



The Sizewell C Project Case Team  
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(By email only)

24 September 2021

Planning Inspectorate Reference: EN010012  
Our Identification Number: 20025459

Dear Sir or Madam,

**Planning Act 2008 – Application by NNB Generation Company (SZC) Limited for an Order Granting Development Consent for The Sizewell C Project**

**Deadline 8 Submission**

On 24 June 2020, the Marine Management Organisation (the “MMO”) received notice under section 55 of the Planning Act 2008 (the “PA 2008”) that the Planning Inspectorate (“PINS”) had accepted an application made by NNB Generation Company (SZC) Limited (the “Applicant”), for determination of a Development Consent Order (“DCO”) for the construction, maintenance and operation of the proposed Sizewell C Nuclear Power Station (the “DCO Application”).

The Applicant seeks authorisation for the construction, operation, and maintenance (“O&M”) of the DCO Application, comprising of two nuclear reactor units, together with associated onshore and offshore infrastructure and associated development (the “Project”). The marine elements of the Project include a cooling water system comprised of intake and outfall tunnels, a combined drainage outfall in the North Sea, a fish return system, two beach landing facilities, and sections of the sea defences that are, or will become, marine over the life of the project. These marine elements fall within a Deemed Marine Licence (“DMLs”) which is under Schedule 20 of the DCO.

The MMO are also now considering the Applicant’s application for Change 19, the construction and operation of a temporary desalination plant for the construction phase. This will involve the construction of a seawater intake tunnel and a brine water outfall tunnel.

The MMO was established by the Marine and Coastal Access Act 2009 (“MCAA”) 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 the marine area by way of a marine licence. Under Part 4 of MCAA, a marine licence is required for all deposits or removals of articles or substances below the level of mean high water springs ("MHWS"), unless a relevant exemption applies.

For Nationally Significant Infrastructure Projects ("NSIPS") the PA 2008 enables DCOs for projects which affect the marine environment to include provisions which deem marine licences. Where applicants choose to have a marine licence deemed by a DCO, applicants may seek to agree the draft marine licence with the MMO prior to submitting their DCO application to PINS. The MMO's primary roles under the PA 2008 regime are as an interested party during the examination stage, and as a licensing and consenting body for the DML at the post consent stage

The MMO is responsible for regulating and enforcing marine licences, regardless of whether these are 'deemed' by DCOs or are consented independently by the MMO. This includes discharging of conditions, undertaking variations and taking enforcement action, when appropriate.

This document comprises the MMO's comments submitted in response to Deadline 8. The MMO understands that an updated SOCG is due to be submitted by the Applicant at Deadline 9, within which we understand many of our outstanding concerns regarding Coastal Processes and Marine Ecology are due to be resolved.

The MMO submits comments on the following as part of Deadline 8:

- 1. Post Hearing submissions**
- 2. Responses to the ExA's third Written Questions (ExQ3)**
- 3. Comments on any additional information/submissions received by D7**
- 4. Responses to Change Request 19**

The MMO would like to take this opportunity to raise our concerns regarding the timescales of the final deadlines for this Examination. Whilst we are working to provide our advice in line with the requests for each deadline, there appears to be a number of outstanding matters that have yet to be fully addressed. The MMO makes its best efforts to provide the most robust advice as possible but with the remaining deadlines falling less than a week apart, the concern is that this is not enough time to undertake our final considerations to their fullest.

This written response is submitted without prejudice to any future representation the MMO may make about the DCO Application throughout the examination process. This representation is also submitted without prejudice to any decision the MMO may make on any associated application for consent, permission, approval or any other type of authorisation submitted to the MMO either for the works in the marine area or for any other authorisation relevant to the proposed development.

Yours faithfully,



Luella Williamson  
Marine Licensing Case Manager

## Table of Contents

<b>1. Post hearing submissions .....</b>	<b>2</b>
<b>2. Responses to the ExA's Third Written Questions (ExQ3) .....</b>	<b>12</b>
<b>3. Comments on any additional information/submissions received by D7 .....</b>	<b>15</b>
<b>4. Responses to Change Request 19 .....</b>	<b>17</b>



## 1. Post hearing submissions

### 1.1 ISH11 - Flooding, Water and Coastal processes

The MMO provided a submission [EV-142g] in lieu of our attendance at Issue Specific Hearing 11 (“ISH11”) which explained our comments on the relevant agenda items that were discussed at the hearing, these are reiterated within this submission. Since the hearing, the MMO has met with the Applicant and we are able to provide updates on Agenda Item 8 - Coastal Processes. See our updated comments on the agenda items below.

