Schedule – Further Information Request

1. General Matters

a) In providing its response to the matters raised in this request for Further Information, the applicant is requested to clearly annotate any proposed amendments to the EIAR, NIS and other documentation submitted and cross reference clearly revised/new information across the submitted documentation as appropriate. It is requested that all changes are clearly identified.

b) The scientific information provided as part of the planning application documentation should be based on up-to-date survey reports and data. Accordingly, the applicant is requested to confirm/provide justification/verification that the information submitted in support of the planning application remains relevant and appropriate at the point of submitting further information or to update same as required.

c) The applicant is requested to confirm whether any on-going or additional surveying has been carried out since the application was lodged and, if so, the applicant is invited to submit any further survey data results and analysis and update the planning application documentation, as appropriate.

d) An Coimisiún Pleanála (herein referred to as the Commission), acknowledges the provision of the 'In Principle Environmental Monitoring Plan' (IPEMP), as part of the submitted application documentation, however, the range of monitoring proposals and language used within that document do not provide sufficient clarity, commitment nor detail of monitoring measures and reporting which the Commission considers to be required for a project of the scale and duration proposed, throughout the construction, operational and decommissioning phases of the proposed development. Drawing on the detail of the further information here sought and submissions made by the prescribed bodies and third parties on this application, the applicant is requested to provide a more comprehensive operational IPEMP for the proposed development. In this regard, the applicant is advised that the revised IPEMP should fully inform the requirements of any future decommissioning plan(s), check the successful and timely implementation of mitigation measures, detect any unexpected impacts requiring additional measures, and justify any adaptive mitigation measures required. The proposed operational monitoring should be provided at appropriate intervals, for appropriate periods, and provide for adequate reporting to the relevant compliance authorities.

e) In relation to the MAC boundary, the applicant is requested to confirm the following, having regard to the provisions of sections 286(3) and (4) of the Planning and Development Act 2000 (as amended) (2000 Act):

   i. The temporary construction activities (including, inter alia, turbine installation) required to undertake the proposed development in the maritime area are to be undertaken within the spatial representation (map) of the MAC consent area,

   ii. That all permanent development (including blade sweep) can be accommodated within the spatial representation (map) of the MAC consent area,

   iii. how the design flexibility approved by the Commission with respect to the siting of turbines will interact with the MAC consent area.

f) The applicant is requested to provide the location of the following proposed infrastructure used in the coastal processes models for each design option applied for:

   - All offshore wind turbines and offshore substations including scour protection,
   - All cables including scour and cable protection.

   Please see Appendix A attached to this report.

g) The statements in paragraph 461 of Chapter 4 are noted, however, the applicant is requested to provide any further details available in relation to the timing of the provision of the upgraded Poolbeg 220kV substation to which the proposed development will ultimately connect, and whether additional detail can at this stage be provided in relation to the connection points for the project. In the event that this request cannot be fully addressed by the applicant, the applicant is requested to provide explanation and justification for the response provided.

2. Search and Rescue

a) The Irish Coast Guard (IRCG), through the Department of Transport, has raised concerns in relation to the layout of the proposed development with respect to Search and Rescue (SAR) access. The applicant is requested to consult with the IRCG, in addressing these concerns, and provide further information and clarification on such matters.

b) In June 2025 the Department of Transport published two documents, “Guidance on Safety of Navigation & Emergency Response: Offshore Renewable Energy Installations”, and “Standard Operating Procedure 07-2025 – Offshore Renewable Energy Installations: Guidance and Operational Considerations for SAR and Emergency Response”. The Commission notes that the application documentation submitted has been prepared broadly in line with the standard practice in terms of safety of navigation and emergency response procedures in place prior to the publication of these documents. Notwithstanding this, however, the applicant is requested to submit details which demonstrate the proposed development’s compliance with these recently published documents in relation to navigation safety and emergency response. In this regard the applicant is requested to identify, clarify and highlight where the design approach, and layout of the proposed development is already in compliance with the newly published guidance documents, should amendments be required to ensure compliance with these guidance documents the applicant shall provide additional information, discussion, justification and/or updates to the application documentation and design as necessary.

3. National Maritime Planning Framework

The Commission notes the information contained in the Planning Report Appendix A: Compliance with the National Marine Planning Framework submitted with the application, and Section 2.6.1 of the EIAR, which sets out how the project meets the requirements of the NMPF. The Commission also notes the March 2024 EU Commission Notice on the threshold values set under the Marine Strategy Framework Directive 2008/56/EC and EU Commission Decision 2017/848, in particular the four thresholds established for habitat loss (D6C4), adverse effects on habitats (D6C5), impulsive noise (D11C1) and continuous noise (D11C2) listed in the Annex to this EU Commission Notice. The Commission considers the use of these thresholds would assist in achieving consistency in the presentation of the results across the Irish Sea Phase 1 ORE projects, and would facilitate the assessment of the relevant NMPF policies based on EU agreed indicators and thresholds.

The applicant is therefore requested to:

a) Model, map and present the areal and temporal extent of the potential impact of the proposed development for the full construction and operation campaign on the following indicators:
    i) the potential spatial extent of habitat lost (D6C4),
    ii) the potential spatial extent of habitat adversely effected (D6C5),

iii) the modelled impulsive noise (D11C1) with and without abatement, and

iv) the modelled continuous noise (D11C2).

b) Assess the results obtained for potential habitat loss and habitat adversely affected in A above against the 2% thresholds established for habitat loss (D6C4) and the 25% threshold for adverse effects on habitats (D6C5) for the MSFD Celtic Seas North Inner Marine Reporting Unit, as detailed in Ireland's Draft Marine Strategy Part 1 Article 8, 9 and 10 report 2024 including its annexes, published in July 2024.

c) Assess the results obtained from modelled impulsive (with and without abatement) and continuous noise in A above against the relevant thresholds values for impulsive and continuous noise set out in the above referenced EU Commission Notice.

d) Incorporate the output from A, B and C above, and all other relevant updates made as a result of this Further Information request, into a revised assessment of the NMPF policies, particularly Biodiversity Policy 2, Seafloor Integrity Policies 1, 2 and 3, Fisheries Policy 5 and Underwater Noise Policy 1. This revised assessment should fully account for the distinction the NMPF places on 'important' species and habitats as defined on page 35 and 36 of the NMPF.

The spatial extent of the modelled potential habitat loss, habitat adversely effected and impulsive and continuous noise should be provided in GIS format, see Technical NOTE Appendix A.

4. Ecosystem Services.

In relation to the Ecosystem Services Assessment included within the planning documentation as Annex 1 of Appendix A of the Planning Report:

a) The applicant has screened out waste services from further consideration on the basis of the project not being located on or near any dumping at sea areas. While this is noted, the Commission request that the applicant confirms whether the potential implications of the crossing of existing waste water pipelines by proposed infrastructure has been considered, clarification, justification and/or further assessment/mitigation should be provided as appropriate.

b) The Commission notes that coastal defence is also scoped out of consideration, however, the proposed development will require works along and within the coastal area which will necessitate the provision of a temporary cofferdam and other elements of construction and drainage management occurring along the

coastline and making permanent changes, the applicant is therefore requested to provide further justification/discussion/assessment in this regard on this issue.

c) It appears that table no. 4 has been repeated within the Ecosystem Services Assessment (once in portrait format and then followed in a landscape format), the applicant is invited to confirm whether this is a formatting/typographical error or whether an additional table or further discussion on the topics has been omitted in error. In this regard the applicant is invited to review and provide an updated assessment report addressing this issue and those raised at (a) and (b) above.

5. Cumulative Impacts

The Commission notes that cumulative assessment is addressed under each topic-specific chapter in the EIAR, as well as in an appendix to each topic-specific chapter and Appendix 5.1.

The Marine Institute in their observation raises concerns in relation to the cumulative effects assessment noting that holistic integrated assessments are required at a site, regional and ecosystem level, and that monitoring for realised impacts should be available for incorporation into future cumulative impact assessments. The Commission notes the cumulative assessment details that have been submitted and that the approach adopted has been informed by 2019 UK guidance which was in place at the time of lodgement of the current application. The applicant is advised that the UK guidance has been updated, namely Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - GOV.UK, September 2024 (NSIP, 2024).

The applicant is requested to revise the submitted cumulative assessment in line with NSIP (2024) and submit a standalone document to clearly demonstrate the CEA conclusions. In the interests of consistency and transparency, the applicant is requested to complete the assessment in accordance with the templates provided in the NSIP (2024), namely “Appendix 1: Matrix 1 – Identification of ‘other development’ for CEA” and “Appendix 2: Matrix 1 – Assessment matrix” (see attached Appendix B).

This assessment should include each of the Irish Sea Phase 1 ORE Projects, namely (Oriel WF (ABP-319799-24), Arklow WF (ABP-319864-24), North Irish Sea Array (ABP-319866-24), and Dublin Array WF (ABP-321992-25),as well as the Dublin Port 3FM project and all other relevant projects in the International Council for the Exploration of the Sea (ICES) Celtic Sea and Greater North Sea ecoregions, regardless of project type. It is further requested that the applicant confirm that the

now published documentation pertaining to the Irish Sea Phase 1 ORE projects, which have all been submitted to the Commission for planning consent since this application was submitted, have been fully incorporated into the cumulative effects assessment.

In accordance with the NSIP (2024) tiered approach, it is requested that the subject proposal and each of the Irish Sea Phase 1 ORE projects and the Dublin Port 3FM project be classified under Tier 1 ("Other existing and, or approved development submitted applications under the Planning Acts or other regimes but not yet determined"). The applicant is requested to update the application documentation, where relevant.

In the interests of comprehensiveness and for ease of reference, the applicant is strongly encouraged to liaise with the other Irish Sea Phase 1 ORE Project applicants and Dublin Port in the preparation of the above assessment and drafting of the tables attached in Appendix B.

6. Marine Geology, Sediments and Coastal Processes

a) The applicant to provide additional details, clarification or justification explaining the apparent gap in data collection and interpretation of surficial sediments between figures 6.9 and 6.11, of Chapter 6 of the submitted EIAR.

b) The modelling undertaken in Appendix 6.3 does not demonstrate the schematisation of spatial variation of bed friction or bed shear stress values across the model domain. The applicant is requested to submit additional detail/plots in an updated review of the modelling undertaken.

c) It is acknowledged that the applicant has undertaken a comparison of wave and hydrodynamic regime, however, Section 5.1.2 of Appendix 6.3 (Modelling Report) only presents results in a report format without output plots verifying the reported results. The applicant is asked to provide the relevant model output plots verifying the reported results in section 5.1.2 of Appendix 6.3. Furthermore, the applicant is requested to directly address the impact of Wave and Hydrodynamic blockage on coastal processes utilising pre- and post-development comparative plots of the model domain.

d) The coupled hydrodynamic and wave modelling that has been submitted and incorporated into the submitted EIAR assessments is acknowledged. Notwithstanding this, however, the applicant is requested to undertake a greater

range of sensitivity runs to examine the coupled model performance to allow more detailed consideration of potential impacts on physical processes. Model scenarios should include an assessment of extreme events e.g. 10%, 5%, 2%, 1%, 0.5% and 0.2% Annual Exceedance Probability (AEP) event horizons and joint probability occurrences of tidal, surge, and wave conditions, while also providing for climate change

e) The applicant is requested to include the impact of wind blocking on coastal processes. It is requested that this be addressed through site specific wake and wind field modelling considering the entire windfarm layout.

f) The applicant is requested to assess the longer-term impact of the dredge dispersal modelling on the seabed morphology (operational plus decommissioning phases).

g) (i) The Commission notes that a detailed assessment of the impact of the construction, operation and decommissioning phases arising from the provision of the offshore export cables through the intertidal zone has not been undertaken in terms of coastal processes. The applicant is therefore requested to provide a comprehensive assessment of the impact of these works on sediment transport, morphology, and intertidal sediment releases (including potential resuspension of contaminated sediment) as well as wave and currents across all phases of the proposed development within the intertidal area.

(ii) The potential for contaminated sediments to be released during installation of the landing cable and the construction process through the intertidal area has not been assessed. The applicant should provide details of how it is intended to deal with this issue and clarify whether sediment chemical analysis and waste classification analysis along the proposed cable landing route commencing at the landing site through the intertidal area is required, and/or how any contaminated material may be comprehensively dealt with (including any proposed waste licencing requirements arising from the presence of contaminated or hazardous material arising). Furthermore, particle tracking modelling assessing the potential transport of any contaminants should be carried out if contaminated sediments are identified.

(iii) The Commission notes that the applicant is proposing the use of trench excavation (for a distance approximately 350m offshore from the HWM) throughout the intertidal zone. From the details submitted this construction methodology does not appear to be consistent with best practice (as noted in the DAU submission) in terms of on-shoring of export cabling through this sensitive intertidal area which is

designated as both an SAC and SPA. In this regard the Commission notes that the application documentation does not give sufficient (or any) consideration to the use of horizontal directional drilling (HDD) as a construction method through the intertidal area. The applicant is therefore requested to submit comprehensive environmental justification for the proposal to use trenching in this instance while also ensuring the protection of sensitive environmental features, species and habitats. Alternatively, in the absence of sufficient environmental justification for the use of intertidal trenching the applicant is requested to update all relevant application documentation to provide for comprehensive assessment of HDD through the intertidal area to facilitate the onshoring of the export cabling and amend any relevant responses to further information queries (such as at G(i) and G(ii) above) accordingly.

h) In relation to classification of receptor sensitivity throughout Section 6.10 (Impact Assessment) of the submitted EIAR, the Commission notes that a blanket classification of receptors in the study area as being of low sensitivity has been applied, notwithstanding that works in the intertidal and proximate areas are in locations designated as SAC and SPA. The designation of such receptors as having low sensitivity runs contrary to table 6-4 of the EIAR. The applicant is therefore requested to amend, clarify, and/or justify the impact assessment within section 6.10 as required to address this issue.

i) In relation to all sediment disturbance modelled, the applicant is requested to provide the following:
    i. Statistical maximum for sediment deposition depths (cm) and suspended sediment concentration (mg/l) across the model domain for the entire construction campaign (including piling, cabling, dredge deposition etc.) presented in the form of heatmaps. This should include heatmaps of predicted percentage change relative to the baseline across the relevant key temporal periods. The applicant must confirm that the modelling used reflects the baseline conditions in terms of the modelled particle size used, i.e., the modelling should be aligned to known baseline conditions. These heatmaps should be used to inform any further ecosystem and cumulative assessments such as smothering or impaired foraging within the relevant sections of an updated EIAR.
    ii. Similar to I(i) above, the sediment deposition depths and suspended sediment concentration across the model domain for the entire operational campaign should be presented as heat maps of the percentage change relative to

baseline and used to inform relevant EIAR ecosystem and cumulative assessments.

iii. Results should be illustrated on appropriately scaled drawings/maps and be provided in GIS format (see Appendix A, Technical Details).

j) The longer term morphodynamic impact of the development including cable landing, scour protections and wind turbine foundations is not assessed. This requires coupled wind wave hydrodynamic and sediment transport modelling. The applicant is requested to submit modelling of the morphodynamic response of the coastline to the proposed development. Morphodynamic modelling is to be extended over a series of longer time horizons which must account for the proposed operational phase plus decommissioning and compared with the non-developed scenario for same time period.

k) Any additional modelling in relation to physical processes, which increase the existing significance of effect in that chapter and in interrelated chapters, will also require revised consideration as part of any updates in assessments associated with relevant benthic, ecology, fish and shellfish, marine mammal, ornithology assessments relevant to the various submitted EIAR chapters and the NIS.

l) The Commission notes that option B is stated as the representative scenario for Impact 3 “Temporary disturbance to seabed resulting from pre-sweeping/sandwave levelling activities leading to increases in suspended sediment concentrations, and associated deposition”, in Table 6-18. Table 6-18 summarises table 1 of Appendix 6.2, however, table 1 does not provide any justification as to how option B has a greater “total area disturbed during pre-sweeping/sand wave clearance”. The applicant is requested to provide further details clarifying this matter.

m) Table 6-17 of Chapter 6 lists geotechnical surveys among the potential disturbances to the seabed under impact 1, however, geotechnical surveys (which are noted as being required to confirm infrastructure locations) do not appear to be referenced further in table 6-18 or within the impact assessment set out in section 6.10. The applicant is requested to provide further details within the impact assessment in relation to this matter and amend the relevant sections of the EIAR as appropriate.

