Addendum to the Environmental Impact Assessment Report

NISA

North Irish Sea Array

Volume 3 - Offshore Chapters

Chapter 12
Benthic Subtidal and Intertidal Ecology

Statkraft

CIP
Copenhagen Infrastructure Partners

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APEM Group

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Contents

Tables

Table A12.16 Identified impacts considered for the assessment of cumulative impacts (replaces Table 12.23 of Chapter 12 of the 2024 EIAR) 12.50

12. Benthic Subtidal and Intertidal Ecology

North Irish Sea Array Windfarm Ltd (NISA, hereafter referred to as 'the Developer') has been considering the Request for Further Information (RFI) issued by An Bord Pleanála (now An Coimisiún Pleanála) as well as the third-party submissions received following public consultation. At An Coimisiún Pleanála's behest, the Developer has also continued to consult with stakeholders in respect of the 2024 planning application throughout 2024-2026. The Developer has refined elements of the design to respond to the third-party submissions, the continued public and stakeholder consultation and the RFI. Amendments are therefore required to Chapter 12: Benthic Subtidal and Intertidal Ecology of the 2024 Environmental Impact Assessment Report. Full details of consultation undertaken can be found in Appendix A.1.2.

For the purposes of clarity, this document shall be read in conjunction with the Chapter 12 submitted as part of the 2024 EIAR.

Any cross reference to a chapter, section, table, image, figure or appendix within this document is to another location within the Addendum to the EIAR unless explicitly stated otherwise. Any cross reference to anything included in the 2024 EIAR will be clearly labelled as such.

Text in bold is only used throughout this document to indicate where changes are required, and what is subsequently driving them. Text in italics is text from a section of the 2024 EIAR which is deleted, or quotations from other documents (as explicitly stated). Replacement text is in normal font.

Only tables which have been updated from the 2024 EIAR, or entirely new tables, have been included in the Addendum to the EIAR. These can be identified by the "A" prefix in the table caption. Any changes within an updated table, in comparison to tables within the 2024 EIAR, are indicated by grey shading in the relevant cell, column or row, as necessary. The exception to this is where tables have been replaced in their entirety.

The sections relevant to Chapter 12 in the RFI are included below.

RFI Section	RFI	Relevance to Chapter
1 (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.	The timeframes associated with the RFI have necessitated a review of the datasets previously used in the 2024 EIAR to ensure any necessary updates to the baseline environment are captured. Therefore, a review of the baseline benthic subtidal and intertidal environment has been undertaken to comply with RFI Section 1 (b).
1(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.	Following submission of the 2024 EIAR, AQUAFACT was commissioned by the Developer to undertake a benthic subtidal ecology survey covering the array area and ECC corridor to validate the baseline assumptions presented in the EIAR (Appendix A12.1: Benthic Ecology Survey Report 2025).
4	The documentation submitted does not provide specific detail, assessment, or review of the range of ecosystem functions and services which could be impacted by the proposed development. The National Marine Planning Framework (NMPF) states that proposals to protect, maintain, restore, and enhance coastal habitats for ecosystem functioning and provision of ecosystem services will be supported, subject to the outcome of statutory environmental assessment processes.	The Developer has not revised assessments in the respective Chapters of the EIAR as the conclusions of the EIAR are already directly linked to the assessment of ecosystem functions and services. This includes assessment of decommissioning impacts, the need for adaptive management, ongoing monitoring and/or other mitigations.