#### 1.1.1 Agenda Item 2: Water Supply

- 1.1.1.1 The MMO is currently reviewing the technical details of the new DCO change submission (Change 19) regarding the construction of a temporary desalination plant. The MMO will aim to provide our fullest comments on this by Deadline 9. However, the MMO has supplied our comments on Change 19, with regards to impacts on Fisheries and Marine Ecology within section 4 of this submission.

#### 1.1.2 Agenda Item 7: Water Framework Directive Compliance Assessment

- 1.1.2.1 The MMO defer to the Environment Agency for comments on the appropriateness of the Water Framework Directive Compliance Assessment.

#### 1.1.3 Agenda Item 8: Coastal Processes Update

##### Modelling for the Soft Coastal Defence Feature (“SCDF”) design

- 1.1.3.1 Based on the SCDF modelling provided by the Applicant, the MMO previously stated that we do not agree that using coarser material than the native grain for the sacrificial outer layer of the SCDF is the best option. See our detailed comments on this in section 5.1 of REP6-039, and section 3.1 of REP6-040.
- 1.1.3.2 During a meeting between the MMO and the Applicant on 16 September 2021 the Applicant updated the MMO that their default position has now changed, and they will commit to using material that is the same as the native grain size in the area for the SCDF, unless otherwise agreed in the future.
- 1.1.3.3 To ensure that the appropriate grain size is used the MMO advise that DML condition 41 (1) is updated to add “source, type and grain size of the material to be deposited;” to the list of information that must be provided to the MMO prior to construction of the SCDF.
- 1.1.3.4 The MMO would also advise that the commitment to using material that is the same as the native grain size as a default position should be stated





within the environmental information by way of update, this allows for cohesion between the documents and clarity for its readers.

- 1.1.3.5 The MMO is now content with the monitoring survey area for the SCDF which is proposed in the Coastal Processes Monitoring and Mitigation Plan (“CPMMP”) [REP5-059]. This is an area of 3km centred on Sizewell C.
- 1.1.3.6 Pending the changes to DML condition 41, the MMO considers our previous comments on the SCDF have now been resolved. However, we are still reviewing the updated SCDF modelling reports to clarify if we have any further issues with the modelling. We are currently reviewing REP7-045 and REP7-101, and aim to provide our comments on this at Deadline 9.

### **DML controls**

- 1.1.3.7 Currently there is a condition (Condition 17(5)) on the DML [REP2-013] which requires a CPMMP to be submitted and approved by the MMO prior to the commencement of the licensed activities on the DML. The MMO supports the inclusion of this condition, however we do not agree with the current wording used which states that the CPMMP will be “deemed discharged” once East Suffolk Council (“ESC”) have approved the plan under Requirement 7A. The MMO would not usually defer our decision to sign off such a plan as it will contain monitoring and mitigation requirements for the Offshore cooling water infrastructure; Nearshore outfalls; and Beach Landing Facilities, which are within the MMO’s remit. The MMO would wish to analyse the proposals and approve them in accordance with our regulatory remit to minimise impacts on the marine environment. The MMO propose that the Applicant submits the full CPMMP to be approved by both MMO and ESC prior to works commencing for their respective approvals under each jurisdiction. Whilst there is a geographic overlap within which ESC and the MMO operate, their jurisdictions, and therefore their approval, are not. As with other cases, where the MMO and local planning authority have separate consents, they will seek to work together to reduce duplicating unnecessary burden.
- 1.1.3.8 The MMO attended a meeting with the Applicant and ESC on 24 September 2021, during which, significant progress on this matter was made. The MMO await the submission of the updated DML and DCO from the Applicant before providing our final comments on this matter.
- 1.1.3.9 Furthermore, Condition 41 should be updated as per comment 1.1.3.3 above. The MMO take the opportunity to further raise here that due to the SCDF requiring the placement of sediment within the marine environment, it will be subject to OSPAR requirements. The MMO will liaise with the Applicant on how best to incorporate this into the DML condition.