7. Ornithology

Citations

a) Some citations throughout the Offshore Ornithology Environmental Impact Assessment Report (EIAR) chapter 10, Natura Impact Statement (NIS) and associated appendices, including those supporting assessment approaches, justifying sensitivities, or informing mitigation measures, are mentioned in the text but are not provided in the reference list. (Examples include: Canning et al. (2013a); Canning et al. (2013b); and Perrow et al. (2011)).

   The applicant is requested to review the in-text citations throughout chapter 10 of the EIAR and the ornithology discussions in the NIS and to ensure that a complete reference list is provided for the EIAR chapter, NIS volume, and all supporting appendices.

<u>Baseline Data</u>

b) Migratory Waterbirds:
   The Development Applications Unit (DAU) notes that a significant number of migratory waterbirds (in terms of species and absolute numbers) migrate to and from Ireland across the Irish Sea. The DAU observation raises concerns in relation to the lack of sufficient collection of empirical data in the EIAR, combined with the acknowledged low confidence levels applied in relation to avoidance rates in the migratory Collision Risk Modelling (mCRM) Tool. The DAU states the information submitted is insufficient to assess the migratory movements of birds through the development area. The DAU has concerns that the proposed development has the potential to have significant impacts upon migratory waterbirds and the Conservation Objectives of the Special Protection Areas (SPAs) for which they are listed. The DAU recommends that the applicant develops and implements more appropriate survey methodologies to detect and robustly characterise and assess the level of bird migration through the proposed development area, in order to achieve this in a satisfactory manner the Commission notes that the applicant must work collectively with the other Irish Sea Phase 1 ORE projects.

   The Commission notes there is limited information on flux or passage of birds through the proposed array area itself during migration (east-west and north-south). The data query is only partially filled by the applicant's approach to assessing collision risk, where GIS and straight-lines have been applied to identify potential migration pathways/flight routes to assess the proportion of flights (as a proxy for population) which may pass through the proposed array area.

Having reviewed all the information presented, the Commission requests that further assessment is carried out regarding impacts to migratory species. The applicant is requested to address the purported data gap relating to migratory birds to enable the assessment of potential impacts of the proposed development. Radar (horizontal and vertical surveys) (or similar) at the array site during peak migration periods should be utilised to provide site-specific data, which could be used to support the applicant's current assessment and provide quantitative information on passage of birds to feed into collision modelling. Should radar surveys not be conducted and an alternative survey methodology utilised, comprehensive justification for the alternative should be provided. Peak migration periods during which data are to be collected can be further informed through review of existing data and published literature relevant to the project area and region. Whilst key migration times are usually taken as being spring and autumn, the Commission considers that migration information during the winter months would also be of assistance to the assessment (e.g. irruptive cold weather movements from the continent and UK). The applicant is invited to submit additional data in this regard, setting out details of winter month migrations and/or justifying why such information is not required to inform an assessment and conclusion in relation to impacts.

The applicant should note reliance on literature to fill knowledge gaps, while useful, does not provide adequate data to ensure a comprehensive assessment of potential effects on birds.

c) Terrestrial Bird Species

The DAU considers there to be deficiencies in the assessment of land-based avifauna, with Collision Risk Modelling (CRM) input data based on general assumptions. The DAU recommends additional data and consideration of survey/monitoring options such as targeted deployment of passive acoustic devices at headlands and offshore nocturnal boat transects; review of available ringing/tracking data for migratory species and/or species which are known/likely to conduct staging/dispersal movement; and thermal imaging devices (handheld/drone) surveys targeted at likely peak periods of passage.

The Commission therefore requests that further assessment is carried out regarding impacts on terrestrial bird species and, having regard to the above comments, that the purported data gap and potential impacts of the proposed development on terrestrial birds is addressed.

d) Baseline Data Vintage:
The Commission queries the age and relevance of the submitted aerial and boat-based survey data used in the application, in particular considering the 2022 Highly Pathogenic Avian Influenza (HPAI) season, which had significant negative impacts on a range of seabird species. The applicant is requested to provide justification that the original digital aerial survey and boat-based data remain relevant and appropriate at the point of submitting additional information to support the proposed development.

e) Roseate Tern:

Breeding Roseate Tern *Sterna dougallii* is a Special Conservation Interest (SCI) of the Rockabill SPA, which supports a population of 1,642 breeding pairs (Burnell et al., 2023). Roseate Tern migrate across the Irish Sea including between this colony and Coquet Island SPA (188 breeding pairs) in the UK. Migrating Roseate Tern may pass through the Codling Wind Park (CWP) array site (Redfern et al., 2020). While Roseate Tern usage of the array site can be informed by Digital Aerial Survey (DAS) data, these data are not appropriate to inform passage of migratory birds through an area. The applicant does not appear to have considered any Roseate Tern tracking studies (e.g., Redfern et al., 2020) in their assessment.

The Commission requests that the applicant obtains or sources additional information on Roseate Tern flux/passage through the CWP array site and submits revised assessments fully informed and updated by the additional Roseate Tern data.

f) Red-throated Diver:
Red throated Diver *Gavia stellata* is a species known to be highly sensitive to offshore wind farm developments due to displacement effects. A 4 km buffer is applied in the project specific DAS used to inform the baseline in the CWP application. The Commission note that for Red-throated Diver, the best available advice as presented in the UK Joint SNCB 'Interim Advice On The Treatment Of Displacement For Red-Throated Diver' (SNCB, 2022) states that:

> "For non-breeding Red-throated Diver, a pragmatic displacement buffer of at least 10 km is recommended for use in site characterisation, impact assessments and post-consent monitoring where a plan or project is within 10 km of a Special Protection Area (SPA) designated for non-breeding red throated diver."

The Commission notes that the proposed development is located within 10km of The Murrough SPA, for which wintering Red-throated Diver is an SCI. The SPA supports a wintering population of up to 131 individuals based on the ObSERVE programme data or up to 215 individuals based on the Irish Wetland Bird Survey (I-WeBS) data (NPWS, 2024).

The applicant is requested to obtain and analyse additional data on Red-throated Diver density and abundance to fill the data gap between 4km and 10km to the west of the array site (i.e., in the direction of The Murrough SPA). It may be possible to obtain suitable data from existing studies, such as the ObSERVE programme aerial survey data collected in 2016, 2017, 2021, 2022 and 2023 (Jessopp et al., 2018, and Giralt Paradell et al, 2024). The applicant is also requested to provide justification that any data obtained and used to fill the data gap is suitable and fit for purpose. The additional data should be used to update and revise the impact assessment from the proposed development in relation to displacement of Red-throated Diver from The Murrough SPA and within 10km of the array area boundary (refer also to Item 7(k) below).

<u>Baseline Environment</u>

g) Regional Reference Populations:
The robustness of population calculations used to estimate the regional breeding season populations is important in assessing the potential effects of the proposed development. The Commission notes that the EIAR presents two methods for estimating regional breeding season populations against which impacts are assessed.

Method 1 summing the number of breeding adults in the breeding season and the number of immatures in the previous non-breeding season. Method 2 applies the ratio of adults to immature birds in the population to the number of breeding adults in the breeding season.

The Commission acknowledges that the applicant has assessed impacts against populations derived from both methods. However, it is noted that Method 2 is considered to be the more appropriate and precautionary method to apply for estimating regional breeding season populations. The applicant is requested to clearly present the values and equations used to derive the population estimates, including their sources (e.g. a list of colonies or sites included within the reference populations), to allow validation of the methodology.

h) Manx Shearwater

The offshore ornithology baseline has primarily been informed by site specific DAS data collected over the array site plus a 4km buffer. DAS are conducted under good weather conditions in daylight hours, therefore, may underrepresent species which are more active between dusk and dawn.

The applicant is requested provide narrative on the appropriateness of the baseline surveys to characterise Manx shearwater *Puffinus puffinus* usage of the array site, considering its nocturnal activity. The Commission therefore requests the applicant to set out in detail and consider any data gaps and limitations, and the implications of these, in undertaking revised assessments in the EIAR and in the NIS.

<u>Impact Assessment</u>

i) Displacement Rates:

The Commission is satisfied that the applicant has used the industry standard Displacement Matrix approach. However, the Commission notes that the applicant has based conclusions in relation to displacement on its preferred rates for displacement and mortality of auks (Common Guillemot *Uria aalge*, Atlantic Puffin *Fratercula arctica*, and Razorbill *Alca torda*) and Northern Gannet (50% displacement and 1% mortality for auks, 70% displacement and 1% mortality for Northern Gannet *Morus bassanus*) instead of on industry recommended rates, and has taken these rates forward to Population Viability Analysis (PVA). The Commission queries the applicant's use of preferred rates in relation to auks, due to CWP's close proximity to the coast and to breeding auk colonies.

The applicant is therefore requested to review the EIAR and NIS to apply rates more appropriate to the location and scale of the development, and in line with industry recommendations (60% displacement and 1-5% mortality for auks; and 70% displacement and 1-3% mortality for Northern Gannet; NatureScot, 2023), to inform assessment and enable comprehensive conclusions. Where impacts with these rates result in a >1% increase in baseline mortality rate, the mortality estimates should be taken forward to PVA.

The applicant is requested to review the displacement and mortality rates used in the EIAR and NIS for auk species (common guillemot *Uria aalge*, razorbill *Alca torda*, and Atlantic puffin *Fratercula arctica*). The justification provided for using 50% displacement and 1% mortality is not considered appropriate for CWP due to its close proximity to the coast and to breeding auk colonies. Therefore, more appropriate rates (i.e. those recommended by NatureScot (60% displacement and 1-

5% mortality)) should be applied. Assessment conclusions based on these recommended rates must also be presented and considered within the EIAR and NIS.

j) Black-legged Kittiwake:
The issue of Black legged Kittiwake *Rissa tridactyla* displacement has been set out in the EIAR, NIS, and associated appendices and supporting documents. The applicant has followed the approach taken for various English Offshore Wind Farm (OWF) projects in the North Sea, where Black legged Kittiwake has been screened out for displacement effects. However, these projects are generally much further offshore and distanced from breeding colonies, whereas the CWP array site is located more proximate (i.e. 10.5km) to the nearest Black legged Kittiwake breeding colony at Wicklow Head SPA.

The Commission notes that the species is a SCI for a number of SPAs within foraging range of the array site. Black legged Kittiwake has variable responses to OWFs, ranging from up to 45% displacement effects to mild attraction effects, varying at different latitudes, distances from colonies, and seasons (e.g., Peschko et al., 2020; Pollock et al., 2024). Having reviewed the information presented, the Commission disagrees with the screening out of Black legged Kittiwake for displacement for reasons related to the proximity of the proposed development to the coast and to breeding colonies.

The applicant is requested to use the Displacement Matrix approach, as has been done for other species. Here, a 30% displacement rate should be applied, and mortality rates should be based on the best available evidence, but with a range of rates presented, from 1% to 3%, as advised by NatureScot (2023). The applicant, based on the revised findings, is requested to re-analyse the displacement impacts on the regional population of Black legged Kittiwake in the EIAR and against the Conservation Objectives of the relevant SPAs in the NIS to ensure comprehensiveness of its Appropriate Assessment conclusions.

k) Red-throated Diver:
In the EIAR, displacement of Red-throated Diver is assessed, where effects up to 4 km from the array site are considered. However, it is well-evidenced that displacement impacts can occur at much greater distances, for example: Heinänen et al. (2016); Žydelis et al. (2016); Mendel et al. (2019); Heinänen et al. (2020); and Vilela et al. (2020).

The Commission therefore requests that the applicant reconsiders its assessment of displacement effects on Red-throated Diver associated with the array site. Red-throated Diver is highly sensitive to displacement effects associated with OWFs and vessel traffic (e.g., Furness et al., 2013; Bradbury et al., 2014; Fliessbach et al., 2019). The applicant is requested to assess displacement effects up to 10km from the proposed array site during operation, with the assessment informed by additional data, as discussed in Item 7(k) above.

In the NIS, displacement of Red-throated Diver at The Murrough SPA is assessed using the Displacement Matrix approach, where the applicant has applied a 50% displacement and 1% mortality rate to an estimated proportion of the SPA population which is within 10 km of the CWP array site. The applicant has used the most recent 10 year (winter 2011/12 to 2020/21) peak mean from the I WeBS data (74 individuals) as the SPA Red throated Diver population. The proportion of the SPA that is within 10 km of the array site (37.06%) has been used to determine the proportion of the Red throated Diver population which may be displaced. The applicant has calculated that 50% displacement and 1% mortality of 37.06% of the Red-throated Diver population (27.42 individuals) equates to an annual mortality of around 0.14 individuals.

The Commission has concerns regarding the methodology and assumptions made in this assessment, as outlined below:

1. The Red-throated Diver population of The Murrough SPA is 131 individuals (NPWS, 2024), as informed by the ObSERVE programme data. Impacts should be assessed against this population, rather than the 10-year mean from the I-WeBS data, which may not fully account for individuals further from the coast or the survey observation points.

2. The assessment is based on the assumption that Red-throated Diver density and distribution is uniform across The Murrough SPA. This is not the case, the ObSERVE programme data show clear variation in density in the SPA (Jessopp et al., 2018).

3. Displacement should not only consider the response of individuals to a stimulus, but it should also consider the characteristics and importance of the area they are displaced from. For example, the population-level effect is likely to be of lower significance if birds are displaced from an area of low suitability supporting habitat than from an area of key foraging habitat.

In response to these issues, the Commission requests the applicant to undertake the following:

i. Impacts should be assessed against the Red-throated Diver population value of 131 individuals as informed by the ObSERVE programme data.

ii. The applicant must consider the variable density and distribution of the wintering Red-throated Diver throughout The Murrough SPA when assessing displacement effects up to 10km from the array site.

iii. The Commission requests that the applicant obtains/sources and analyses appropriate and robust Red-throated Diver abundance and distribution data covering the overlap between the 10km buffer around the CWP array site and The Murrough SPA. The results of the review and analyses can provide important insight into the importance of the area where the SPA overlaps the 10 km buffer to inform the Appropriate Assessment (AA) conclusions.

iv. The Commission requests that the applicant considers supporting habitat within The Murrough SPA, specifically the proportion of the SPA which is within 10 km of the CWP array site. An updated and comprehensive assessment within the NIS is required based on these considerations, discussion on confidence of the assessment, acknowledgement of limitations or data gaps, and justification for assessment methods. The updated assessment must include environmental data pertaining to wintering Red-throated Diver supporting habitat.