RFI Section	RFI	Relevance to Chapter
	Seafloor and Water Column Integrity Policy 3 of the NMPF also requires proposals to take account of the space required for coastal habitats, for ecosystem functioning and the provision of ecosystem services and to demonstrate that they will, in order of preference, avoid, minimise or mitigate for net loss of coastal habitats. The applicant is requested to update the EIAR to include an assessment of impacts (both positive and negative) on relevant ecosystem functions and services and include mitigation measures, as appropriate. The applicant is also requested to submit a synopsis report of the relevant impacts on ecosystem functions and services. In identifying the relevant ecosystem services for assessment, including those services classified as provisioning, regulation and maintenance, and cultural services, the applicant is advised to consider the full range of ecosystem services set out in the report 'Valuing Ireland's Blue Ecosystem Services' (SEMRU of NUI Galway, 2018), as referenced in the NMPF. The report should also consider the need for an adaptive management framework for ongoing assessment and should include provision for appropriate monitoring of any mitigation measures and operational management strategies, as well as provision for decommissioning.	The Developer has updated the Seafloor and Water Column Integrity Policy 3 in the addendum to the National Marine Planning Framework Compliance Report to provide more information to respond to RFI Section 4 (Appendix A3.1). A synopsis report of ecosystem functions and services has been provided in Appendix A3.3 Ecosystem Functions and Services Assessment. The outcome of individual receptor assessments, concluded no material impact on ecosystem services, and no impediment to the ability of normal ecosystem functions and services to function, resulting from the proposed development.
5	The Board notes that cumulative assessment was addressed under each topic specific chapter in the EIAR and addressed within Chapter 38 Cumulative and Inter related Effects Assessment (CEA) (and associated Appendices 38.1 and 38.2). The Marine Institute in their observation raises concerns in relation to the methodology applied in the submitted cumulative effects assessment and the manner in which the information is presented, noting the lack of a standard Irish methodology in relation to CEA. The applicant is advised that guidance exists in the UK, 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), Codling Wind Park (ABP-320768-24), and Dublin Array WF (ABP-321992-25), 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 Board for planning consent Since this application was submitted, have been fully incorporated into the cumulative effects assessment. In accordance with NSIP (2024) tiered approach, it is requested that the subject proposal and each of the Irish Sea Phase 1 ORE projects 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 cumulative effects assessment has been revised in line with NSIP (2024) and relevant sections of this Chapter.

RFI Section	RFI	Relevance to Chapter
	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 in the preparation of the above assessment and drafting of the tables attached in Appendix B.	
9 (a)	Much of the North Irish Sea Array (NISA) array area is characterised as 'Burrowing megafauna Maxmuelleria lankesteri in circalittoral mud' (SS.Smu.CfiMu.MegMax) (e.g. Chapter 12 Figure 12.5, Table 12.7). This biotope forms part of the OSPAR Threatened and / or Declining habitat of 'Sea-pen and Burrowing Megafauna Communities', (as evidenced in the Joint Nature Conservation Committee (JNCC) correlation tables;https://hub.jncc.gov.uk/assets/62a16757-e0d1-4a29-a98e948745804aec#201801MarineHabitatsCorrelations.xlsx). These tables identify evidenced relationships between habitats in the Marine Habitat Classification for Britain and Ireland, the marine section of the EUNIS classification, and those listed as being important for conservation under various legislative instruments (e.g. Annex I habitats, OSPAR habitats). While this biotope is extensive across the array area, and is of conservation and commercial value, the submitted EIAR does not include it in any Valued Ecological Receptor (VER) Group representative of this OSPAR habitat (see MC6216 in Table 12.11 of Section 12.3.5). The applicant is requested to provide confirmation of the presence of this biotope and provide a detailed map of where sampling has shown it to be present, including if available stills or video evidence associated with the sampling. Any additional evidence will support the assessment of potential impacts to this important OSPAR habitat.	Reference to the biotope 'Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud' (MC6216)' has now been added to Table A12.11 of the 2024 EIAR and will be included in this Chapter with the distribution recorded in 2022 indicated on Figure A12.3. The biotope has been considered throughout Section 12.5 Potential Effects.
9 (b)	It is noted that the applicant concludes that the 'sensitivity' of the 'Burrowing megafauna Maxmuelleria lankesteri in circalittoral mud' (SS.Smu.CfiMu.MegMax) biotope is 'high'. The Board agrees that this is appropriate for a biotope with this conservation importance. It would be expected, however, given the extent of the biotope across the array area, that 'magnitude' may be 'low' or 'medium' rather than 'negligible' noted in the EIAR. Given that a high sensitivity and a medium magnitude leads to a result of 'Significant' in EIA terms, the applicant is requested to review the justification provided for their magnitude of 'negligible', and either provide further evidence for this in the EIAR, or provide a reconsideration of magnitude for this receptor. If any magnitude values are changed, the applicant is requested to ensure that these feed through the impact assessment process. Following the provision of a revised assessment, the applicant should reconsider their pre-, during and post construction benthic monitoring requirements and plans as necessary.	This RFI relates to Impact 6 'Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection'. As stated in Section 12.5.3.1 of this document "The impact will be locally significant and comprise a permanent change in seabed habitat within the footprint of the structures and scour and cable protection, the footprint of the area affected is highly localised. A change of subtidal sediment biotopes to rock or artificial hard substratum would alter the loss of the sedimentary community and a change in the character of the biotope leading to reclassification. However, as the habitats and characterising biotopes are common and widespread throughout the wider region the magnitude of the loss of these habitats would be negligible". Therefore, considering the highly localised extent of the impact and the widespread distribution of the biotope magnitude is therefore assessed as negligible. No change to the assessment is required.
9 (c)	The intertidal survey data is unclear in relation to the potential presence of reef across the NISA landfall and nearshore shallow infralittoral ECC areas. The applicant is requested to clarify the extent of reef at this location. Depending on the location of the horizontal direction drill (HDD) exit points seaward of low	Section 12.3.2.5 Benthic Intertidal Ecology of this document: Sediments has been updated and Figure 12.6 redrawn to include additional data from the 2023 geophysical survey (see Figure A12.4).

