 2013 Zoological Society of London (ZSL) undertook weekly monitoring of fish species passing through Tilbury Power Station to gain a better understanding of fish species using the Thames Estuary. The work was carried out in collaboration with Tilbury Power Station and the Environment Agency. Data from this monitoring may be available through ZSL.

2.3.6 Potential impacts and effects on fish arising from dredging activity have been correctly identified as follows;

- Physical removal, disturbance and smothering of benthic and fish habitat and foraging grounds as a result of capital dredging and/or disposal activities.
- Changes in water and sediment quality through elevated suspended sediment concentrations (SSC), release of toxic contaminants bound in sediments, and/or accidental oil, fuel or chemical spills during capital dredging and/or disposal activities resulting in effects on benthic habitats and species and fish.
- Underwater noise disturbance of benthic invertebrates, fish and marine mammals as a result of capital dredging and vessel movements.
- Entrainment of benthic species and small/juvenile fish into the dredger head may also require consideration as a potential impact, depending on the method of dredging selected.

2.3.7 The MMO recognise that at this stage, the final dredge and disposal programme/s have not yet been determined, therefore the timing and duration of the work, and the extent of the areas affected by the dredge plume and potential disposal are unclear. For the ES, the applicant should consider the timing of dredge and disposal activities in relation to the sensitive spawning and migration periods of tidal Thames fish in order to determine the likelihood of significant impacts to fish and determine whether additional mitigation measures are required.

2.3.8 At this stage it is not possible to determine whether specific mitigation measures are required for fish because the dredging method has not yet been decided and the potential for offshore disposal is unknown.

2.3.9 The proposed approach for assessing potential cumulative and inter-related impacts for EIA seems appropriate and Table 21.1 presents a list of developments in proximity to Oikos that have been scoped in/out of further assessment. The scoping report acknowledges the potential for cumulative and inter-related impacts and effects on marine ecology receptors and these will be considered as part of the ES. However, as per point 23, the significance of impacts and effects are likely to depend on the method of dredging used and the need for offshore disposal.

2.4 Shellfish

- 2.4.1 Whilst the characterisation of the environment for shellfish is brief, the MMO consider this reflective of the level of shellfish activity near to the development. To the nearby port of Canvey Island, MMO data show squid to be the only shellfish captured in 2019, worth £101.48 at first sale and with a live weight of 0.0137 tonnes. Landings to other ports in close proximity (Great Wakering and Southend-On-Sea) of Canvey Island showed no records of shellfish in 2019.
- 2.4.2 Given the lack of shellfish landed in the area, it is assumed that shellfish are not abundant in the local area. Therefore, the MMO do not consider that further impacts need to be identified and assessed.
- 2.4.3 The proposed approach for assessing potential cumulative and inter-related impacts in the ES seems appropriate and Table 21.1 presents a list of developments in proximity to Oikos that have been scoped in/out of further assessment. The scoping report acknowledges the potential for cumulative and inter-related impacts and effects on marine ecology receptors and these will be considered as part of the ES.

2.5 Underwater Noise

- 2.5.1 In general, the approach provided by the applicant should be sufficient to fully identify and assess the potential impacts associated with underwater noise.
- 2.5.2 Based on the description of the proposed works (as detailed in the above scoping report), the primary noise-generating activities that may have the potential to affect marine invertebrates, fish and marine mammals within the vicinity (e.g. River Thames) are the capital dredging works at Jetty 2. It is noted that at the present time, the method of dredging has not been finalised, however, it will be either water injection dredging (WID), trailer suction hopper dredging (TSHD) or backhoe dredging.
- 2.5.3 The report appropriately identifies 'underwater noise disturbance of benthic invertebrates, fish and marine mammals as a result of capital dredging and vessel movements' as a potential likely effect during the construction phase. The report further identifies 'underwater noise disturbance of benthic invertebrates, fish and marine mammals as a result of maintenance dredging and vessels operating at the berth', as a potential likely effect during the operational phase.

- 2.5.4 Overall, dredging activities emit sounds that are continuous in nature and comparatively low in frequency and intensity, although occasionally higher frequencies are emitted (CEDA, 2011). The MMO agree that disturbance is likely to be the main potential underwater noise effect of dredging. Wenger *et al.* (2017) highlight that impacts on fish from dredging-generated noise are likely to be Temporary Threshold Shift (TTS) in some species, behavioural effects and increased stress-related cortisol levels.
- 2.5.5 No mitigation measures specific to underwater noise have been proposed at this stage. The scoping report does state that “impacts will then be assessed with this initial mitigation in place. Where significant effects are identified, further mitigation, consisting of mitigation measures that are identified during the EIA process to reduce or eliminate any likely effects will be identified and subsequently adopted as project commitments, will be identified”.
- 2.5.6 Cumulative effects are mentioned in the scoping report. Of relevance, paragraph 8.80 states the following: “In addition to the above potential impact pathways, cumulative impacts on marine ecology receptors could arise as a result of other coastal and marine developments in the Thames Estuary, as well as ongoing activities, including maintenance dredging and disposal activities, shipping and navigation, and commercial and recreational fishing. These will be considered as part of the cumulative impacts and in-combination effects assessment”. Further, there will be a cumulative and in-combination effects chapter within the ES.

2.6 Navigation / Other Users of the Sea

- 2.6.1 The MMO note that the fishing industry have previously expressed concern about the operations conducted, and that the materials moved by water injection cause an increase in suspended sediments and settlement on their local fishing grounds which disrupt fishing patterns.
- 2.6.2 There is a small fleet of active fishing vessels based at Holehaven creek on Canvey Island near to the proposed works at the oil terminals.
- 2.6.3 The fleet is primarily composed of small under 10m vessels, which are equipped to use demersal otter trawls and fixed gear. The fishing vessels will target sole, thornback ray and bass in the Thames estuary during the spring and summer months, also landing a mixture of other species such as gurnard, dab, flounder, whiting and pout. Vessels will target sprats and cod during the winter months.
- 2.6.4 At Leigh the fleet of cockle fishing vessels fish further out towards the mouth of the Thames so it is the MMO would not expect the works to affect them.

- 2.6.5 This year (2019-2020) there was a high uptake of sprats and herring during the winter months between December and March. These will have been taken from an area near to the proposed works (usually fished just off Southend Pier). This was utilised by the local fleet at Leigh on Sea.
- 2.6.6 The summer months also provide better weather for netting activities by the small part time vessels based in Holehaven creek which is just meters away from the works.
- 2.6.7 It is recommended that you consult local fishing groups to gather their views on the proposal.

3 Conclusion

The items highlighted in this letter should be considered in the initial scope of the ES, however please note that this letter is not a definitive list of all ES requirements and other subsequent work may prove necessary. The MMO reserves the right to make further comments on the Project throughout the pre-application process and may modify its present advice or opinion in view of any additional information that may subsequently come to our attention.

Daniel Walker
Marine Licensing Case Officer



3 June 2020

4 References

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Riley J.D., 1974. The Distribution and Mortality of Sole Eggs [*Solea solea* (L.)] in Inshore Areas. In: Blaxter J.H.S. (eds) The Early Life History of Fish. Springer, Berlin, Heidelberg.

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