The approach outlined above may entail obtaining the most recent ObSERVE programme aerial survey data to understand density in the easternmost 2.5 km of The Murrough SPA. The assessment could also be supported by additional site-specific survey data covering the wintering distribution and abundance of Red-throated Diver within The Murrough SPA and within 10 km of the CWP array site. Additional environmental data associated with Red-throated Diver distribution and abundance (i.e. supporting habitat), combined with Red-throated Diver observation data and/or a literature review could also be used to better understand the importance of this specific area and its ability to support wintering Red throated Diver.

<u>Collision Risk</u>

l) Model Parameters:

The Commission notes that a 0m tidal offset (the difference between Mean Sea Level (MSL) and Highest Astronomical Tide (HAT)) has been applied in collision modelling for all scenarios, which is standard practice for floating OWF projects. As CWP employs fixed bottom foundations, an appropriate tidal offset should be applied. The applicant is requested to provide justification for using a 0m offset or to update the model and obtain new collision estimates.

A combination of site-specific and generic flight height distribution (FHD) data has been used in collision modelling, with site-specific data informing assessment conclusions where available. The Commission therefore requests that the applicant uses generic FHD data to inform assessment conclusions with site specific data presented and discussed for additional context where relevant.

m) Northern Gannet:

The Commission notes the flying bird densities used for Northern Gannet *Morus bassanus* collision risk modelling (CRM) have been reduced by 70% to account for macro-avoidance of the array site, with the collision estimates from these values taken forward to the assessment. This approach has been used in English projects, and is advised by Natural England (JNCC et al., 2024; Parker et al., 2025). However, projects where this approach has been accepted (e.g., Hornsea Four) are located much further from the coast and breeding Northern Gannet colonies than CWP.

NatureScot (2025) advice is that Northern Gannet input densities are not reduced during the breeding season but, with justification, may be reduced by 70% during the non-breeding season. The applicant is requested to apply this approach when assessing collision risk to Northern Gannet, as CWP is more akin to Scottish OWFs than English OWFs having regard to its distance from the coast and the nearest breeding colony. The applicant may also present and discuss the reduced collision estimates for additional context.

n) Proxy Species:

When screening for seabird collision risks in the EIAR (Table 10-115) Black throated Diver *Gavia arctica* has been used as a proxy for Red-throated Diver, European Shag *Gulosus aristotelis* has been used as a proxy for Great Cormorant. Both of these species are included in the sources cited in the table headers. Additionally, Furness et al. (2013) and Bradbury et al. (2014) present sensitivities for a wide range of seabird species.

The applicant is requested to consider species-specific sensitivities within their assessments where available and must provide appropriate and clear justification if proxy species or data are used.

Other Impacts

o) Artificial Light Emissions:
Manx Shearwater *Puffinus puffinus* is identified as a high importance receptor in the EIAR, with a maximum bio-season mean peak density of 4.9 birds/km² in the array site plus 2 km buffer. Displacement effects (where 50% displacement and 1% mortality rates are applied) have been assessed in the EIAR, however, the effects of artificial light emissions are not assessed. There is evidence to suggest that Manx Shearwater is sensitive to artificial light emissions (Guilford et al., 2018; Syposz et al., 2018; Syposz et al., 2021; Deakin et al., 2022), with studies showing increased collision with objects or grounding.

The applicant is requested to assess the effects of artificial light emissions associated with CWP on Manx shearwater in the EIAR and, where applicable, in the NIS. The Commission acknowledges that effects may be difficult to quantify in terms of changes to collision risk or displacement effects, however, a qualitative assessment and consideration of effects is required.

p) Onshore Substation:
The Commission notes that increased predation risk to breeding Common Tern *Sterna hirundo* and Arctic Tern *S. paradisaea* associated with the presence of the onshore substation is assessed in the EIAR and mitigation is proposed. The mitigation measures include design considerations to reduce the ability of predators to perch on top of the structure. This mitigation is welcomed by the Commission.

However, it is important that the perceived threat of predation (e.g., by reducing visibility to see predators) is also considered in the assessment. Terns primarily make use of the CDL Dolphin at present, which is considered to be due to the 360° visibility offered. The applicant is requested to assess the effects of the perceived threat of predation (i.e., reduced sight lines and visibility) to terns using the CDL Dolphin and amend the relevant assessments within the EIAR and NIS accordingly. It is acknowledged that the CDL dolphin is outside the boundary of the SPA, however, individuals using this dolphin are considered part of the SPA population and counted under the same Seabird Monitoring Programme (SMP) site. Loss of this habitat may result in increased pressure on alternative areas within the SPA.

q) Intertidal Birds:
The applicant has discussed the proportion of the regional populations of intertidal birds observed in surveys, and has estimated the number of birds which may be affected by disturbance. However, the number of birds potentially disturbed has not been linked back to the regional populations.

The applicant is requested to present information on the proportion of populations which may be affected and to consider whether this could result in a significant disturbance effect. This should be applied to both the EIAR, where regional populations are considered, and the NIS, where classified SPA populations are considered.

If a significant proportion of the population is predicted to be affected, appropriate mitigation must be implemented to reduce impacts to an acceptable level. The assessment must be based on best available evidence and conclusions justified.

Population Viability Analysis:

r) Population Viability Analysis Threshold:
The Commission notes that the population-level effects have been investigated through Population Viability Analysis (PVA) where project-related impacts result in a >1% increase in baseline mortalities. For the NIS, this has been compared against the relevant season population, however, for the EIAR, only the annual population is considered.

Table 10-119 in Chapter 10 of the EIAR presents the CRM results for Great Black-backed Gull *Larus marinus* and compares the estimated mortalities with the reference populations. When compared against the breeding population calculated via Method 2 (item 7(g) above refers), the increase in baseline mortality is 1.886%, which exceeds the 1% threshold for PVA.

The Commission therefore requests the applicant to review estimated mortalities and increases in baseline mortality for all species, and to run PVAs to assess population-level effects where project-related impacts represent a >1% increase in baseline mortalities in any single season, annually, or SPA population. The EIAR and, where relevant, the NIS must be updated accordingly.

s) Regional Reference Populations:
As previously noted, where impacts in the EIAR or NIS represent a >1% increase in mortality, PVA has been used to investigate population-level effects of the increases

in mortality. For the PVA input parameters, the calculated regional reference populations have been entered as 'breeding adults' as starting populations. As the breeding season regional reference populations have been adjusted to account for immature birds, the applicant is requested either:

1. to consider only breeding birds (i.e. non-adjusted regional reference populations) in the PVA starting populations, or

2. to select 'all individuals' as the starting population type, as this is more representative where immatures are included.

and amend their assessments/documentation accordingly.

t) Demographic Rates and Parameters:
It is noted that the applicant has national and global parameters in PVA models, however, these are not necessarily the most appropriate demographic rates to use for all species. Where available, regional rates (e.g. Irish Sea) or colony specific rates (where the data are considered appropriate and robust) must be applied. If regional or local rates are not available or not considered appropriate, global rates may be used with suitable justification.

The applicant is, therefore, requested to update the PVA models and assessment conclusions using the most appropriate demographic rates for each species and colony. This must be applied to both the EIAR (regional populations) and the NIS (SPA populations).

<u>Mitigation and Monitoring</u>

u) Red-throated Diver:
The Commission notes that mitigation measures to reduce vessel-related disturbance of Red-throated Diver are discussed in Chapter 10 (Ornithology) and 33 (Summary of Mitigation and Monitoring) of the EIAR and in Volume 5 of the NIS and comprise production of an Ecological Vessel Management Plan (EVMP) which has been submitted as supporting documentation. The EVMP includes a range of measures in relation to Ornithology (Section 3 of EVMP refers).

The applicant is requested to update the submitted EVMP to include a clear commitment ensuring that all measures which aim to reduce disturbance of Red-throated Diver are applied to vessels operating or transiting inside or within 2km of The Murrough SPA from November to March, inclusive.

The Commission also requests that the applicant reviews the findings of recent studies, such as Burger et al. (2019) and Mendel et al. (2019), where vessel speed, number of vessels passing, and vessel size have been linked to Red-throated Diver disturbance and resettlement periods. The applicant is requested to include an appropriate restriction on vessel speed. In this regard the Commission recommends that vessels are restricted to 40 km/h or 21.5 knots when operating or transiting inside or within 2km of The Murrough SPA based on findings by Burger et al. (2019).

v) Roosting Terns:
The Commission notes that mitigation to reduce disturbance to roosting Sandwich Terns *Thalasseus sandvicensis* and *Sterna spp.* terns (Common, Arctic, and Roseate Terns) during construction has also been proposed. The mitigation contains a suite of measures and restrictions relating to onshore construction works, where it is stated that these measures will be in place between one hour before sunset to sunrise the following day from 15th July to 31st August, inclusive.

NPWS (2015) is cited as the source for applying restrictions from one hour before sunset, however, this reference is not included in reference lists, Chapter 10, nor 33, nor in the NIS. The applicant has previously been requested to address all missing citations throughout the Ornithology chapter of the EIAR, NIS, and relevant supporting appendices.

The proposed timing of the mitigation measures is contradictory to text presented in the NIS, where it is stated that "terns are not forming nocturnal roosting aggregations within South Dublin Bay (from sunrise until approximately two hours before sunset (Tierney et al., 2016))". This suggests that the mitigation should be applied from two hours before sunset to the following sunrise.

The Commission therefore requests that the applicant provides clarification on, and appropriate justification for, applying construction restrictions to reduce disturbance of roosting terns at one hour before sunset as opposed to two hours before sunset. The applicant is requested to produce and implement an adaptive monitoring and management plan to ensure mitigation measures are effective.

<u>Cumulative, In-combination and Transboundary Effects</u>

w) The applicant is requested to apply the further information points presented above to their cumulative effects assessment (EIAR) and in-combination assessment (NIS) and make relevant amendments as necessary.

The Cumulative Effects Assessment (CEA) must consider barrier effects to migratory birds, especially those migrating to and from sites that are directly west of the CWP array site.

Updated Data

x) The Commission notes that the 2024 ObSERVE II Programme Reports were published subsequent to the lodgement of the current planning application. The applicant is requested to review the outputs of the 2024 ObSERVE II Programme Reports, and incorporate these results within their ornithological assessments, as appropriate, updating the EIAR and NIS where relevant.

8. Subtidal and Intertidal Ecology

Survey Methodology and Data Gap

a) Imagery Data:
The Commission notes that no seabed imagery data was collected in the project-specific 2021 surveys (e.g., drop down video (DDV)), and it is unclear why it had not been included in the methodology for these surveys.

The Commission further notes that in the earlier published 2020 Scoping Report, Section 9.3.2, it states: “Sampling will be undertaken using a combination of Drop Down Video (DDV) where there is harder substrate unsuitable for benthic grab sampling.” It is subsequently noted that of the 46 targeted sampling stations of the 2021 surveys, 5 were deemed unsuitable for grab sampling due to hard ground. No rationale for the exclusion of DDV data collection is presented in Appendix 8.3 and/or Chapter 8 of the EIAR.

While the Commission acknowledge that consultation on the baseline survey design and methodology was carried out and agreed prior to surveying (The National Parks and Wildlife Service (NPWS) and the Marine Institute (MI) in June 2021), it is not specifically stated if there had been agreement over the collection of imagery data (in EIAR Chapter 8 Table 8-1).

The applicant is, therefore, requested to provide confirmation on how the survey data collected was analysed to predict seabed habitats, and to provide rationale for why collection of imagery data was not included in the survey scope.

b) Potential Array Data Gap:

The Commission notes that on the basis of the information submitted that there is a potential data gap within the south-west region of the array site.

i. Sampling Design - EIAR Appendix 8.3 Section 2.2.1 states “A carefully designed stratified sampling programme was developed based on geophysical survey data and other publicly available data on benthic habitats.” However, on review of Appendix 8.3 Figure 5.6, the south-west region of the array site appears to have limited coverage in sampling stations. On the basis of the details within the submitted EIAR the Commission’s understanding is that the mapping of seabed habitats in this area is based on geophysical data only, although it is noted that a mosaic of different biotopes in that area has been predicted (EIAR Chapter 8, Figure 84). It is unclear if this potential data gap in this area was pre-determined as per the sampling programme, or is a consequence of being unable to successfully sample at 5 stations where ground was too hard and thus unsuitable to grab.

   The applicant is therefore requested to confirm if grab sampling was proposed to be undertaken in the south-west region of the array site, and if not, provide rationale and any further evidence or information that contributed to the identification of the mosaic of different biotopes identified in this area.

ii. Secondary Data - The Commission notes that the 2020 Scoping Report lists characterisation surveys undertaken at the Codling Wind Park (CWP) between 2001 and 2008 that are to be used to develop the Benthic and Intertidal Ecology baseline (Scoping Report - Section 9.3.1.1, Table 9.1). However, it is unclear on review of EIAR Chapter 8 if these earlier surveys had been included to support the more recent 2021 project-specific surveys, as these data sets are not listed in Chapter 8, Table 8.2. It is unclear if these datasets would have provided site-specific information across the CWP Planning Application Boundary (PAB), and across those areas that had not been able to be ground-truthed through grab sampling.

   The applicant is therefore requested to provide confirmation if these surveys listed in Scoping were used to support the baseline characterisation for Benthic and Intertidal Ecology in the EIAR, and if not, provide rationale as to why.

<u>Reef Habitat with the Planning Application Boundary</u>

c) The Commission notes that EIAR Chapter 8 Figure 8.3 (Special Areas of Conservation within the benthic and intertidal ecology study area) shows 'Predicted Annex I' reef habitat to overlap the CWP PAB (as reported under Article 17 of the EU Habitats Directive). However, it is also noted in both EIAR Appendix 8.3 (Section 6), and EIAR Chapter 8 (Paragraph 68), that "No Annex I habitats or Annex II species were recorded during the site-specific surveys of the Offshore Development area. Whilst the reef forming species *Sabellaria spinulosa* and *Sabellaria alveolata* were found in the array and cable corridor areas, abundances were relatively low, and no stations were classified as *Sabellaria* reef habitat."

The application documentation does not provide any clarity as to how the absence of Annex I reef (biogenic and/or rocky) within the CWP PAB has been determined and/or confirmed. The Commission, therefore, requests that the applicant provide further details and discussion on this matter as set out below:

i. Faunal Grab Data - The raw faunal grab data was not provided as part of the EIAR Appendix 8.3. This data should be included in the baseline survey report as it can inform relative abundances of key species, such as the reef building worms *Sabellaria spinulosa* and *Sabellaria alveolata*. The applicant is requested to include the subtidal faunal grab data from the 2021 project baseline surveys to provide information on the abundances of *Sabellaria spp*. recorded.

ii. Reef Assessment - The Commission notes that the applicant has not presented how the relevant survey data (geophysical and biological) had been reviewed and subsequently assessed for the presence/absence of biogenic and/or rocky reef. This is also in consideration, that no imagery data were collected from any of the sampling stations within the PAB.