### **CPMMP**



- 1.1.3.10 The MMO has reviewed revision 2 of the CPMMP [REP5-059] and our main comments are summarised below. The MMO discussed our comments with the Applicant on 16 September 2021 and we understand that an update to the CPMMP will be submitted to address them. Pending a third update to the CPMMP to address our comments as agreed, the MMO will submit our revised position, however it is considered that many of our comments on the contents on the CPMMP will be resolved.
- 1.1.3.11 The MMO welcomes the increase in the frequency of the monitoring proposed for the Beach Landing Facility (BLF) and Marine Bulk Import Facility (MBIF), which involves bathymetric surveys of an area 1km either side of the BLF and MBIF pre and post reprofiling, and at least once per month initially during construction. However, as there is uncertainty in the response of the outer longshore bar to the continued maintenance dredging related to the permanent BLF, the MMO advises that there should also be annual surveys for the duration of the construction phase to monitor the outer longshore bar.
- 1.1.3.12 The MMO welcomes that section 5.3.2 states that the pre and post dredging surveys would assess whether sediment mounds from capital plough dredging disperse. However, MMO advise that the following should also be assessed via these surveys:
- 1) the response of the dredged slope into the outer longshore bar with any consequences for the longshore bar crest level; and
  - 2) the potential infill rate in the dredged area for the BLF.
- 1.1.3.13 The MMO's previous comments [comment 3.3.5 in REP2-140] regarding monitoring of scour development around the offshore cooling water infrastructure remain. The MMO advises that the assumption within section 3.3 that the scour around the offshore cooling water infrastructure will reach equilibrium in 3 months is subject to uncertainty. If the 6-month survey shows scour development continuing (in depth or extent), then further surveys will be needed until the equilibrium is reached – or mitigation measures are put in place. This should be stated in the CPMMP so that it is clear to future readers that further monitoring could be required after 6 months should the scour continue to develop.
- 1.1.3.14 The MMO welcomes that some further details of the approach, for example target accuracies, are now included. However, the MMO advises that section 2.2.2 should include a view on the target accuracies, horizontal and vertical, and hence a view on the uncertainty in the observed beach volume. We note Section 2.3 now includes a section on accuracy and horizontal resolution. A similar approach for Section 2.2.2 is requested. Sections 4.3 and 5.3 should also include a view on the target accuracies, horizontal and vertical.



- 1.1.3.15 In relation to Section 4.3, the MMO advise that if there is a potential for scour protection to be used for the nearshore outfalls then this should be stated in the CPMMP and monitored accordingly.
- 1.1.3.16 Throughout the report the MMO advises that it would be helpful to include illustrations of the proposed monitoring areas and the anticipated areas of scour.
- 1.1.3.17 Please see our comments under section 1.1.3.7 regarding our comments on the approval of the CPMMP.

## **1.2 ISH14 - Development Consent Order, Deed of Obligation and allied documents**

The MMO provided a submission [EV-142i] in lieu of our attendance at Issue Specific Hearing 14 (“ISH14”) which highlighted MMO’s outstanding concerns with the Appeals procedure outlined in Schedule 20A of the draft DCO. These comments are repeated below, alongside an update on the MMO’s additional outstanding issues with the DML which is contained within Schedule 20 of the draft DCO.

### **1.2.1 Schedule 20A in the draft DCO [REP7-006] – Appeals procedure and determination dates**

- 1.2.1.1 The MMO notes that the detailed agenda for ISH 14 ‘Development Consent Order, Deed of Obligation and allied documents’ did not include the Deemed Marine Licence Appeals Procedure which is contained within Schedule 20A of the draft Development Consent Order.
- 1.2.1.2 The MMO would like to highlight that there is still a significant disagreement between the Applicant and the MMO in relation to the Appeals procedure, as the Appeals process proposed remains unacceptable to the MMO. The MMO’s position on Appeals is outlined within our responses referenced as follows: sections 2.1.2 – 2.1.7 of REP2- 140; sections 2.1.5 – 2.1.14 of REP2-144; sections 1.1.7 – 1.1.22; and section 6 of REP6-039.
- 1.2.1.3 Within ExQs3, under the reference DCO.3.3, the following question is posed by the ExA, and it was requested to be considered by the MMO for ISH 14:

*“Please see MMO’s REP6-039, paras 1.1.7 -22*

*(a) Please will the Applicant explain why it must have Sch 23 for DML conditions refusals / deemed refusals? Why is this case different from Hornsea 3 and Norfolk Vanguard?*

*(b) MMO – are the considerations which apply to wind farms really the same for a single phase, time critical project with little flexibility over siting?”*