RFI Section	RFI	Relevance to Chapter
	water, and subsequent cable trenching, there may be a localised risk to shallow sublittoral rock, if it is present. The applicant is requested to consider this potential impact. The Marine Institute in their observation states circalittoral rock and biogenic reef and infralittoral rock and biogenic reef should be avoided.	
9 (d)	Within Section 12.5.3.1 Chapter 12 of the EIAR, it is indicated that for Project Option 1, the 'Long-term or permanent subtidal habitat loss/change from the presence of foundations, scour protection and cable protection' equates to approximately 276,296m² of the array area and ECC representing approximately 0.22% of the combined areas, while for Project Option 2 the figures are 297,510m² and 0.24%. While spatially the impact will be highly localised within the array and ECC areas, it will be long-term and / or permanent, dependent on decommissioning. Assessment of magnitude for this pressure pathway was 'negligible'. In comparison, 'low' (not 'negligible') magnitude is assigned for colonisation of hard substrate in the EIAR. The applicant is requested to justify or amend the assigned magnitude impact rating of 'negligible' for 'Long-term or permanent subtidal habitat loss/change from the presence of foundations, scour protection and cable protection'.	In section 12.5.3.1 of this document, the magnitude of effect Impact 6 – Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection has been reassessed and set as low with text amended accordingly. Table 12.21: Residual effects relating to benthic subtidal and intertidal ecology has also been redrafted and replaced with Table A12.13.
9 (e)	The impact pathways of accidental release of contaminated sediments through sediment disturbance, and accidental release of pollutants, have been assessed together as 'Reduction in water and sediment quality through release of contaminated sediments and / or accidental contamination' (Chapter 12, table 12.1; table 12.14; sections 12.5.2.4, 12.5.3.6 and 12.5.4.3; table 12.21). The applicant is requested to complete separate assessments for the two impact pathways, as different considerations are required to conclude magnitude of impact(s).	The magnitude of Impact 4 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination has been addressed in Section 12.5.2.4 t of this document o include both the impact of release of contaminated sediment through sediment disturbance and through accidental pollution with additional text inserted with reference to accidental contamination.
9 (f)	It is noted that development of an Offshore Environmental Plan (OEMP) was not listed as a measure under the operation phase of the project, where it had only been listed under construction and decommissioning (section 12.4.5; table 12.13). The applicant is requested to clarify if an OEMP is considered a mitigation measure under the operation phase.	Offshore Environmental Management Plan Table A12.7: Embedded mitigation measures relating to benthic subtidal and intertidal ecology in this document, addresses the operation phase and replaces Table 12.13 of the 2024 EIAR.
9 (g)	The Board notes that potential impacts from EMF on benthic habitats has not been assessed. The applicant is requested to provide further analysis in this regard.	Section 12.4.7 'Impacts Scoped Out' of this document has been added providing rationale as to why impacts from EMF on benthic habitats have been scoped out of the assessment.