Whilst the Commission notes that those biotopes predicted as present may not be indicative of Annex I reef habitat (e.g., *Spirobranchus triqueter* with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles), the applicant is requested to provide a statement and discussion of how this conclusion has been reached based on data that had been collected within the PAB (e.g. grabs and geophysical), and in light of the absence of imagery data being available to support a baseline characterisation for the CWP.

The applicant is therefore, requested to provide detailed evidence of how the absence of Annex I reef (rocky and/or biogenic) has been assessed and determined.

Annex I Reef within the Wicklow Reef SAC

d) The Commission notes that there is conflicting information presented in the EIAR Chapter 8 regarding the type of reef feature that the Reef QI within the Wicklow Reef Special Area of Conservation (SAC) represents and thus what is assessed. There is no consistency between what was presented in the baseline, and the identification of, and assessment of representative receptors.

Section 8.6.7 ('Habitats/Species of Conservation Importance'), Paragraph 68 states: "Sabellaria reefs are present in the Wicklow Reef SAC." Whereas, in the subsequent impact assessment sections, in Paragraph 210, the SAC is described, as "containing areas of current-swept subtidal reef comprised of cobbles, boulders, and an area of sloping bedrock……. the highly dynamic nature of the area is unlikely to support a stable biogenic reef". This statement in Paragraph 210, directly contradicts the statement made upfront in Chapter 8 (Section 8.6.7, Paragraph 68).

In addition, Chapter 8 Section 8.6.6 (Identification of Receptors) states that: "….[from] the establishment of the baseline environment, the existing benthic and intertidal ecology receptors have been identified and are provided in Table 8-9 below." However, in Table 8-9, the broad habitat type of 'Rock and biogenic reef' is listed, with the biotopes belonging to this being 'Infralittoral rock and biogenic reef', 'Circalittoral rock and biogenic reef', and 'Offshore circalittoral rock and biogenic reef'. In the impact assessment of Section 8.10.1 (for 'Impact 2 – Temporary increase in SSC during construction'), potential impacts for Wicklow Reef SAC are assessed under the Receptor Group of 'Subtidal Rock' only.

The applicant is therefore requested to confirm reef habitat type (biogenic and/or geogenic) present in the SAC and amend the EIAR (and NIS if necessary) to ensure there is consistency throughout on this matter.

Construction Activities and Mitigation for South Dublin Bay SAC

e) The Commission notes that whilst a level of detail has been provided in EIAR Chapter 4 (Project Description) around the proposed construction activities at the landfall area, the impact assessment in EIAR Chapter 8 would have benefited from a clearer correlation with expected impact footprint(s) from open cut trenching (OCT).

The description of the potential impacts and related mitigation at the South Dublin Bay SAC is not clearly outlined in the EIAR and in the Natura Information Statement (NIS) in relation to Benthic and Intertidal Ecology.

Only area footprints (e.g. m^2 and km^2) are presented to describe the impact of 'Temporary habitat disturbance', with no estimated volume of sediment that will be disturbed (m^3). It is noted that burial depths are described as being a "minimum depth of cover of 1.4 m", therefore, indicating that trenching may be deeper. No further description of OCT activities has been presented in EIAR Chapter 8.

The Commission also understands that the cofferdam will only be installed at the top of the shore. Therefore, it is assumed that OCT without a temporary cofferdam installed will be undertaken for the majority length of the trench in the intertidal area. As such, the Commission does not agree with the statement: "Whilst construction activities in the intertidal and landfall areas such as open cut trenching will disturb the sediment, the works will be conducted at low tide and as such have no potential to lead to increases in SSC" (EIAR Chapter 8 Paragraph 158). Following tidal inundation, disturbed sediments will generally be at greater risk of mobilisation than undisturbed sediments. Furthermore, any plumes generated from construction activities in the shallow infralittoral zone may also overlap the intertidal area.

The applicant is, therefore, requested to review and update the EIAR and NIS for Benthic and Intertidal Ecology, to provide a more robust assessment of risk to the Dublin Bay SAC and its features. Clear presentation to OCT and its expected footprints would be beneficial to the assessment sections associated with this activity. The applicant is advised that further to the request under 6(g)(iii) (above) the updated benthic and intertidal ecology assessment should consider in full all construction methodologies considered and proposed at this location.

<u>Long-term Habitat Loss</u>

f) In EIAR Chapter 8, Paragraph 114 and 297, two different percentage values are presented for the spatial extent of coarse sediments within the array site. Paragraph 114 states up to 99.997%, whilst Paragraph 297 states c.0.99%. Whilst assumed this may be a typographical error, the values are to be confirmed. The applicant is requested to confirm percentage loss of sublittoral coarse sediments

<u>Screening of Wicklow Reef Special Area of Conservation</u>

g) The Commission seeks further clarity on the rationale for Wicklow Reef SAC being screened out for assessment in the NIS. In Volume 3 NIS (Screening) Table 3-1, Wicklow Reef SAC is screened out for assessment, citing hydrodynamic conditions, concluding that there is no potential for any connectivity with the CWP project for the impacts of 'Increased SSC leading to smothering' and 'Remobilisation of contaminated sediments'.

In Volume 3 NIS (Screening) Table 2-1, under the pressures of 'Temporary increases in suspended sediments/smothering' and 'Remobilisation of contaminated sediments', the following zones of influence (ZoIs) for these impact pathways generated via dredge disposal and /or cable installation are described:

- 4-10 km eastwards for plumes generated in the array site; and
- <7 km eastwards, 5 km south eastwards, and 4 km westwards for plumes generated in the offshore export cable corridor (OECC).

The Wicklow Reef SAC is located to the south-west of the array site, and south of the OECC (see Chapter 8, Figure 8.3). In Volume 3 NIS (Screening) Table 3 -1, the SAC is listed as 4.91 km from the PAB. Therefore, on review of the predicted maximum extents of plumes, there is the potential for overlap with the SAC. The Commission also notes that within the SAC, Annex I reef feature is predicted to cover 100% of the site and therefore, if there is an overlap with the SAC boundary it is likely to also overlap this designated feature.

Furthermore, the Commission also notes that in EIAR Chapter 8, potential impacts on the Wicklow Reef SAC are assessed, where it is presented as located within the 10km predicted sediment plume extent of the Benthic and Intertidal Ecology Study Area (Chapter 8 Figure 8.3).

The applicant is therefore requested to review the screening decision for Wicklow Reef SAC in the NIS. If no change is required (the SAC is to remain screened out), the applicant is requested to provide further rationale and justification to support this outcome. However, in the absence of sufficient justification in relation to the points raised above, the SAC should be brought through for further consideration, assessment, and review in the NIS.

<u>Screening of Impacts and Pressures and Associated Terminology</u>

h) Scour effects from Placement of Infrastructure:

The Commission notes that indirect effects of scour on Benthic and Intertidal Ecology from the long-term installation of infrastructure above the seabed has not been considered and/or assessed in the EIAR Chapter 8.

Chapter 8 lists the impacts that are to be scoped in for assessment (in Table 8-11), however, it does not list those to be scoped out and a rationale provided.

Whilst the placement of scour protection will lead to protection of the assets themselves (e.g., cables and monopile foundations). The placement of protection on top of, and elevated above the seabed may locally affect hydrodynamics, resulting in scour effects on benthic communities throughout the operational lifetime of the CWP.

EIAR Chapter 8 states that the scope of assessment was agreed during consultation. However, in Chapter 8 Table 8-1 (consultation responses relevant to subtidal and intertidal ecology), it does not detail the consultation conclusions for the risk from scour through localised changes in marine processes. It is noted that in EIAR Chapter 6 (Marine Geology and Coastal Processes) that the impact 'Scour around installed structures and associated sediment transportation leading to changes in seabed composition, structure or morphology' was scoped in for assessment. On the basis of the documentation submitted it is currently unclear as to the outcome of the consultation agreed for Benthic and Intertidal Ecology in reference to this related impact pathway.

The applicant is therefore, requested to provide the full list of, and rationale of those impacts scoped out of assessment in the EIAR in relation to Benthic and Intertidal Ecology. Should there be insufficient rationale in relation to any elements (particularly for 'Scour around installed structures and associated sediment transportation leading to changes in seabed composition, structure or morphology'), then the applicant is required to provide an impact assessment for the relevant receptor groups.

i) Effects not Considered in Screening in the NIS:
The Commission notes that for consistency, all effects/pressures not considered for screening in the NIS are to be presented and the rationale provided. For example, there is no statement presented in NIS Volume 3 Screening for why 'Accidental pollution events' has not been considered in the screening stage. However, a statement has been presented as to why effects arising from hydrodynamic changes from installation of CWP infrastructure is scoped out (Paragraph 18).

The applicant is therefore requested to provide the full list of, and rationale of those effects/pressures not considered for screening in the NIS.

j) Terminology:

The Commission notes that inappropriate descriptions for potential effects/pressures are presented in the NIS Volume 3 (Screening) (e.g., Section 2.1 Table 2-1).

In the NIS for Benthic and Intertidal Ecology, 'Direct impacts on habitats' considers direct physical habitat disturbance and/or loss. However, this listed impact, should instead be split out into two different separate effect/pressure pathways. One that considers the impacts of temporary habitat disturbance and loss (e.g., during trenching), and another which considers long-term/permanent habitat loss (e.g., from installation of infrastructure on the seabed).

The applicant is therefore requested to review and re-assess Benthic and Intertidal Ecology, 'Direct impacts on habitats' for South Dublin Bay SAC in the NIS. Separate assessments should be undertaken regarding the effect/pressure pathway of temporary disturbance and loss, and also that of permanent loss. The applicant should also consider item 6(g)(iii) above in relation to this issue.

<u>Sediment Contamination</u>

k) Data:

The Commission notes that data available on sediment contamination has not been suitably presented and subsequently incorporated in the impact assessments in the EIAR.

(i) Physicochemical sampling of intertidal sediments only included analysis for PSA. No contaminant sampling was undertaken for the intertidal areas. Proposed works at the landfall and in the intertidal area will include OCT and installation of a cofferdam as well as crossing of pipelines/existing infrastructure, resulting in direct physical disturbance and re-mobilisation of these sediments. No secondary data (if available) are used to describe the contamination quality of these intertidal sediments.
Consultation on the baseline survey design and methodology had been agreed prior to surveying (NPWS and the MI, June 2021 (as summarised in Chapter 8 Table 8-1), however, it is not stated if there had been agreement over the collection of physicochemical data.

The applicant is therefore requested to provide further information on consultation undertaken in relation to collection of intertidal sediment quality data (see also Item 8(l) below).

(ii) The survey data collected by Dublin Port Company (DPC) within the River Liffey (2022), that were used to characterise the baseline conditions, have not been adequately detailed. The applicant is therefore, requested to provide Dublin Port Company 2022 River Liffey sediment data and associated reports used to inform the baseline for Benthic and Intertidal Ecology.

l) Remobilisation of Contaminated Sediments:
The Commission notes that the impact of 'Remobilisation of contaminated sediments' (construction and decommissioning phases) on Benthic and Intertidal Ecology is not adequately assessed in EIAR Chapter 8.

Section 8.5 (Assumptions and limitations) discusses that as no data are available on the sensitivity or recovery of benthic habitats, that the impact has been assessed using best available evidence from the literature and using the sediment plume modelling. However, in the impact assessment Section 8.10.1 (Paragraphs 260-261) it states: "Benthic habitats are not assessed for the impact of remobilisation of contaminant sediments under MarLIN / MarESA due to the current evidence being extremely limited or completely absent for these receptors (Tyler-Walters et al., 2023). Habitats present in the study area, which may be affected by remobilised contaminated sediments are therefore considered to have the same sensitivity to this impact as that of Impact 2: Temporary increase in SSC, as their response to deposition of sediment, in absence of evidence to the contrary, is considered analogous with that of their response to deposition of contaminated sediments. Given this, the sensitivity of the subtidal and intertidal benthic habitats to the remobilisation of contaminated sediments are considered to be negligible to medium."

While the Commission acknowledges that the spatial impact of remobilisation of contaminated sediments may be analogous to that assessed for 'Temporary increases in SSC', however, the sensitivity of the receptors to this impact is not. Where one is a chemical impact pathway, the other is physical, and with biota exhibiting variation in their tolerance to contamination. There is no evidence currently presented within the application documentation to support this assessment of sensitivity. In addition, the assessment of impact magnitude overall lacks detail. For example, there is no reference to any spatial variation in contamination levels of the

sediments (e.g., between and within the River Liffey, and those sampled from the 8 stations within the offshore export OECC (Paragraph 264)).

The applicant is therefore requested to review and update the EIAR impact assessment for Benthic and Intertidal Ecology for the impact 'Remobilisation of contaminated sediments' for both intertidal and subtidal areas, as appropriate to account for potential differences in variation in magnitude.

Receptor Groups

m) The Commission notes that the identification of, and groupings of Benthic and Intertidal Ecology receptors have not been adequately presented and suitably assessed in the EIAR. The Commission's concerns in this regard are set out below:

(i) In EIAR Chapter 8 Section 8.6.6 (Identification of Receptors), it is not clear in Table 8-9 which receptors overlap the PAB and/or which are outside of it (e.g., within the 10km and/or 20 km buffer), and if any are representative of important features (e.g., Annex I habitats). Table 8-9 is described as listing those biotopes recorded from the site-specific surveys. However, 'Rock and biogenic reef habitats' are listed, where no biotopes belonging to this broad group had been identified from within the PAB during such surveys.
The applicant is therefore requested to update EIAR Chapter 8 Table 8-9 to provide clarity on:

- The relative location of different Receptor Groups within the Benthic and Intertidal Ecology Study Area; and
- Conservation importance (if relevant) for the Receptor Groups.

(ii) Biogenic reef habitat is listed in EIAR Chapter 8 Section 8.6.6 (Identification of Receptors) Table 8-9, under 'Rock and biogenic reef habitats'. However, biogenic reef habitat has not been assessed within the impact assessment for any relevant secondary impact pathways. This habitat is predicted as present within the 10km predicted sediment plume extent (e.g., as represented by 'Circalittoral Rock and Biogenic Reef' and 'Infralittoral rock and biogenic reef' in Chapter 8 Figure 8.7). Whilst the Commission notes it has a limited extent within this 10km buffer, on a precautionary basis this habitat should be assessed for relevant secondary impacts (e.g., 'Temporary increase in suspended sediment concentrations').
The applicant is therefore requested to include in the EIAR an assessment of secondary impacts on the receptor group 'Biogenic reef'.

Electromagnetic Field Assessment

n) The Commission notes that the assessment of risk from electromagnetic field (EMF) emissions in EIAR Chapter 8 does not align with that presented for Chapter 9 Fish and Shellfish Ecology.

EIAR Chapter 8 has not presented calculated/estimated values for magnetic field emissions. In Table 8-12 (a representative scenario summary) for 'Impact 4-Presence of EMF and/or temperature changes resulting from presence of electrical infrastructure', the parameters listed relate only to subsea cable lengths (km), minimum depth of cover (m), and voltages (kV).