- 1.2.1.4 Whilst the MMO notes that (a) is directed to the Applicant, the MMO understands that Article 83 of the Order is intended to apply the approvals process set out in Schedule 23 to any approval required of the discharging authority under the Order. The MMO is not the discharging authority under the Order. The MMO understands that the Applicant's intention is that Article 83 and Schedule 23 will not apply to any approval required of the MMO under a condition of the DML, the Applicant intends for the MMO approvals to be subject to the modified Appeals process currently set out in Schedule 20A of the Order. Having reconsidered the wording of Article 83 in light of the ExA's question the MMO observes that Article 83 might benefit from being further amended so it clearly excludes any approval of the MMO that is required under a condition of the DML from its application.
- 1.2.1.5 In relation to part (b) of the question the MMO can see no reason why this applicant and this project should be treated any differently from any applicant for a windfarm project, or indeed an applicant for any other standalone marine licence. The MMO's view is that the considerations to which the ExA refers, that being single phase, time critical projects with little flexibility over siting, apply equally to windfarms (and other applications) as they do to nuclear new builds. The MMO take the view that should this application have been frontloaded and assessed to a further extent prior to submission to examination, then the risk of these considerations would have been greatly reduced. Furthermore, windfarms are nationally significant infrastructure projects which are critical for delivering the Governments commitments on climate change, they too are time critical projects with little flexibility over siting and the MMO's position is that the considerations that apply in this case are analogous to those which apply to windfarms. The MMO can see no reason why the Applicant in this case should, by virtue of the project being proposed, be treated significantly differently to the applicants for other DCOs.
- 1.2.1.6 The MMO adds the following in support of our comments regarding the discussion on Appeals. In both Hornsea 3 and Norfolk Vanguard DCO's, the applicants advanced the need for the MMO's approvals to be made within a set determination period and that those decisions be subject to either an arbitration process or at least a modified Appeals process to be based on the Marine Licensing (Licence Application Appeals) Regulations 2011. In neither case, and on neither point, did the ExA, or indeed the Secretary of State, agree with the applicant.
- 1.2.1.7 In Vanguard, the ExA noted at 9.4.42 of its recommendation report<sup>1</sup> the need for evidence to justify the adapting of existing provisions regarding the discharge of conditions on DML's by the MMO in the exercise of its regulatory function. The ExA noted that it did not have such evidence before it, nor did it have before it any evidence of any previous delays occasioned

<sup>1</sup>Report available at:

<https://infrastructure.planninginspectorate.gov.uk/wpcontent/ipc/uploads/projects/EN010079/EN010079-004268- Norfolk%20Vanguard%20Final%20Report%20to%20SoS%2010092019%20FINAL.pdf>





by the MMO in the exercise of these functions so as to cause material harm to any marine licence holder. The MMO observes that there is no such evidence before the ExA in relation to this application.

- 1.2.1.8 In light of our comments made on the considerations of this application being any greater than for those of other applications, the MMO's position is that the Applicant does not appear to be advancing any justification over and above that advanced in Vanguard in relation to any need to adapt existing provision, nor is it advising any evidence of any current delays in the MMO providing any approvals under the conditions of this licence. The MMO cannot therefore see any need for the inclusion of the statutory Appeals process in relation to this application and this DML.
- 1.2.1.9 The ExA in Vanguard acknowledged that to apply an Appeals process as proposed, would place the Applicant in a different position to other licence holders. The MMO's position was that to do so was problematic because it would lead to a clear disparity between those licence holders who obtained their marine licence directly from the MMO and those who obtained their marine licence via the DCO process, this would lead to an inconsistent playing field across the regulated community, and therefore falls against what parliament had intended within the wording of the Appeals regulations. Further, the Appeals Regulations do not apply to approvals required under the conditions of a licence.
- 1.2.1.10 The MMO's position for this application is that to include the Appeals process in schedule 20A within the DCO would put this Applicant in a different position to other licence holders for no clear cogent or robust reason. As the MMO has set out in its previous comments in relation to this application, there is already a clearly defined route to challenge the MMO over these approvals and this is through the MMO's internal complaints procedure and ultimately through Judicial Review. For the avoidance of doubt, to date, the MMO has never been judicially reviewed over the refusal, or a failure to refuse, an application for an approval under a condition of a licence. The MMO would suggest that the Applicant is attempting to fix an issue which isn't broken.
- 1.2.1.11 The MMO remains concerned about the applicants proposed inclusion of a specified determination period in which the MMO must determine whether or not to grant any approval required under a condition of the DML. It is the MMO's strongest view that it is inappropriate to put timeframes on complex technical decisions of this nature. The time it takes the MMO to make such determinations depends on the quality of the application made, and the complexity of the issues and the amount of consultation the MMO is required to undertake with other organisations. The MMO's position remains that it is inappropriate to apply a strict timeframe to the approvals the MMO is required to give under the conditions of the DML given this would create disparity between licences issued under the DCO process and those issued directly by the MMO, as these marine licences are not subject to set determination periods.



