



The Sizewell C Project Case Team
National Infrastructure Planning
sizewellc@planninginspectorate.gov.uk

(By email only)

4 October 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

Submission in lieu of attendance at Issue Specific Hearing 15 (“ISH15”) on the proposed temporary desalination plant the subject of Change Request 19.

Thank you for the invitation from the Examining Authority (“ExA”) for the Marine Management Organisation (“MMO”) to speak at ISH15. In the interests of efficient team resource management, the MMO will not be attending ISH15. This is due to capacity issues faced by the MMO at present. However, we have reviewed the detailed agenda and would like to offer our comments in writing on the agenda items we consider to be of relevance to the MMO. Additionally, we are happy to address any further points in writing as part of any future Written Questions from the ExA, and we will continue to provide written representations at each future deadline until such time as the examination comes to a close.

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.

1. Agenda Item 1: Welcome, introductions and arrangements for the Hearing

1.1 No comments.

2. Agenda Item 2: Water Supply update

2.1 The MMO understands that the proposed temporary desalination plant is intended to supply water during the construction phase only. Should the plant be required to supply water into the operational phase then MMO considers further detailed



assessment will be required, in particular relating to the additional cumulative/in combination impacts this would present with regards to the operational infrastructure.

3. Agenda Item 3: The Environmental Assessment and the environmental implications of the proposed temporary desalination plant including matters relevant to the Habitats Regulations Assessment:

3.1 (a) The additional environmental assessments and supporting documentation submitted in connection with the proposed temporary desalination plant.

3.1.1 As commented above in 2.1 the MMO considers the additional environmental assessments regarding this change only relate to the desalination plant being used during the construction phase, and therefore further assessment of environmental impacts would be required should the plant be required to supply water during the operational phase of the project.

3.1.2 The MMO considers some further information is required in relation to the assessment of impacts on marine ecology and fisheries receptors, and this is explained in section 3.9 below.

3.1.3 The MMO is still reviewing the assessments in relation to the impacts on coastal geomorphology and marine water quality and may consider further assessments or documentation is required in relation to this. We will provide our view on this at Deadline 10.

3.2 (b) Transport implications, including the Heavy Good Vehicle (HGV) deliveries and any Abnormal Invisible Loads (AILs) associated with the water tankers during the early stages of Sizewell C construction, and the construction and demolition of the temporary desalination plant.

3.2.1 No comment.

3.3 (c) Noise and vibration, including that associated with the additional construction plant and activities within the main development site and additional activities within the marine area and having regard to any additional impacts upon relevant internationally and nationally designated sites.

3.3.1 The MMO understands that there will be no piling required in the marine environment to construct the desalination plant and therefore the MMO does not have any new concerns regarding underwater noise and vibration impacts. The MMO considers the impacts of the changes in relation to underwater noise are not significant.

3.4 (d) Air quality, including those associated with the introduction of additional on-site diesel generators within the main development site and any additional impacts upon relevant internationally and nationally designated sites.

3.4.1 No comment.



3.5 (e) Coastal Geomorphology, including any effects arising from the introduction of new infrastructure and construction activities within the marine environment, with particular regard to the effect of intake and outfall headworks on coastal processes and any additional impacts upon relevant internationally and nationally designated sites.

3.5.1 The MMO has not yet completed our review of the implications of the proposed desalination plant on coastal geomorphology. We aim to provide our view on this at Deadline 10.

3.5.2 The MMO defers to Natural England's advice regarding the impacts upon internationally and nationally designated sites.

3.6 (f) Landscape and visual implications, including the impact of equipment associated with the temporary desalination plant, with particular regard to any additional landscape impacts on the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) associated with the construction and siting of a containerised desalination module.

3.6.1 The MMO defers to the Local Planning Authority's advice on the landscape and visual implications.

3.7 (g) Marine historic environment implications, including the impact of horizontal directional drilling and dredging with particular regard to buried archaeological remains.

3.7.1 The MMO defers to Historic England's advice on the implications to the marine historic environment.

3.8 (h) Marine water quality, sediments, and ecology, including the Water Framework Directive and any effects arising from the introduction of new infrastructure and construction activities within the marine environment, and impacts of use, abstraction, discharge and hypersaline water on relevant internationally and nationally designated sites.

3.8.1 The MMO has not yet completed our review of the implications of the proposed desalination plant on marine water quality. We aim to provide our view on this at Deadline 10. However, the MMO defer to the Environment Agency for leading comments regarding the Water Framework Directive.

3.8.2 See our comments on impacts to marine ecology below in section 3.9.

3.9 (i) Terrestrial ecology and ornithology, including any additional effects upon marine birds and mammals and upon relevant internationally and nationally designated sites.

3.9.1 The MMO has reviewed the implications of the temporary desalination plant on fisheries and marine ecology (including birds and mammals) and have the following comments to make on this matter.



- 3.9.2 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.
- 3.9.3 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.
- 3.9.4 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.
- 3.9.5 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.
- 3.9.6 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 19 and at most of the order of 10m³. 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).

3.9.7 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.

3.10 **(j) Any other relevant environmental implications, including any additional in-combination or cumulative impacts.**

3.10.1 As commented above in 2.1 and 3.1.1, the MMO considers that further assessment of environmental impacts, particularly regarding in-combination/ cumulative impacts, would be necessary should the plant be required to supply water during the operational phase of the project.

4. Agenda Item 4: General Habitats Regulations Assessment matters not covered under item 3 above.

4.1 The MMO defers to Natural England's comments on the Habitats Regulations Assessment.

5. Agenda Item 5: The DCO, DoO and other control documents.

(a) Are any changes over and above those in Revision 9 of the DCO and versions current at Deadline 7 of the DoO and other control documents needed?

5.1 The MMO notes that the construction of the temporary desalination plant is now appropriately included in the DML [REP8-036].

5.2 However, the MMO notes that there is currently no DML provision to permit the removal of the temporary desalination plant, whereas removal of the structures are discussed within the Environmental Statement Addendum [REP7-030]. The MMO advises that if the intention is to remove the temporary desalination plant structures at the end of the construction phase, then the DML will need to be updated, or a separate marine licence applied for to cover this activity.

Yours faithfully,

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Ellen Mackenzie
Marine Licensing Case Officer

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