Whilst the same parameters are presented in the equivalent table in Chapter 9, the impact assessment itself in Chapter 9 presents calculated values (Paragraphs 443-444). Chapter 8 should align where relevant with Chapter 9 for an assessment of risk from EMF.

The applicant is requested to review and update as required the impact assessment in the EIAR and NIS to ensure alignment with that presented for fish and shellfish ecology. The applicant is also requested to refer to the FI Request for Fish and Shellfish Ecology for review of calculated EMF values and assessment of worst case scenario for burial depth (m), and to bring those findings through for consideration/discussion within the relevant Chapter 8 assessments.

<u>Codling Bank</u>

o) Whilst the Commission notes that Codling Bank is not a designated Annex I habitat, it is however, recognised as an important habitat in the region. The EIAR has not suitably considered this habitat and/or referenced relevant impact assessments for the bank (i.e. EIAR Chapter 6 – Marine Geology, Sediment and Coastal Processes). The Commission's concerns in this regard are set out below:

(i) Secondary Data - EIAR Chapter 8 has not cited a relevant survey report by AQUAFACT International Services Ltd (2012), produced for the NPWS (hereafter referred to as 2012 AQUAFACT). Whilst the survey data collected to inform the report is approximately 10 years old, this campaign had sampled those areas including Codling Bank, a feature which directly overlaps the PAB.

The applicant is therefore requested to review the 2012 AQUAFACT survey report to provide confirmation whether the data is suitable to further support the baseline, or if not required, provide rationale as to why it has not been considered.

(ii) Assessment of Codling Bank - The Commission notes that Greater Codling Bank is described as “not conforming to the morphotype” (of an Annex I Sandbank) (NPWS, 2019). Whilst not a qualifying/designated Annex I sandbank feature, there are notable omissions in EIAR Chapter 8 that relate to:

- The spatial overlap of Codling Bank with the CWP PAB; and
- The key characterising benthic habitats of Codling Bank.

The Commission notes that EIAR Chapter 6 has considered Codling Bank, where it provides reference to the bank’s stability in relation to sediment mobility and risk from impact. However, Chapter 8 has not included a cross reference to the assessment presented in Chapter 6, where a link between the risk to this geomorphological feature and therefore, risk to its supported benthic communities is important.

The applicant is therefore requested to review and update the impact assessment within Chapter 8 to provide suitable consideration of Codling Bank-associated benthic communities.

9. Transboundary Consultation

(a) The Commission notes that the observation received by the Territorial Sea Committee on behalf of the Isle of Man, raises, inter alia, concerns in relation to the lack of consideration of designated Manx sites, with potential for transboundary impacts in particular in relation to birds, fish/shellfish, and marine mammals. The applicant is requested to fully address the Isle of Man observation. In responding to this item, the applicant is also requested to consider the potential for interaction of Temporary Threshold Shift (TTS) ranges with Manx waters and the conservation objectives of any protected sites therein (see also relevant items from item 10 below regarding consideration of TTS).

10. Marine Mammals

<u>Underwater Noise</u>

a) Noise Abatement:

The details that have been submitted in relation to underwater noise arising from the proposed development acknowledges the potential for impacts to arise on marine fauna from both Permanent Threshold Shift (PTS) and TTS over significant areas. The Wildlife Act 1976, as amended, lists marine mammals, including all dolphin, porpoise, seal and whale species as protected (with subsequent regulations also

applying protections to all species of marine turtles and similar protections to basking sharks), stating that it is an offence to hunt, injure, or wilfully interfere with/destroy the resting or breeding place of such species. The January 2014 ‘Guidance to Manage the Risk to Marine Mammals from Man-Made Sound Sources’ published by the Department of Arts, Heritage and the Gaeltacht (NPWS, 2014), notes that sound sources with the potential to induce TTS in a receiving marine mammal has the potential to cause both disturbance and injury. This guidance has a statutory basis under Regulation 71 of SI No. 477 of 2011 and refers to the “offence to injure” under the Wildlife Act, 1976, noting that TTS “may constitute such an injury”.

Having regard to the information submitted in the EIAR, the NPWS underwater noise guidelines (NPWS, 2014), the strict protections afforded to marine mammals under the Wildlife Act 1976, as amended, in addition to submissions from prescribed bodies and observers, the Commission requires a formal commitment to inclusion of one or several of the suite of noise abatement measures referenced in the planning documentation, including commitment to their inclusion in the project. The applicant is requested to submit:

i. Realistic values for the reduction in sound level possible from the suite of presented appropriate noise abatement measures, based on existing available technologies that could be applied to the proposed development to reduce/restrict the propagation of noise through the marine environment. The review must set out in detail the suitability of such measures for the construction of the proposed development at this location, including restrictions in relation to their suitability, where relevant.
ii. The applicant must also consider and draw on the best available technology and thresholds, including as applied in other EU jurisdictions (e.g., Germany; Belgium; Netherlands; Denmark), to identify and provide for suitable noise abatement to reduce the level and extent of potential noise impacts arising from the proposed development. Examples include the German 160 dB re 1 μPa^2s SEL_{ss} and 190 dB re 1 µPa SPL_{peak} thresholds that must not be exceeded at a distance of 750 m from a piling site; or the frequency weighted SEL_{cum} PTS thresholds (e.g., harbour porpoise 155 dB re $1\mu Pa^2s$) that must not be exceeded for a fleeing animal with a starting distance of 200m in Denmark.
iii. Revised noise modelling and mapping which provides detailed consideration of the noise abatement strategy selected in response to (i) above and include:

1. The modelled SPL_{peak} and SEL_{cum} PTS and TTS contours, for each functional hearing group potentially present, emanating from the existing locations proposed in the application, which are at the periphery of the proposed development, to demonstrate the full potential spatial extent of underwater noise propagation. Modelling must also show the noise level (SPL_{peak}, SEL_{cum}) at 750m from the locations of each of the piling activities selection.
2. The modelled SEL_{ss} contours for 120-180 dB re 1 μPa^2s at 5 dB increments at the locations in the point above. Mapping provided must show the relevant noise contours in the context of implementing the abatement technologies/ measures identified at (1) above, and should be displayed alongside the noise contours in the absence of any such noise abatement measures being implemented.
3. Revised details showing the change in total impacted individuals of each species before and after consideration of noise abatement technologies.
4. Modelling must be performed for monopiles and pin piles, as both are under consideration within the project design envelope.
5. Any additional abatement and/or mitigation measures should also be considered in the context of their potential for reduction of cumulative effects with other projects in terms of underwater noise.

b) Abatement Experience:

The Commission acknowledges the applicant's experience in offshore renewable projects in both the North Sea and other jurisdictions. The applicant is invited to submit any details or monitoring/reporting available from previous experience of offshore development in other EU jurisdictions which demonstrates the efficacy of mitigation measures adopted (and proposed in the current application) in relation to underwater noise.

c) Marine Mammal Mitigation Plan:

The MMMP states the development will follow standard NPWS (2014) guidelines, however it describes the use of Passive Acoustic Monitoring (PAM) as a form of mitigation under hours of darkness. The guidelines state: "Pile driving activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible the sound-producing activities shall be

postponed until effective visual monitoring is possible". The following text is also noted: "Once an appropriate and effective Ramp-Up Procedure commences, there is no requirement to halt or discontinue the procedure at night-time, nor if weather or visibility conditions deteriorate nor if marine mammals occur within a 1,000 m radial distance of the sound source, i.e. within the Monitored Zone". According to standard practice, there is no requirement for piling to stop once daylight fades, however if there is a break in pile driving sound output for a period greater than 10 minutes (e.g., due to equipment failure, shut-down or location change), the piling must not resume until daylight hours. Although the proposed development will be able to employ PAM to aid in identifying the presence of cetaceans, to begin before daybreak would constitute a deviation from the NPWS (2014) Guidance. As per NPWS (2014) Guidance, PAM may be used as a supplementary mitigation tool to optimise marine mammal detection, but not as a primary mitigation tool. Additionally, pile driving under the guidance shall not commence if marine mammals are detected within a minimum 1,000 m radial distance of the source. The applicant is requested to clarify the relevant mitigation measures to be utilised, bearing in mind these guidelines.

It is further requested that all elements of the MMMP comply with NPWS (2014) Guidance (or any such updated guidance that issues in the interim) including: soft start times, delay durations, mitigation zone sizes, and mandatory ramp-up procedures, and defined reporting requirements. Furthermore, the use of distance estimation formula should follow the same approach suggested for distance estimation by the Joint Nature Conservation Committee (JNCC) (refer to Marine Mammal Observer Association article on the subject of distance estimation using reticular binoculars for further explanation) and use standard trigonometric equations for calculation.

d) Temporal Mitigation

The applicant is requested to address the possibility for temporal mitigation, for example limiting piling to periods that do not overlap with the harbour or grey seal pupping season or the harbour porpoise calving season, to further limit effects on nearby Special Areas of Conservation (SACs).

e) Geophysical Surveys:

Chapter 11, paragraph 50, of the EIAR states that 'a high level assessment of the noise impacts from other construction (i.e., excluding impact piling and Unexploded Ordnance (UXO) clearance) is presented in Appendix 9.4 UWN Assessment. This

includes an assessment of the potential PTS and/or TTS onset impact ranges for: - geophysical surveys: geophysical survey equipment including but not limited to multi-beam echosounders, sub-bottom profilers, side scan sonar etc)….” However, Appendix 9.4 makes no reference to any pre-construction surveys methodologies or equipment being included in the assessment.

It is noted that Appendix 9.4 does include a brief consideration of other construction activities, and that there is an assessment of impacts from pre-construction geophysical equipment within Section 11.10.1 (also summarised within the MMMP). The applicant is therefore requested to provide further clarification or justification for the apparent lack of presentation of the noise impacts from geophysical surveys within Appendix 9.4.

f) Pile Driving Assessment:
The applicant is requested to provide further detail on the physical parameters (for example seabed characteristics) that differentiate the three different regions/piling scenarios (Chapter 11, Paragraph 141 of the EIAR). The applicant is also requested to confirm and justify the approach taken to differentiate between the three scenarios, from the data in table 11-15 the Commission assumes that the most restrictive scenario provides the least number of high-energy strikes albeit there is a higher number of overall strikes per pile, however, this is not stated clearly in the text.

g) Minke Whale Swim Speed:
It is noted that the Blix and Folkow (1995) 3.25 m/s ‘constant fleeing speed’ for minke whale has been used rather than the 2.1 m/s value which is recommended in Scottish Natural Heritage, 2016, ‘Assessing collision risk between underwater turbines and marine wildlife, SNH guidance note’, and which could be considered industry standard practice. While it is noted that the 2.1 m/s speed is based on ‘routine swimming’ (not fleeing), it does represent a more precautionary approach. If the applicant considers it is more appropriate to use the fleeing speed, they are requested to provide evidence that minke whale are likely to/capable of sustaining this speed across the entire distance travelled during displacement. Alternatively, the applicant is requested to use the 2.1m/s value in a revised assessment of this impact pathway.

h) Piling Events Contingency:
The worst-case number of piling events does not account for the contingency of having to move and re-pile if substrate does not accept the pile. The applicant is

requested to add in this consideration or provide justification for its exclusion from the worst-case scenario. Furthermore, the applicant is asked to confirm that the construction piling approach and assessments submitted consider the projected worse-case scenario, in this regard the Commission notes that the total hours of piling per monopile used within the EIAR for the Codling project presents as the lowest of the 5 Irish Sea Phase 1 ORE projects that are currently under consideration, and while it is acknowledged that conditions, techniques, and monopole diameters differ between all projects the applicant is requested to provide further justification confirming their approach and/or provide additional details/discussion within the relevant assessments.

i) Figure Updates:
The applicant is requested to provide the following updated maps within a separate appendix:
   i. Contours of injury threshold exceedance (including TTS) and dose-response contours (where appropriate) for all modelled scenarios.
   ii. Maximum masking and behavioural impacts in the Cumulative Effects Assessment (CEA; Appendix 11.1) on marine mammals and fish, and behavioural impacts for shellfish. The CEA should model impacts based on concurrent construction with and without noise abatement with the closest currently proposed ORE developments in the Irish Sea (i.e., the Dublin Array and Arklow Bank Wind Park 2). See Item 10(a)(iii) above for further context.

<u>Behavioural Disturbance</u>

j) Geophysical Effective Deterrence Ranges:
Under Impact 2 (Disturbance from pre-construction surveys) of Section 11.10.1 it is stated that a disturbance range cannot be quantified for Ultra-Short Baseline, Sub Bottom Profiler, Ultra High Resolution Seismic Sparker and Sub-Bottom Imager due to lack of empirical evidence. The applicant is requested to justify their reasoning for not considering use of an Effective Deterrence Range (EDR) for this purpose and/or amend the assessment to provide for EDR.

k) Level B Harassment Threshold:
The Commission notes the use of NOAA Level B Harassment Threshold (National Marine Fisheries Service, USA 2024) for the assessment of behavioural disturbance rather than more recently defined thresholds in European jurisdictions (e.g., Danish threshold of 143 dB re 1µPa or 103 dB re 1 µPa VHF-weighted) single strike sound

exposure level (SELss) (Tougaard, 2021). The Commission further notes the threshold values recommended by TG Noise (Sigray et al., 2023) and thresholds used in Ireland's Draft Marine Strategy Part 1, Article 8, 9 and 10 report 2024 and its Annex III. The applicant is requested to consider these thresholds and justify why they have not been used in the assessment.

l) Expert Elicitation Workshop:
Paragraph 337 in relation to Impact 6 (Disturbance from Piling – WTGs and OSSs) within Section 11.10.1 of Chapter 11 in the EIAR references the expert elicitation workshop (Booth et al., 2018) to discuss effects of disturbance from piling on marine mammals. In the workshop the attendees assessed the most likely potential consequences of a six-hour period of zero energy intake for harbour seals. The applicant is requested to present this workshop findings within the context of repeated periods of disturbance (over 78 days), rather than a single period.

The Commission notes that it is stated that it may take approximately 60 days of repeated disturbance before there is expected to be any effect on the probability of survival. As the total piling days exceed this value, the potential for effect should be set out and discussed within the EIAR. It is not considered adequate justification to note the uncertainty around this 60-day estimate, as this could result in either fewer or greater number of days of required repeat disturbance.