1.2.1.12 Whilst the MMO acknowledges that the Applicant may wish to create some certainty around when it can expect the MMO to determine any applications for an approval required under the conditions of a licence, and whilst the MMO acknowledges that delays can be problematic for developers and that they can have financial implications, the MMO stresses that it does not delay determining whether to grant or refuse such approvals unnecessarily it makes these determinations in as timely manner as it is able to do so. The MMO's view is that it is for the developer to ensure that it applies for any such approval in sufficient time as to allow the MMO to properly determine whether to grant or refuse the approval application.

1.2.1.13 The MMO observes that should the ExA be minded to recommend that the DML conditions do include defined determination periods, as the Applicant currently proposes, any determination period set out in the DML should be 6 months and the condition should be drafted using the same wording used in Vanguard or Hornsea Three, as detailed below:

*“Unless otherwise agreed in writing with the undertaker, the MMO must use reasonable endeavours to determine an application for approval made under condition [x] as soon as practicable and in any event within a period of [x] months commencing on the date the application is received by the MMO.”*

Or

*“The MMO shall determine an application for approval made under condition [x] within a period of six months commencing on the date the application is received by the MMO, unless otherwise agreed in writing with the undertaker.”*

## 1.2.2 Harbour Powers in the draft DCO [REP7-006]

1.2.2.1 The MMO provided our most up to date comments on this in our Deadline 7 response [REP7-136]. The MMO attended a meeting with the Applicant on 13 September 2021 where proposed amendments to the Harbour Powers were discussed. The MMO awaits receipt of the Applicant's proposed amendments to the DCO and will provide our up to date comments at a later deadline.

## 1.2.3 Schedule 20 in the draft DCO [REP7-006] – draft DML

1.2.3.1 The MMO attended a meeting with the Applicant on 13 September 2021 where proposed amendments to the DML were discussed, the MMO submitted comments on this to the Applicant on 15 September 2021. The MMO awaits receipt of the Applicant's proposed amendments to the DML, after which we will be able to provide our updated comments. However, the MMO have the following comments to make on the draft DML for this



submission.

### **Determination dates**

- 1.2.3.2 The MMO do not agree with the inclusion of determination timeframes in which the MMO must determine whether or not to grant any approval required under a condition of the DML. Please see our comments on this in paragraphs 1.2.1.11 – 1.2.1.12 above.

### **Dredging and disposal**

- 1.2.3.3 The MMO require changes to the dredging and disposal conditions on the DML [REP7-006] (Conditions 35 – 37) to control impacts on coastal processes. The maximum annual dredging and disposal volumes must be stated on the DML. There must also be a condition that pre and post dredge bathymetrical surveys must be undertaken so that the MMO can confirm that the dredging has been carried out in line with the licensed dredge depth, area and within acceptable volume limits. Further details on the confirmed disposal sites are also required to appropriate licence the proposed activities.