12.1 Introduction

In response to RFI Section 1 (b), the key change to this section is the addition of 2025 Benthic Survey Report under the paragraph stating the appendices should be read alongside this chapter:

- Appendix A12.1: Benthic Ecology Survey Report 2025**.**

There are no other changes to this section. Refer to Section 12.1 in Chapter 12 of the 2024 EIAR.

12.2 Methodology

12.2.1 Introduction

There are no changes to this section. Refer to Section 12.2.1 of Chapter 12 of the 2024 EIAR.

12.2.2 Study Area

There are no changes to this section. Refer to Section 12.2.2 of Chapter 12 of the 2024 EIAR.

12.2.3 Relevant Guidance and Policy

In response to RFI Section 1 (b), the key change to this section is the addition of NMPF policies to Table A12.1 which replaces Table 12.1 in the 2024 EIAR.

Table A12.1 Key NMPF policies relevant to the assessment (replaces Table 12.1 in Chapter 12 of the 2024 EIAR)

Policy name	Policy description	Where addressed
National Marine Policy Framework (2021)	Biodiversity Policy 1 Proposals incorporating features that enhance or facilitate species adaptation or migration, or natural native habitat connectivity will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals that may have significant adverse impacts on species adaptation or migration, or on natural native habitat connectivity must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts on species adaptation or migration, or on natural native habitat connectivity.	Likely significant effects of relevance to Biodiversity Policy 1 are addressed in: – Section 12.5.2.1 Impact 1: Temporary increase in SSC and sediment deposition – Section 12.5.2.3 Impact 3: Temporary habitat disturbance in array area and ECC. – Section 12.5.3.1 Impact 6: Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection. – Section 12.5.4.1 Impact 12: Temporary increase in SSC and sediment deposition; and – Section 12.5.4.2 Impact 13: Temporary habitat disturbance in the array area and ECC.
	Biodiversity Policy 2 Proposals that protect, maintain, restore and enhance the distribution and net extent of important habitats and distribution of important species will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must avoid significant reduction in the distribution and net extent of important habitats and other habitats that important species depend on, including avoidance of activity that may result in disturbance or displacement of habitats.	Likely significant effects of relevance to Biodiversity Policy 2 are addressed in: – Section 12.5.2.1 Impact 1: Temporary increase in SSC and sediment deposition. – Section 12.5.2.3 Impact 3: Temporary habitat disturbance in array area and ECC. – Section 12.5.3.1 Impact 6: Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection. – Section 12.5.4.1 Impact 12: Temporary increase in SSC and sediment deposition; and – Section 12.5.4.2 Impact 13: Temporary habitat disturbance in the array area and ECC.
	Protected Marine Sites Policy 1 Proposals must demonstrate that they can be implemented without adverse effects on the integrity of Special Areas of Conservation (SACs) or Special Protection Areas (SPAs). Where adverse effects from proposals remain following mitigation, in line with Habitats Directive Article 6(3), consent for the proposals cannot be granted unless the prerequisites set by Article 6(4) are met.	Likely significant effects of relevance to Protected Marine Sites Policy 1 are addressed in: – Table 12.10 identifies the designated sites which may be impacted by the Proposed Development. – Section 12.5.4.1 Impact 12: Temporary increase in SSC and sediment deposition.
	Non-indigenous Species Policy 1 Reducing the risk of the introduction and / or spread of non-indigenous species is a requirement of all proposals. Proposals must demonstrate a risk	Likely significant effects of relevance to Non-indigenous Species Policy 1 are addressed in: – Section 12.5.2.5 Impact 5: Introduction of MINNS; and