The applicant is requested to provide further data to support the following statement: "…it is considered unlikely that individual harbour seals would repeatedly return to a site where they had been previously displaced from in order to experience this number of days of repeated disturbance" (Paragraph 337, Chapter 11 of the EIAR). If repeated disturbance excludes seals from the site, barrier effects should be considered (particularly considering the large area of disturbance) within the EIAR. Alternatively, the applicant is requested to consider and discuss current research indicating high site fidelity in seals.

m) Minke Whale Displacement:
The applicant is requested to provide supporting reference(/s) for the statement in Paragraph 330 of Chapter 11 of the EIAR which states that minke whales can "tolerate temporary displacement from foraging areas due to their large size and capacity for energy storage".

n) Minke Whale Vessel Disturbance:

In the assessment of Minke whale sensitivity to repeat vessel disturbance (Paragraphs 468-470), the EIAR references a study by Christiansen and Lusseau (2015) that found no apparent potential for a population-level effect of acute disturbances from whale-watching vessels. However, the Commission notes that the number and frequency of transiting vessels during construction is likely to be far greater than the number of whale-watching vessels. Additionally, whales are likely to be exposed to boats throughout the day (12 hours), which the same study suggests would be sufficient to significantly affect foetal growth rate. The applicant is requested to provide further justification for the suitability of this study for a determination of low impact to minke whale from vessel disturbance.

o) Operational Disturbance:
The applicant is requested to provide a detailed assessment of disturbance from operational turbines on marine mammals. The reference to Stöber and Thomsen (2021) is used to suggest a reduction in noise output between gear box versus direct drive turbines, however the paper still suggests that a modern 10 MW turbine would disturb marine mammals out to 1.4 km under the Level B Harassment threshold. In a subsequent case study, Thomsen *et al.* (2024) present TTS impact ranges from a 20 MW turbine of over 700m, indicating a potential overlapped impact area across the entire wind farm. This further then calls into question the assessment that the combined noise effect of all turbines can be determined to be negligible without further examination. The applicant is requested to address this issue amending the EIAR and, drawing in additional sources and discussion as necessary.

<u>Annex IV Species</u>

p) The Commission notes the content of Appendix A 'Compliance with the National Marine Planning Framework' of the submitted Planning Report which states that in relation to marine mammals, 'even without causing significant residual effects the CWP project will result in disturbance of Annex IV species that requires a derogation licence under Regulation 54 of the Birds and Natural Habitats Regulations, 2011'. It is also stated that this derogation will be applied for close to the date of submission of the Planning Application. The applicant will be aware of the recent guidance from the Department of Housing, Local Government, and Heritage in relation to Regulation 54 Derogations which state that it is necessary for any derogation to be granted prior to a planning decision on the proposed activity. In this regard the applicant is asked to provide an update and any further details available on this matter and to consider any

potential further derogation(s) which may be required in relation to any other annex IV species.

Surveys and Baseline

q) Common Dolphin:
The Commission notes that in Figure 5-7 of Appendix 11.3 Baseline Technical Report, the seasonal differences presented do not match the observation records set out in Table 13 of the same document. The applicant is requested to review these figures and the table and to amend, clarify and confirm the correct numbers as necessary.

r) Department of Communications Climate Action and Environment Guidance:
With reference to the Guidance on Marine Baseline Ecological Assessments and Monitoring Activities for Offshore Renewable Energy Projects Part 2, April 2018 by the Department of Communications Climate Action and Environment (DCCAE) (DCCAE Guidance, 2018), the applicant is requested to justify:
   i. The selection of a 4km buffer area extending around the array area. The DCCAE Guidance, 2018 recommends a minimum buffer of 10km for cetaceans and seals, with monthly haul-out site surveys.
   ii. The lack of empirical acoustic data, noting the Department of Housing, Local Government and Heritage, Development Application Unit (DAU) observation which states the omission of acoustic monitoring does not allow the site to be fully characterised for all Annex IV species.

s) Seal Baseline:
The DAU has noted that grey seal numbers can be highly variable from day to day during summer months, therefore density estimates should not rely solely on Morris and Duck (2018) count data. The applicant is requested to address this comment in detail and to justify:
   i. The lack of seal haul-out surveys within the wider area surrounding the cable corridor.

   ii. The exclusion of seal sightings from informing density estimates despite being sighted in aerial, landfall, and boat surveys.

Alternatively, should additional details, information, or surveys, be available which provides the above information the applicant is invited to amend the relative assessments within the EIAR accordingly.

Unexploded Ordnance Mitigation

t) Noise Abatement for High-Order:
Having regard to the content of Chapter 11 of the submitted EIAR and the stated uncertainty in relation to the ability to use low-order detonation (deflagration) in all cases of Unexploded Ordnance (UXO) clearance the applicant is requested to confirm the use of Noise Abatement Systems (NAS) in any instances of non-deflagration detonations. This is required as TTS (considered injury under legislation) goes out to 100 km for Minke Whale and 23 km for Harbour Porpoise. The MMMP should also be amended accordingly to incorporate this commitment.

Cumulative Effects Assessment

u) TTS Impacts
The Commission notes that cumulative effects on auditory injury (PTS) from piling have been scoped out of the CEA. However, the impact range for piling at the CWP array site overlaps that of Arklow Bank Wind Park 2 and Dublin Bay Array for TTS, which is considered injury under Irish regulations. The applicant is requested to consider inclusion of TTS in the assessment of cumulative effects and amend the assessment accordingly.

v) Tier 1 and Tier 2a and 2b projects:
The applicant is requested to carefully review Table 6 within Appendix 11.1 Cumulative Effects Assessment and Table 11-54 of Chapter 11 of the EIAR. Under “Tier 1 and Tier 2a and 2b projects” the contribution of CWP Project to total is listed at 0%, which appears to be a typographical error. The applicant is requested to review and update this value as necessary (in the context of the revised cumulative assessment sought under item 5 above).

w) iPCoD Limitations:
It is noted that the cumulative effect in 2027 from Codling Offshore Wind Park (OWP) and other projects in the area is predicted to disturb >10% of the reference population of harbour porpoise, bottlenose dolphin, common dolphin, and grey seal, and >20% of the reference population of harbour seal, which is assessed as having a Minor (not significant) impact. However, the modelling approach assumes no further construction of major projects in the 18-year period following the initial cumulative effect, as this data (quantity and extent of future projects) is not currently known or available. The applicant is requested to include a section in Annex 1 – Assumptions

and limitations and Appendix 11.4 Cumulative iPCoD Modelling to discuss the limitation associated of the model to account for future developments within the area.

x) Concurrent Piling:
In the event of favourable consideration, the Irish Sea Phase 1 ORE projects would be independent of one another and will be subject to their own timelines in relation to construction schedules, supply chain and contractual constraints. In this context, given the long-term piling schedule referenced in Chapter 11 and Appendices 11.1 and 11.4 of the EIAR which has fed into the assessment conclusions provided in relation to cumulative noise, the applicant is requested to either provide a more comprehensive assessment of cumulative noise assessment from concurrent pile driving across the Phase I ORE projects in the Irish sea, or alternatively provide comprehensive evidence/undertakings confirming concurrent piling will not arise.

y) Operational Noise:
Notwithstanding the rationale provided in relation to the assessment of impacts of operational underwater noise on marine megafauna, the applicant is requested to assess potential impacts from operational underwater noise on marine mammals in terms of the cumulative assessment with other Irish Sea ORE Phase 1 projects, bearing in mind the comments raised in point 10(o) above.

<u>Natura Impact Statement</u>

z) High Order Unexploded Ordnance (UXO)
It is noted that unmitigated high-order UXO clearance is predicted to produce a PTS-onset impact range for harbour porpoise of 12km, resulting in 37.3% of the Rockabill to Dalkey Island SAC and 84 (of 227 designated population feature) porpoise impacted within a single event. A significant portion of the SAC could potentially be affected by a high-order detonation; therefore, it should be stated that it is not possible to determine no adverse effect on site integrity (Paragraph 168) for this detonation style. The applicant is requested to classify low-order detonation as mitigation alongside consideration and commitment to NAS and other mitigation methods (see also 9(t) above) or provide justification why this is not required.

aa) Piling Disturbance:
It is noted that disturbance from piling of WTGs (Paragraph 177) has been assessed as likely to disturb either 13% (62 harbour porpoise), 22% (49 harbour porpoise), or 30% (68 harbour porpoise) of the Rockabill to Dalkey Island SAC area in a single

day, based on the assessment method. Using the 145dB SEL_{ss} threshold (Lucke *et al.*, 2009) or the EDR approach, >20% of the SAC area is disturbed. JNCC (2020) guidance and European Commission (EC) limits for underwater noise pollution state that a significant effect/Level of Onset of Biologically adverse effect is achieved at 20% disturbance within a single day. At this threshold, the Commission notes it is not possible to determine no adverse effect on site integrity. The applicant is therefore requested to reassess the impacts considering firm and detailed commitments to the use of NAS, to protect site integrity.

Updated Data

bb) The Commission notes that the 2024 ObSERVE II Programme Reports were published subsequent to the lodgement of the current planning application. The applicant is requested to review the outputs of the 2024 ObSERVE II Programme Reports, and incorporate these results within their marine mammal assessments, as appropriate, updating the EIAR and NIS where relevant.

11. Fish and Shellfish Ecology

Study Area

a) In relation to Chapter 9 – 'Fish, Shellfish, and Turtle Ecology' of the EIAR, the applicant is requested to redefine the selected study areas and reference them appropriately and consistently throughout their assessment. It is stated in paragraph 20 of the Chapter that the regional study area is for the assessment of near field indirect impacts, and in Paragraph 21 that the National study area is for the assessment of far-field indirect impacts. However, a number of impacts have been assessed against these wider study areas inappropriately. For example, in Paragraph 409 considering long term habitat loss, a comparison has been made to the Irish Sea Study Area, despite this impact being neither far-field nor indirect. Furthermore, the use of the 'national study area' when considering impacts on potential spawning areas seems disproportionately large, which may lead to underrepresentation of impacts via dilution. The Commission also notes that the farthest ranging impacts (underwater noise) do not extend significantly beyond ICES Rectangles 35E3, 35E4, 34E3, and 34E4. Beyond the use of larger study areas for describing the baseline, and possibly for the consideration of impacts to migratory pathways, study areas should be reduced to a more appropriate scale. The applicant is therefore requested to reassess the impacts using a study area only comprising ICES Rectangles 36E3; 36E4; 35E3; 35E4; 34E3; and 34E4, and/or provide further scientific justification of their alternative approach.

Valued Ecological Receptor Groups

b) When assessing impacts using Valued Ecological Receptors (VERs), specific consideration must be given to the worst-case presented by each species. An example is presented within the assessment of sensitivity for “Other fish” within Impact 2: EMF from Cable. Text presented within paragraph 458 states:

> *“The presence of EMF from cables may result in behavioural changes such as attraction or avoidance of a discrete area or changes in normal behaviours such as foraging (Gill et al., 2009), as such tolerance is considered high.”*

However, tolerance for European eel (very low) and river lamprey (low) as presented within Table 9-79 does not correspond with this statement, and is not discussed within the body of the text. This tolerance should be discussed further, with relevant sources relating to the potential impacts that EMF may have on the migration of these species, citing relevant literature and field studies.

When making a determination of sensitivity for “Other fish”, the VER as a whole should then be considered as very low to represent the worst-case, or species with a Tolerance lower than High should be considered separately.

The applicant is requested to ensure that, throughout the assessment, worst-case determinations of criteria are used for the VER as a whole, or that individual species with outlier criteria are considered separately, ensuring these species are given appropriate consideration.

Sensitivity and Magnitude Definitions

c) The applicant is requested to clarify the language and classifications used when making determinations of sensitivity criteria and amend the EIAR accordingly. In this regard, with the exception of ‘Value’, each of these criteria are inversely proportional to sensitivity (e.g. lower adaptability corresponds with higher sensitivity). However, no clarification is provided to indicate what definition this corresponds to within Table 9-3 (e.g. is a species with ‘High’ adaptability one that fits the criteria for ‘Low’ or ‘Very Low’ sensitivity within the table?). Once clarified the applicant is requested to ensure that this is implemented consistently throughout the chapter.

An example of where the lack of clarity creates uncertainty is within the assessment of sandeel sensitivity to temporary habitat disturbance in Table 9-23.

i. Timescales for recoverability within Table 9-3 are longer than those presented within the Resilience (recovery) tables in the cited source (Tyler-Walters *et al.*, 2023). Whilst it is noted that timeframes of up to 60 years are presented within EPA guidance, the applicant is requested to reconsider these timescales. Specifically, recoverability periods of up to 60 years are not considered proportional to the level of recoverability claimed (medium), and it is suggested that timescales longer than the lifetime of the project should reasonably be considered High.

ii. Within Table 9-3 of the EIAR both High and Medium sensitivity value criteria include “OSPAR list of threatened or declining species”. The applicant is requested to revise this table and subsequent assessment results to qualify the OSPAR list of threatened or declining species solely to High value sensitivity. Similarly, the applicant is requested to assign High value to those species defined as “Important Species” within the National Marine Planning Framework and amend Table 9-3 and subsequent assessments accordingly.

iii. The applicant is requested to revise Chapter 9, Fish, Shellfish and Turtle Ecology throughout to ensure that definitions provided within Tables 9-3 and 9-4 for Sensitivity and Magnitude are adhered to through the assessment discussions and conclusions, ensuring their assessment criteria remain distinct.

Throughout the chapter, magnitude has been assessed in a variable or changing scale for each receptor group. Magnitude for each receptor group should have the same magnitude of effect per impact/pressure. The variability is related to the sensitivity of each receptor group to that specific impact/pressure. The applicant is requested to undertake a single assessment of magnitude for each impact i.e. related to the extent, duration, frequency, and consequences of that impact. Consequence should not cross into an assessment of sensitivity of individual receptor groups. Consideration of receptor sensitivity is brought into consideration following this for each receptor group, based on an assessment of adaptability, tolerance, recoverability, and value.

An example of inappropriate use of these definitions is presented within Paragraph 500, where the mobility of a species (Adaptability) and the presence of nearby spawning grounds (Tolerance and/or Recoverability) are used in the determination of magnitude. This is inappropriate, and the applicant is

requested to address this issue throughout the assessments provided within Chapter 9.

Baseline

d) The applicant is requested to give consideration to Marine Institute dataset “Marine Institutes Commercial species spawning and nursery areas”, alongside Coull et al. (1998); Ellis et al. (2012); and Ireland’s Marine Atlas data. Where this dataset presents spawning and nursery grounds additional to the sources currently used, these should be integrated into the determination of baseline conditions and used to inform any subsequent assessment.

EIA Impacts

e) In relation to EIAR Chapter 9, Construction Phase Impact 1: ‘Temporary seabed habitat disturbance’, in the assessment of “Mobile fish with spawning and nursery areas that overlap”, the Commission notes that recoverability has been presented as ‘High’ for all species within the receptor groups based on high fecundity. However, local populations of species with a strong benthic association at any life stage (i.e. sandeel and elasmobranchs) have the potential to experience a reduction in fecundity due to loss of supporting habitat. The applicant is requested to provide more detailed consideration of this impact amending or providing further justification and/or clarity regarding the conclusions presented in their assessment in relation to impacts on local species with a strong benthic association.

f) The applicant is requested to add relevant figures from Appendix 6.3 to the assessment of temporary disturbance of the seabed leading to increases in Suspended Sediment Concentration (SSC). These figures should be overlaid with known and potential spawning, nursery, and habitat for fish and shellfish species with strong benthic associations; notably Atlantic herring (Dundalk Bay population, and regions to the south) and sandeel.

g) The Commission considers, based on the application documentation submitted, that the assessment within the EIAR in relation to consideration of underwater noise, appears under-precautionary with regard to modelling and impact assessment as follows:

   i. Industry best practice would suggest that fish are to be considered a stationary receptor, and therefore references to ‘expected fleeing behaviour’ are not relevant to fish, notably when relating to the use of soft-starts. This approach has the

potential to greatly underestimate the impact ranges on fish populations. It is noted that within the EIAR chapter references are made to both fleeing and stationary models, and it is unclear what model has been used for the determination of significance.