## 2. Responses to the ExA's Third Written Questions (ExQ3)

Table 1: The MMO's responses to ExQ3

Bio.3.1	NE, MMO	A number of questions were raised seeking information and input from Natural England and MMO during ISH10. Those at agenda item 5 were published by the ExA on 31 August 2021 following ISH10 and a note of the times at which other questions relevant to them were raised was sent to them later. For ease of reference, the ExA sets out those points below. Please will Natural England and the MMO respond at Deadline 8. In the event that their D7 responses or submissions in lieu of attendance have covered these points to their satisfaction, please will they state where, with EL references, paragraph and electronic page numbers.	Please see the MMO responses to this below.
Bio.3.2	NE, MMO	<p>Agenda item 3.a</p> <p><i>Sabellaria spinulosa</i>, in general and progress with a <i>Sabellaria</i> mitigation and monitoring plan which is awaited from the Applicant - see also Natural England's position set out in their post-ISH7 submission [REP5-160] (page 21 of 21) what DML conditions are proposed for mitigation and comments on likelihood of presence and need for compensation (see also MMO's REP6-039] paras 1.3.6.6 and 1.3.7.9).</p> <p>Q(a) Where is the mitigation and monitoring plan, is Natural England content with it, likewise MMO</p> <p>Q(b) Natural England say three locations for intakes; Are there not two intakes of which the northernmost avoids SS as it is not on reef. Southernmost has to be</p>	The MMO has reviewed the Draft <i>Sabellaria</i> Reef Management and Monitoring Plan [REP7-078], and provides our comments within section 3.7 of this submission. The MMO aims to review comments on Natural England's latest position, and will update our position where applicable by Deadline 9.



		on reef, does it not? What is the third? Was it a candidate rejected? (The Applicant clarified there are two heads per intake and three potential locations.) Q(c) Will there be a condition in the DML requiring mitigation of any effects on SS? And also will an in principle monitoring and mitigation plan be submitted to the examination as suggested by MMO at para 1.3.6.6? When?	
Bio.3.3	NE, MMO	Agenda item 3.b To understand which issues considered at the Hinkley Point C water discharge permit acoustic fish deterrent appeal and in dispute are common to the Sizewell DCO application; and who was involved? (Please will the MMO and Natural England take into account the Applicant's response at ISH10 and its post-ISH10 submissions in replying.	The MMO has provided its updated comments and position on acoustic fish deterrents for this application within section 3.1.1 of this submission, the MMO concludes that we are satisfied that our previous comments in relation to AFD can be considered closed.
Bio.3.7	Natural England, MMO	The ExA understands that Natural England and the MMO did not respond to the consultation. Please will they both set out their responses to the proposed changes?	The MMO defer to Deadline 9 to provide comments on Change 19 in order to provide the most robust advice. However, the MMO has supplied our comments on Change 19, with regards to impacts on Fisheries and Marine Ecology within section 4 of this submission.
DCO.3.3	MMO and Applicant	Please see MMO's REP6-039, paras 1.1.7 -22 (a) Please will the Applicant explain why it must have Sch 23 for DML conditions refusals / deemed refusals? Why is this case different from Hornsea 3 and Norfolk Vanguard? (b) MMO – are the considerations which apply to wind farms really the same for a single phase, time critical project with little flexibility over siting?	The MMO answers this question within section 1.2.1 of this submission. This was also contained with our submission in lieu of our attendance at ISH 14 [EV-142i].
DCO.3.5	MMO, Natural	Are the MMO, Natural England and Environment Agency satisfied that the co-ordinates for the location	The MMO have reviewed and plotted the marine works coordinates and the overall

	England, Environment Agency	of the works and their construction are given correctly in the ninth revision of the dDCO?	<p>authorised development onto a Geographic Information System. It appears from the plotted coordinates that the temporary disposal site's boundaries (contained within Table 10 of the DML, Rev. 9) fall outside of the overall authorised development (Table 1 of the DML). The MMO advise that the applicant reviews these, as we would expect the coordinates of all marine works to fall within the extent of the overall authorised development. Further, condition 7 of the DML states all licensed activities must be undertaken within the coordinates set out in Table 1, therefore we would expect the coordinates of all other licensable activities to fall within these boundaries.</p> <p>The MMO are satisfied that the rest of the marine works appear to fall within these limits, and they are in the correct geographical location.</p>
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### 3. Comments on any additional information/submissions received by D7

#### 3.1 Impacts to Fish

- 3.1.1 The MMO considers that our previous comments regarding the assessment of impacts to fish can be considered closed for the most part, due to the additional information that has been provided by the Applicant. We have detailed the additional information we have reviewed below from 3.1.1 – 3.1.8.
- 3.1.2 The MMO has reviewed the draft Fish Monitoring Plan [REP7-077] to determine if we consider that the proposed monitoring and potential mitigation options are appropriate. The MMO has no specific comments on the draft plan which is in line with expectations. It also usefully provides potential for some adaptive management should entrapment predictions in the ES be proven to be underestimates.
- 3.1.3 The MMO also awaits the further assessment for sea bass that is due to be submitted by the Applicant at Deadline 8.
- 3.1.4 Finally, the MMO has reviewed DCO Change 19 to determine if we agree whether the impacts to fish from the construction of the Desalination Plant will remain insignificant. Please see our comments on Change 19, with regards to impacts on Fisheries and Marine Ecology within section 4 of this submission.