Whilst it is noted that both stationary and fleeing models have been used, it is unclear whether values in tables (e.g. Table 9-33), and figures used in the assessment of noise and vibration impacts are presenting values for fleeing or stationary receptors. The applicant is asked to clarify the sources and calculations behind the values shown in all tables (i.e. whether based on fleeing or stationary models). Should fish have been considered as a fleeing receptor, the applicant is requested to either revise the relevant assessments within the EIAR (and other planning documentation if required) with fish considered as stationary receptors, or comprehensively justify their assessment as fleeing receptors with reference to appropriate evidence.

Should impacts relating to underwater noise change in their extent following these changes, the applicant is requested to make any necessary revisions to the assessment of relevant cumulative effects.

ii. It is unclear why the presence of spawning and nursery grounds has been used as the determining factor for including/excluding species within the assessment of underwater noise and vibration impacts. It is acknowledged that fish species may be likely to congregate to these areas during their spawning/nursery period. However the majority of fish species are highly motile, and produce eggs and larvae that are planktonic in nature i.e. are part of the plankton and are unable to resist movement via tides and currents. Therefore, impacts to these species cannot be discounted on the basis of an absence of spawning/nursery grounds.

It should be noted that the spawning locations for some species are of importance when considering underwater noise impacts. In particular, this applies to Atlantic herring (*Clupea harengus*), where eggs are laid on the seabed and are therefore spatially locked to areas of suitable sediment until their planktonic life stage (e.g. disperse as larvae into the water column when the majority of the yolk sac has been absorbed).

In this context the applicant is requested to amend their assessment criteria and conclusions in relation to species that do not have a benthic dependence for spawning activity or where adults are not bound to specific spawning or nursery

grounds. In the absence of such revisions the applicant must provide further comprehensive clarification/justification in relation to their adopted approach.

iii. A number of assessment conclusions do not appear to present or consider the potential worst-case scenarios in relation to overlap with spawning grounds. As an example, Figure 9.38 indicates the northeast piling location overlaid with Coull et al. (1998) spawning and nursery grounds despite the northwest location appearing to present a greater overlap of piling-related pressure/impact pathways/envelopes. The applicant is requested to address this matter by amending their assessment and conclusions to consider the most conservative/impactful scenarios. Alternatively, the applicant must provide full justification/clarification as appropriate that the scenario considered represents the most conservative/greatest magnitude of impact that could arise from the proposed development.

iv. The applicant is requested to incorporate evidence within the EIAR that will clearly indicate whether there is an overlap (or not) of underwater noise impacts with the Atlantic herring spawning grounds to the north of the proposed development. An additional figure should be provided to show any potential overlap, noting that the indicated impact ranges should consider Atlantic herring as stationary receptors for this assessment.

v. The applicant is requested to provide appropriate citations supporting/validating the statement in paragraph 300 of Chapter 9, which references that the majority of anadromous species will not experience any barrier effects from noise and vibration for their migratory movements. Consideration should also be given to the potential for a worst-case scenario of underwater noise impacts on migratory species being represented by those piling locations closest to the coast, where the potential for barrier effects to prevent coast-adjacent movement is most likely.

vi. The applicant is requested to provide additional clarification to better explain the values presented within Table 9-33; 9-38; 9-43; and 9-49 “Temporal overlap results”. While it could be assumed from the text in Paragraph 189 that the TTS area has been divided by the proportion of the year that each given species carries out spawning/nursery activity, this is not stated explicitly. If this assumption is correct, those months considered should be presented within the table, and the calculations to arrive at the values in the “Impacted spawning potential” column presented. Also, a definition of “km^2h” is required. Item 11(g)(ii) above, regarding the validity of using spawning or nursery grounds of species in the EIA also needs to be considered.

Temporary disturbance of the seabed and deposition

h) The Commission notes that cardinal directions, distances, and settlement depths are given throughout Chapter 9 of the EIAR in relation to increases in Suspended Sediment Concentration (SSC) and associated deposition. The applicant is requested to amend the assessment and consideration within the chapter to provide the total area over which sediment will occur, and associated depths of cover (further to the response to item 6(i) of this further information request) in order to contextualise the magnitude of these impacts.

Long-term habitat loss

i) The applicant is requested to clarify the statement at paragraph 433 of Chapter 9, which refers to the area of Nephrops habitat being affected as being greater than 0.01%. If this is the case the applicant must provide the actual value. If, however, this is a typographical error the applicant is requested to correct it.

Electro-Magnetic Fields (EMF)

j) Assessment of impacts for EMF considers only the magnetic flux density at the sediment surface when considering a burial depth of 1m, and does not give consideration for magnetic flux density at the cable surface, which will likely be several orders of magnitude greater. The applicant is requested to give consideration to EMF impacts from the cable surface out to the point where they are indistinguishable from background levels. This approach is necessary to account for both impacts on species with burying behaviours, and for potential insufficient cable burial, with citations provided by the applicant implying that physiological and behavioural changes may occur when making these considerations.

k) Values provided in Table 9-79 do not align with text presented in paragraph 458 stating “The presence of EMF from cables may result in behavioural changes such as attraction or avoidance of a discrete area or changes in normal behaviours such as foraging (Gill et al., 2009), as such tolerance is considered high”. Tolerance provided within Table 9-79 for European eel (very low) and river lamprey (low) does not correspond with this statement, and is not discussed within the body of the text. The applicant is requested to provide additional context and consideration to the tolerance of these species in relation to EMF, to ensure the inclusion of sources relating to the potential impacts that EMF may have on the migration of these species, citing relevant literature and field studies where available.

12. Commercial Fisheries

a) The NMPF provides that the proposed development should be considered in the context of co-existences with existing marine activities in the area, including fisheries and aquaculture. Having regard to the provisions of the NMPF, the submitted EIAR (including the Fisheries Management and Mitigation Strategy) and all observations made the Commission raises the following queries:

   i. Notwithstanding the statements contained within Chapter 12 (Commercial Fisheries) and the Fisheries Management Mitigation Strategy (FMMS) the applicant is requested to address the observations by prescribed bodies and observers who raise concerns in relation to the potential impacts on commercial fishing arising from the proposed development within both the array and cable route corridor areas, specifically relating to the practicality and uncertainties of co-existence with reference to co-existence policy 1 in the NMPF.

   ii. The applicant is requested to address observations by prescribed bodies and observers who raise concerns in relation to the displacement of fishing effort during operational activities. In particular, the Marine Institute submit that the displacement of fishing effort would potentially increase fishing pressure and competition in neighbouring areas. The applicant is requested to consider, in a holistic and integrated manner, cumulative impacts (see also point 5 above) associated with the potential effects of such displacement of fishing effort associated with other Irish Sea Phase 1 ORE projects in this area.

b) The Commission has the following queries in relation to the submitted Fisheries Management and Mitigation Strategy (FMMS) and Chapter 12 (Commercial Fisheries).

   i. The applicant is requested to further clarify and explain the term “fleet level” in the conclusion of consideration of impacts within the FMMS and Chapter 12. Associated with this, and the uncertainties raised in relation to co-existence, the applicant is requested to clarify whether localised or individual impacts on individual fishers or vessels could be considered to be of such significance to merit and/or justify access to any form of disturbance payment strategy, which can often be incorporated within FMMS’s and if this could arise what form of evidence base would be required to be provided by affected parties. In the event that this request cannot be fully addressed by the applicant, the

applicant is requested to provide explanation and justification for the response provided.

ii. The applicant is requested to clarify whether there will be a dispute resolution process included within the FMMS, and if so to provide an outline as to its nature.

13. Marine Archaeology

a) In relation to the Underwater Archaeology comments issued from the DAU, it is stated that much of the advice provided during pre-planning meetings has not been incorporated into the final EIAR. The applicant is invited to address this issue by altering or augmenting the relevant EIAR sections and/or providing detailed justification as to how the methodology set out in the suggested approaches/mitigation address the DAUs concerns and requirements in relation to underwater archaeology.

b) The applicant is invited to review in detail the DAUs comments in relation to underwater archaeology and its recommended conditions in the event of favourable consideration of the project, in terms of their potential impacts on project design, construction methodologies and timeframes. In particular in this regard the applicant is requested to comment on the recommendation to implement archaeological exclusion zones at the locations of all shipwrecks and geophysical anomalies of archaeological potential and to either identify the locations of, or set out a working methodology for identifying, such features and consider any potential implications on project design and environmental impacts that may arise. Any response to this issue should include mapping/layouts showing proposed project infrastructure in the context of prospective shipwrecks, features of archaeological origin and any associated archaeological exclusion zones while also maintaining other project design requirements such as search and rescue requirements and the established flexibility opinion.

14. Bats

a) In consideration of bats (onshore and migratory) the DAU notes that based on published data, it considers that the main risk associated with the proposal arises in relation to collision/barotrauma during the operational phase and that the potential for impacts in relation to four bat species (Leisler's bat, Soprano pipistrelle, Common pipistrelle, and Nathusius' pipistrelle) cannot be ruled out. The DAU notes the limited nature of the data provided. Whilst the Commission acknowledges that there is

currently no accepted standard for the assessment of bat activity in relation to offshore wind energy developments in Ireland, it is considered that the methodology outlined in Chapter 13 of the EIAR is insufficient, especially in comparison to the level of assessment that would be considered best practice for the assessment of onshore wind energy developments. While the limitations outlined in Chapter 13 are noted, survey techniques other than those employed are available. Boat-based monitoring, for example, is utilised or proposed by other offshore proposals currently before An Coimisiún Pleanála, which suggests that further survey effort is possible. Furthermore, the Commission notes the protected status of bats and their sensitivity to developments such as that proposed. The applicant is, therefore, requested to present further, more recent, baseline data. This baseline information should include echolocation/activity data from the array area, particularly within an established migratory period.

b) With regard to artificial lighting at night, the applicant is requested to provide a more comprehensive assessment of the potential effects on bats due to artificial lighting at night within the array area. The applicant is requested to provide an assessment (with reference to appropriate lux contours) to determine the extent to which proposed lighting may disturb or displace bats.

c) The DAU submission recommends that further information be provided in relation to effective mitigation measures to reduce and minimise potential impacts on migrating bats. The applicant is therefore requested to examine the need for mitigation measures (in addition to operational-phase monitoring) to reduce potential impacts on bats. The applicant is requested to provide details in relation to proposed mitigation measures or adaptive management, which could, for example, include measures such as curtailment or feathering of blades under certain conditions and/or at certain times which are to be specified by the applicant.

d) The applicant is requested to clearly define the units / indices used to describe any bat activity recorded throughout Chapter 13. This is sometimes unclear within the information currently before the Commission. For example, Chapter 13 of the EIAR (para. 99) states that Table 13.14 presents data in “migratory hours rather than nights” but the subsequent discussion appears to indicate that total number of registrations are used, and not hourly or nightly averages.

e) The applicant is requested to provide a revised discussion of results. The submitted documentation appears to contain discrepancy. For example, the applicant's analysis suggests that a total of 2,745 Leisler's Bat registrations recorded in 2022 at Irish and Welsh coastlines were possibly associated with migratory behaviour, with a peak of 288 passes in any one night, whereas Table 13-15 provides a maximum number of potentially migratory bat passes per night of 164. Information on the presence of 'feeding buzzes', observations regarding clustering of 'bat passes' etc. may be helpful to describe in relation to any offshore data.

f) In view of the identified potential for effects associated with the proposed development in terms of the operational and maintenance phase of the project (e.g. due to barotrauma and collision risk), and with recognition of the scarcity of relevant scientific information (especially in an Irish Sea context), a robust operational phase monitoring plan is appropriate. The Commission notes the content of the 'In Principle Environmental Monitoring Plan', submitted in support of the current application, however, it is considered that the extent and range of monitoring proposed in that document is not sufficient. The plan is focused on identifying potential roosting activity only, and states that "where possible the offshore platforms including the OSS or vessels will be used for bat monitoring within the array site during migration seasons". The applicant is therefore required to provide specific information on the details of the proposed operational phase monitoring and reporting which will include a firm commitment to the provision of sufficient resources and the carrying out of monitoring activities which would be reasonably capable of identifying potential effects on bats within the array area due to collision/barotrauma or displacement due to lighting.

g) The applicant is requested to provide a revised assessment of potential effects on bats offshore, which is based on a more comprehensive and robust baseline dataset. The Commission highlights that the 'receptor sensitivity' applied in the assessment of effects may not be consistent with the criteria applied in Table 13-7 given for example that bats are unlikely to avoid or adapt to collision risk and they should arguably be considered as a receptor of international importance given their status on Annex IV of EU Habitats Directive.

h) The DAU submission highlights that the deliberate disturbance of bats (which are listed under Annex IV of the Habitats Directive (92/43/EEC)) would require derogation under Article 16 of the Habitats Directive. In line with recent guidance

from Department of Housing, Local Government and Heritage, the applicant is requested to consider the need for Regulation 54 Derogation and, if required, a copy of the Regulation 54 Derogation should be provided.

15. Aviation, Military and Radar

a) While the provisions of Chapter 17 and its associated appendices are noted, as referenced in the submission of the Irish Aviation Authority, the applicant is requested to confirm through consultation and engagement with the Dublin Airport Authority and Air Nav Ireland (the national Air Navigation Service Provider (ANSP)) that the proposed offshore wind farm and the associated construction equipment will not give rise to potential impacts on instrument flight procedures and communication, navigation and surveillance equipment at Dublin Airport.

16. Marine Infrastructure

a) When discussing direct effects on Marine Infrastructure and construction methodologies (Section 18.10, paragraphs 110 to 114) the EIAR references cables, but refers to the sensitivity of existing operational cables and pipelines to direct damage being high due to their economic value and importance. Figure 18.3 shows that the three proposed offshore cables will cross over a gas pipeline, an ESB power line, and labels ‘Sewer twin pipes’ (although the locations of these are not clear on the figure). Admiralty charts show sewer lines running between Ringsend and Dun Laoghaire that will be crossed by the OECC, but do not show the gas pipeline indicated in Figure 18.3. These infrastructure assets are all located within the South Dublin Bay SAC and South Dublin Bay and River Tolka SPA. The applicant is requested to provide greater clarity in relation to the applicability, efficacy, and implementation of mitigation measures that will facilitate the construction of the proposed offshore export cables while also ensuring the protection of the existing gas pipeline, sewers and existing electrical cabling as well as the integrity of the protected sites and species at this location. Should additional site specific mitigation measures, or construction methodologies be required having regard to the nature and locations of proposed crossings, comprehensive details should be submitted and amendments made to the relevant sections of the EIAR and NIS where interactions occur. The applicant is further requested to confirm that the relevant owners/operators of the existing infrastructure referenced above have been liaised with in designing the proposed development and that they are satisfied with the proposed construction methodologies and mitigation measures in the vicinity of their assets.

b) The applicant is requested to provide a scalable map showing and labelling the locations of all cable route crossings listed in Appendix 4.2 of the submitted EIAR and to provide further details and references to the specific prevailing conditions at each of the locations (seabed, subsurface seabed, intertidal zone, etc.) and specify in each situation what means of crossing existing infrastructure is proposed, what potential site specific impacts could arise and whether any specific/unique construction methodologies or mitigation measures can be adopted to minimise impacts arising. The applicant is further requested to amend the EIAR and NIS as relevant to account for these additional construction and/or mitigation details.

c) The applicant is asked to clarify the statements in table 18-18 which states that impact to, inter-alia, gas infrastructure is scoped out of the assessment as no interactions will occur. This statement seems at odds in the context of the proposed three offshore export cables crossing an existing gas pipeline in Dublin Bay within an SAC and SPA. The applicant is requested to submit any updates or clarifications to the application documentation as required to deal with this matter in full.

17. Climate Change and Carbon Calculations

a) Given the provisions of Climate Change Policy 1 within the National Marine Planning Framework, which seeks, inter-alia, to avoid, minimise or mitigate significant adverse impacts on ecosystems which provide carbon sequestration services, the applicant is asked to confirm and/or clarify whether the carbon calculations provided for in Chapter 28 (Carbon Balance Assessment) considers and/or includes potential impacts on any carbon sequestration ecosystem services offshore. In this regard commentary on land use change within paragraphs 36 and 37 of Chapter 28 seem to be focused on the onshore elements of the Proposed Development. The applicant is requested to submit additional commentary and consideration of this matter and should alterations be required to the Carbon Balance Assessment provide updates as required.

18. **Offshore Cable Burial Depth**

a) The applicant is requested to confirm the minimum depth of cover proposed within the Dun Laoghaire Harbour Zone of Deeper Burial Depth, and provide updated drawings and sections as appropriate. In this regard the applicant should note the submission of Dun Laoghaire Rathdown County Council (DLRCC) and their recommendation that the cable lines should be buried with a minimum depth of cover

of 3m. In response to this issue the applicant is requested to confirm that the 'Zone of Deeper Burial Depth' detailed on drawings sufficiently covers the area of overlap between the cable routes and the channel dredge footprint indicated within the DLRCC submission, particularly to the eastern section of the Southern Approach Channel to Dun Laoghaire Harbour. The applicant is also requested to amend the EIAR where relevant to clarify the depths to which any proposed CWP cable infrastructure will be buried in the approaches to Dun Laoghaire harbour, for example in this regard Commitment Reference C115, Chapter 33 does not provide any detail in relation to depth of burial to be achieved. The Commission strongly encourage further liaison between the applicant and DLRCC in responding to this issue.

19. Waste and Resource Management:

a) It is noted that the Construction and Demolition Waste Management Plan submitted, and Chapter 31 of the EIAR relates to onshore construction activities only. In scoping out the consideration of off-shore construction, operational/maintenance and decommissioning waste, Chapter 31 of the EIAR states that offshore construction waste shall be managed on board the vessels and in line with applicable licences and waste management legislation of the relevant base ports once confirmed. This, however, is not firmly committed to in any specific mitigation measures set out within the EIAR. The applicant is therefore requested to amend the EIAR to include this as a specific commitment within the suite of mitigation measures either as a primary design mitigation measure or as a specifically stated stand-alone mitigation measure in Chapter 31. Furthermore, the applicant is requested to commit to the provision and agreement of an offshore works Construction and Demolition Waste Management Plan incorporating the provisions of Section 5.8 (Offshore Waste Management) and 5.10 (Dropped Objects) of the Construction and Environmental Management Plan (neither of which have been referenced in Chapter 31). In the event that this request cannot be fully addressed by the applicant, the applicant is requested to provide explanation and justification for the response provided.

b) Further to item 19(a) above, the applicant is requested to provide further details in relation to the proposed management of construction and demolition waste within the intertidal area construction zone as Chapter 31 of the EIAR does not consider/review works below and beyond the high water mark. Whether open cut trenching (OCT) using a floating pontoon as originally proposed or Horizontal Directional Drilling (HDD) (which the Commission have asked to be considered as a potential construction methodology within this further information request) are used, the

application documentation presents uncertainty in relation to construction and waste management in the intertidal area. The Commission therefore queries how waste and resource management will be handled and regulated in the intertidal zone. In this regard, the applicant is requested to review and update Chapter 31 in relation to the management and mitigation of waste arisings (if any) within the intertidal zone, and provide details of any further mitigation measures which may be appropriate having regard to the designated nature of this location as both an SAC and SPA. Any additional mitigation or assessment requirements should also be accommodated within the other relevant sections of the EIAR and NIS as appropriate.

20. Seascape, Landscape and Visual Impact Assessment

a) The applicant is requested to submit an additional series of maps in support of Chapter 15 (Seascape, Landscape and Visual Impact Assessment) of the EIAR which colour codes the level of potential residual effects listed in tables 15-23, 15-24, 15-25, 15-26, 15-27, 15-28, and 15-29, across all identified receptors predicted to arise from the operations and maintenance impact 1 (Direct/Indirect long-term though reversible impacts on seascape, landscape/townscape, national designated landscapes and visual receptors) of the proposed development. The Commission is of the opinion that the discussion and assessment of seascape, landscape and visual impact assessment would greatly benefit from additional clarity being provided in the mapping to visually identify the residual impacts predicted at each of the receptors. Furthermore, the Commission notes that some receptors (such as sequential routes) are subdivided for discussion purposes and assignment of significance of impact within the text, however, such subdivisions are not identified in any associated mapping. In the interests of clarity any revised mapping should clearly identify such subdivisions and show through colour-coding all the predicted levels of residual effect from the tables (i.e. Imperceptible, Not Significant, Slight-Not Significant, Slight, Moderate-Slight, Moderate, Significant, Very Significant). In relation to this requested mapping the Commission acknowledges that recreational marine users (Visual receptor Group 9) residual effects cannot be accurately mapped outside established navigational lanes and ports.

b) Section 23.14 of the EIAR states that no monitoring is required in relation to the Landscape and Visual Impact Assessment and therefore no monitoring is outlined in the submitted In Principle Project Environmental Monitoring Plan. The applicant is advised that the Commission considers the successful establishment and growth of the mitigatory planting referenced within the relevant primary mitigation measures set

out in Section 23 of the EIAR (Table 23-11 refers) to be of significant importance (considering the established recreational amenities in the vicinity and the general amenity of the area) and to merit confirmation of successful implementation. Accordingly the applicant is requested to provide a suitable programme of monitoring, and any additional further adaptive measures to ensure the success of the relevant mitigatory planting/landscaping proposals as part of an updated IPEMP.

21. Noise

a) Appendix 24.3 – 'Operational Phase Offshore Wind Farm Turbine Noise' states that the sound power level data for the option A and option B layouts have been 'provided by CWP'. No further detail has been provided in relation to the source of this data, it's applicability to the proposed development, nor any commitment to the proposed installed technology adhering/committing to this sound power level. The applicant is requested to submit further information clarifying the source of this sound power level data and provide justification and/or commitment as to its applicability/suitability in the context of the current proposed development and the turbine (or range of turbine) technology proposed to be deployed.

b) The applicant is requested to amend Chapters 24 and 33 of the EIAR to include the commitments detailed in paragraphs 53, 54, and 55 of Appendix 24.1 as mitigation measures should the need to develop additional specific noise characteristic curtailment strategies arise.

c) The Commission notes that paragraph 437 of Chapter 24 of the EIAR states that no monitoring is required in relation to noise and vibration arising from the proposed development. In the absence of monitoring the applicant is requested to provide comprehensive details of how it is intended to assure all relevant stakeholders that the noise emission levels committed to and/or set out within the EIAR for construction, operational and maintenance, as well as decommissioning phases will not be exceeded. Should monitoring be proposed as the most effective means of ensuring application of the relevant noise emission levels the applicant is invited to include their proposals in this regard in an updated In Principle Project Environmental Monitoring Plan.

22. Onshore Substation Access Arrangements:

a) Chapter 4, paragraph 405 references the provision of a temporary bailey bridge to facilitate construction access to the on-shore substation site pending the provision of the permanent bridge. While the overall approach is acknowledged by the

Commission, no details have been provided in relation to the nature, extent, construction or installation details of the bailey bridge, the duration over which it will be in place, its ability to cater for the relevant construction traffic, and at what stage the permanent bridge will be required to be installed to facilitate the construction and operational process. Furthermore, the application documentation does not appear to include comprehensive details in relation to the intended treatment of the 7m wide temporary link road into the substation site off the Pigeon House Road following the construction phase. The applicant is requested to submit comprehensive details in this regard, as well as confirming that all relevant impacts arising from the temporary installation and removal of the bailey bridge have been incorporated into the overall environmental assessments throughout the EIAR.

Appendix A: Technical Note

a) Technical Note GIS Data Submission

Submission Format: Geodatabase, Geopackage and Shapefiles. GeoTIFF and raster spatial data frames should be submitted in projected Irish Transverse Mercator ITM (IRENET95. Heatmap generation in either .csv or .zarr file format. Shapefiles (.shp) to allow plotting in spatial analysis software (e.g. QGIS or R).

For proposed infrastructure entirely within the Nearshore (up to 3NM from the HWM) the coordinate reference system can be Irish Transverse Mercator (ITM) (EPSG:2157) or ETRS 1989 (EPSG:4258).

For proposed infrastructure in the Outer Maritime Area (3NM and greater from the HWM) the coordinate reference system shall be ETRS 1989 (EPSG:4258) or ETRS1989 UTM Zone 28N (EPSG:25828), 29N (EPSG:25829) or 30N (EPSG:25830) as relevant. For proposed infrastructure in the Outer Maritime Area (beyond 3NM) that cover multiple UTM Zones the coordinate reference system ETRS 1989 LAEA (EPSG:3035).

See 'Guidance Note on Providing Spatial Data on Strategic Infrastructure Developments and Strategic Housing Developments***."***

b) Technical Note on Models and Submitting Model Outputs

The information provided should include full details on the models themselves to include the model's name, resolution, relevant pressure, purpose, summary of activities, assumptions, justification, limitations (if any), validation, post construction infrastructure included, along with any other relevant information. A concise description of the model outputs (including pressure modelled, units, background level, change relative to baseline (e.g. %), list of activities assessed, as well as construction, operational and decommissioning phase consideration) should also be included.

Heat and contour maps showing the distribution of pressure (static or dispersive) over space and/or time should be produced and provided in paper format and also in high-quality Tagged Image File Format (TIFF) of minimum 300dpi and include suitable location identifying information. The resolution of the underlying grid used to produce heatmaps should be appropriate to visualise patterns and/or presented at scale(s)

relevant to a particular feature of interest. It is anticipated that multiple heatmaps (and associated data) may be required to adequately visualise all modelled output scenarios.

Appendix B: NSIP Templates

Templates from guidance document 'National Significant Infrastructure Projects – Advice on Cumulative Effects Assessment', Planning Inspectorate UK, September 2024 - Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - GOV.UK

'Appendix 1: Matrix 1 – Identification of 'other development' for CEA'

'Appendix 2: Matrix 1 – Assessment Matrix'

Appendix 1: Matrix 1 - Identification of 'other development' for CEA

Matrix 1 provides a means of summarising Stage 1 and Stage 2 of the CEA. It can be used to demonstrate that a systematic approach to identifying development for inclusion in CEA has been adopted. When cross referencing to evidence documents to support the conclusions, the specific document and section/paragraph number should be provided. The populated boxes below are designed to give an example of the type of information to be included.

'Other development' details						**Stage 1**		**Stage 2**			
ID	**Application Reference**	**Applicant for 'other development' and brief description**	**Distance from project**	**Status**	**Tier**	**Within ZOI?**	**Progress to Stage 2?**	**Overlap in temporal scope?**	**Scale and nature of development likely to have a significant effect?**	**Other factors**	**Progress to Stage 3/4?**
1	*Xx/xx/xxxx*	*Energy Developer Land east of village 350MW CCGT District/ County Council name Brief details…*	*1.5km*	*DCO Approved 21/09/2014 Including any policy status…*	*Tier 1*	*Falls within landscape, transport, noise, air quality and socio-economic ZOI.*	*Yes*	*Yes Construction dates Operation dates*	*Yes The (x)ha site would be visible in the same field of view from local AONB viewpoint as the proposed NSIP (Paragraph x of Energy Developer's ES). Construction programmes overlap with potential to give rise to cumulative traffic, noise, air quality and socio-economic effects.*	*n/a*	*Yes*
2	*Xx/xx/xxxx*	*Small housing development District/ County Council name Brief details…*	*0.5km*	*Approved 27/10/2011 Including any policy status…*	*Tier 1*	*Falls within transport and noise ZOI*	*Yes*	*No Construction dates Operation dates*	*No Small development of less than (x)ha*	*n/a*	*No*
3	*Xx/xx/xxxx*	*Highways Developer Junction upgrade scheme description, location NSIP/Planning Inspectorate Brief details…*	*5km*	*EIA scoping application 10/05/2007 Including any policy status…*	*Tier 2*	*Would fall within distance based criteria for landscape ZOI but is not within Zone of Theoretical Visibility for scheme due to topography*	*No*	*n/a*	*n/a*	*n/a*	*n/a*

Appendix 2: Matrix 1 - Assessment matrix

Matrix 2 is an example assessment matrix that provides a means of summarising the potential adverse or beneficial cumulative effects of the project with 'other development'. It can be used to demonstrate that a systematic approach to CEA has been adopted. When cross referencing to evidence documents to support the conclusions, the specific document and section/paragraph number should be provided. The populated boxes below illustrate the type of information that could be included, which may be supported by further detailed assessments/appendices as required.

ID	Tier	Application Reference	Applicant for 'other development' and brief description	Assessment of cumulative effect with NSIP	Proposed mitigation applicable to NSIP including any apportionment	Residual cumulative effect
Insert name of topic being cumulatively assessed						
ID Number to be carried through from Matrix 1	*Tier Number to be carried through from Matrix 1*	*Details to be carried through from Matrix 1*	*Details should build on information provided in Matrix 1 and Stage 3 evidence gathering as relevant*	*Provide relevant baseline description and assessment of effects, cross reference to any detailed information provided as supporting appendices to the CEA, where relevant. Set out any potential likely significant cumulative effects.*	*Set out proposed mitigation measure(s) to address cumulative effect(s).* *Cross reference to how stated mitigation is proposed to be secured e.g. reference DCO requirement number.* *Provide a statement regarding the contribution of each proposed development to the cumulative effect. If developments contribute equally to an effect, it may be reasonable to propose shared mitigation.* *If another development would contribute the majority of a cumulative effect, it may be appropriate to apportion the main burden of mitigation to that 'other development'. However, this should not be used as the basis for avoiding the need to provide appropriate mitigation measures in accordance with the EIA Regulations, and it is expected that appropriate mitigation for the proposed NSIP's effects would be incorporated within the application documents.* *Set out any joint mitigation proposals that have been achieved through consultation with 'other development' promoters*	*State residual significance of effect and whether beneficial or adverse.* *Provide brief commentary on the effectiveness of mitigation e.g. if mitigation reduces but does not avoid an impact or the residual effect is the same as the pre-mitigation effect*