#### 3.2 Acoustic Fish Deterrent Report [REP5-123]

- 3.2.1 The MMO previously advised that further information should be provided to assess the feasibility of installing and operating an Acoustic Fish Deterrent “AFD”) system at Sizewell C prior to AFD being excluded from the cooling water system design.
- 3.2.2 Report REP5-123 was submitted to PINS to address these concerns. The report acknowledges that a less optimal design could have benefits to fish and require less maintenance but no detailed consideration of such a design has been made. The Applicant’s main argument is that the effects of fish entrapment are not significant and therefore additional mitigation is not justified.
- 3.2.3 Based on the further evidence provided concerning the significance of entrapment impacts to fish [REP6-028], the MMO concur that the predicted impact on fish from entrapment is unlikely to be significant.
- 3.2.4 While the MMO support the use of mitigation to reduce impacts where possible, the MMO consider that the absence of an AFD system should not be an impediment to consenting the project in this case. This is because the predicted impacts on fish from entrapment without an AFD are not



significant, the benefits of the mitigation are unproven offshore, and there are safety risks from the installation and maintenance process.

- 3.2.5 The MMO is satisfied that our previous comments in relation to AFD can be considered closed.

### **3.3 Quantifying Uncertainty in Entrapment Predictions for Sizewell C [REP6-028]**

- 3.3.1 The MMO previously requested that a further sensitivity analysis was provided to examine the effectiveness of the Low Velocity Side Entry (“LVSE”) design and the Fish Return and Recovery (“FRR”) system.
- 3.3.2 The MMO has reviewed REP6-028, which reviews the uncertainties in the effectiveness of the LVSE design and FRR system. Using conservative assumptions, the assessment confirms that impacts to fish from entrapment at population level will not be significant. Additionally, Appendix 2.17.A in REP6-016 has repeated the local analysis using the same conservative assumptions for LVSE and FRR and also confirms the impact from fish entrapment is not significant.
- 3.3.3 The MMO considers that the conclusions of this report are appropriate.
- 3.3.4 The MMO note that a further assessment in relation to sea bass will be provided at Deadline 8, which we aim to review. However, MMO do not expect this to alter any of the conclusions reached on existing evidence.

### **3.4 Environmental Statement Addendum – Chapter 2 Marine Ecology and Fisheries – Appendix 2.17.A – Revision 2 (Fish Sensitivity Analysis) [REP6-016]**

- 3.4.1 The MMO previously requested that a further sensitivity analysis is undertaken which assumes that there will be zero effectiveness from the LVSE design and the FRR system due to there being no robust evidence to support that there will be any impingement benefit.
- 3.4.2 The MMO welcomes that REP6-016 provides an updated local analysis using more conservative assumptions for LVSE and FRR. The analysis confirms that the local impact from fish entrapment is again not significant even with zero benefit from the LVSE and FRR.
- 3.4.3 The MMO considers that our previous comments on this subject can be considered closed.

### **3.5 Underwater Noise Report [REP5-124]**

- 3.5.1 The MMO previously requested further information to be provided regarding the underwater noise impacts on marine fauna, fish and marine mammals from the works, especially in relation to the DCO change to build a second Beach Landing Facility.





- 3.5.2 The MMO is content that the additional information provided in REP5-124 addresses our previous concerns in relation to the underwater noise impact assessment. This report concludes that the impacts from underwater noise will not be significant. The MMO are content with these conclusions.
- 3.5.3 The MMO notes that this report clarifies the Applicant's proposal for no piling to occur between May to July to avoid potential effects to breeding birds, with works commencing in August. The MMO advises this should be secured within the consent by way of a new DML condition outlining this timing restriction on piling.

### 3.6 Impacts to Marine Mammals

- 3.6.1 The MMO has reviewed revision 2 of the Marine Mammal Mitigation Protocol [REP3-019].
- 3.6.2 The MMO defers to Natural England's view on whether the content of the draft MMMP includes sufficient mitigation to prevent injury to marine mammals and follows the current best practice.
- 3.6.3 The only change the MMO requests is to Section 8 'Reporting'. This section states that reporting of marine mammal monitoring will be submitted to the client and the statutory nature conservation bodies only. However, the MMO should also be sent any marine mammal monitoring reports that are agreed as being required within the MMMP.
- 3.6.4 The MMO also defers to Natural England regarding the appropriateness of the Southern North Sea Special Area of Conservation Site Integrity Plan [Appendix 9A, page 19 in AS-178].

### 3.7 Impacts to *Sabellaria spinulosa* Reef

- 3.7.1 The MMO has reviewed the Draft Sabellaria Reef Management and Monitoring Plan [REP7-078] and have the following comments to make. While it has identified possible options for installation of the intake heads (jack-up, dynamic positioning, anchored barge), the mitigation plan does not commit to adopting the least environmentally damaging option. We note that at HPC, an anchored barge is being used for installation of the intake heads. This is probably the most damaging option for Sabellaria reef. The MMO therefore request further clarification from the Applicant about how the preferred construction option will be determined.

## 4. Responses to Change Request 19

- 4.1 The MMO are currently reviewing the details of Change 19 and the Environmental **Statement** Addendum to determine the extent of these additional impacts. We aim to provide our full comments on this at Deadline 9.



4.2 The MMO has however, reviewed Change 19 with regards to its impacts on **Fisheries and Marine Ecology** and have the following comments to make on this matter.

- 4.2.1 The construction of the desalination plant intake and outfall represent minor construction works within Greater Sizewell Bay. Based on the proposed construction methods and mitigation measures, the construction of these works is not expected to give rise to significant environmental effects to marine ecology or fisheries receptors.
- 4.2.2 During operation, the presence of the intake and outfall structures is not predicted to give rise to significant environmental effects to marine ecology or fisheries receptors. In addition, the discharge from the outfall will comprise a hypersaline discharge (up to 53 salinity units) with slightly elevated contaminant and nutrient concentrations. The slightly elevated contaminant and nutrient concentrations are not of significant concern to the MMO. The key issue with desalination plant discharges is the elevated salinity of the discharge. While marine animals are reasonably tolerant of reduced salinities, some marine organisms are quite intolerant of increased salinities. This particularly includes planktonic organisms and some marine plants and invertebrates. For such organisms, exposure to salinities above 38.5 salinity units can be lethal particularly if such exposures are prolonged (minutes – hours). For fish, birds and marine mammals, short-term exposure to elevated salinities would not be expected to give rise to significant effects.
- 4.2.3 CORMIX modelling has been carried out to assess initial dilution of the hypersaline plume. This is reported in ES Addendum Volume 3 Appendices - Part 2 of 2, Appendix 3A, section 5.2.3 [REP7-033]. The accompanying text asserts that salinity is predicted not to exceed more than 1 salinity unit above ambient (34.5 units) within a distance of 6 – 10m of the diffusers. However, the information presented for the CORMIX modelling does not clearly demonstrate this or for all states of tide. Such information is fundamental to understanding the potential effects on marine ecology and fisheries receptors.
- 4.2.4 The MMO requests that the Applicant provides more details about the variation in water depth and flow speed at the discharge location over a spring-neap tidal cycle and then present CORMIX modelling results covering different tidal states over the spring-neap cycle. We would predict that initial dilution for a dense plume is likely to be lowest on neap tides at low water. We request that more CORMIX results be presented in a better format for the period around slack tide.
- 4.2.5 If the assertion that salinity is predicted not to exceed more than 1 salinity unit above ambient (34.5 units) within a distance of 6 – 10m of the diffusers can be demonstrated more clearly across all states of tide, then the MMO would have no significant concerns about the potential effects to marine ecology or fisheries receptors. Assuming the above, the volume of seawater surrounding the diffuser which is above 38.5 salinity units will be very small



and at most of the order of  $10\text{m}^3$ . Any planktonic organisms passing through this plume would only experience elevated salinities for a short period (a matter of seconds), particularly when the tide was flowing. The risk of any significant mortality of planktonic organisms as a result of water traversing this plume is considered to be very low (and far lower than the mortality of planktonic organisms associated with chlorination of the 130 cumecs cooling water system, which has been assessed as not giving rise to a significant effect).

- 4.2.6 There is some risk that the dense saline plume may interact with the seabed, particularly during slack water. However, if the CORMIX modelling results are shown to be valid, the MMO are satisfied that any impact to benthic invertebrates will be limited to a maximum distance of 10m from the outfall and thus not significant.