Policy name	Policy description	Where addressed
	management approach to prevent the introduction of and / or spread of non-indigenous species, particularly when: a) moving equipment or boats or livestock (from one water body to another, b) introducing structures suitable for settlement of non-indigenous species, or the spread of non-indigenous species known to exist in the area of the proposal.	– Section 12.5.3.4 Impact 9: Impacts of colonisation of introduced hard substrate on benthic ecology and diversity; and – Section 12.5.3.5 Impact 10 Introduction of MINNS.
	Water Quality Policy 1 Proposals that may have significant adverse impacts upon water quality, including upon habitats and species beneficial to water quality, must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts.	Likely significant effects of relevance to Water Quality Policy 1 are addressed in: – Section 12.5.2.1 Impact 1: Temporary increase in SSC and sediment deposition in subtidal habitats. – Section 12.5.2.3 Impact 3: Temporary habitat disturbance in array area and ECC. – Section 12.5.2.4 Impact 4: Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination; and – Section 12.5.4.1 Impact 12: Temporary increase in SSC and sediment deposition. Marine pollution contingency measures will be implemented as part of Appendix A6.1: Offshore Environmental Management Plan (EMP; hereafter Offshore EMP) to manage the risk of accidental spillages from construction equipment or collision incidents. This would include a chemical risk review with information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance. This measure would reduce the likelihood of potentially harmful pollutants to be released into the marine environment which may then impact on fish and shellfish receptors.
	Sea floor and Water Column Integrity Policy 1 Proposals that incorporate measures to support the resilience of marine habitats will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority and where they contribute to the policies and objectives of this NMPF. Proposals which may have significant adverse impacts on marine, particularly deep sea, habitats must demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate significant adverse impacts on marine habitats, or d) if it is not possible to mitigate significant adverse impacts on marine habitats must set out the reasons for proceeding.	Likely significant effects of relevance to Sea Floor and Water Column Integrity Policy 1 are addressed in: – Section 12.5.2.3 Impact 3: Temporary habitat disturbance in array area and ECC. – Section 12.5.3.1 Impact 6: Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection; and – Section 12.5.4.2 Impact 13: Temporary habitat disturbance in the array area and ECC. Mitigation in respect to likely effects is considered in Section 12.4.5.
	Sea floor and Water Column Integrity Policy 2 Proposals, including those that increase access to the maritime area, must demonstrate that they will, in order of preference and in accordance with legal requirements:	Likely significant effects of relevance to Sea Floor and Water Column Integrity Policy 2 are addressed in: – Section 12.5.2.3 Impact 3: Temporary habitat disturbance in array area and ECC

Policy name	Policy description	Where addressed
	a) avoid, b) minimise, or c) mitigate adverse impacts on important habitats and species.	– Section 12.5.3.1 Impact 6: Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection; and – Section 12.5.4.2 Impact 13: Temporary habitat disturbance in the array area and ECC. Mitigation in respect to likely effects is considered in Section 12.6.
	Sea floor and Water Column Integrity Policy 3 Proposals that protect, maintain, restore, and enhance coastal habitats for ecosystem functioning and provision of ecosystem services will be supported, subject to the outcome of statutory environmental assessment processes and subsequent decision by the competent authority, and where they contribute to the policies and objectives of this NMPF. Proposals must take account of the space required for coastal habitats, for ecosystem functioning and provision of ecosystem services, and demonstrate that they will, in order of preference and in accordance with legal requirements: a) avoid, b) minimise, or c) mitigate for net loss of coastal habitat.	Likely significant effects of relevance to Sea Floor and Water Column Integrity Policy 3 are addressed in: – Section 12.5.2.3 Impact 3: Temporary habitat disturbance in array area and ECC – Section 12.5.3.1 Impact 6: Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection; and – Section 12.5.4.2 Impact 13: Temporary habitat disturbance in the array area and ECC. Mitigation in respect to likely effects is considered in Section 12.6.

In Section 4 of the RFI, An Bord Pleanála requested the Developer to update the EIAR to include an assessment of impacts (both positive and negative) on ecosystem functions and services. The following text should be added to this section:

Marine ecosystem functions and services are considered within this chapter. The NMPF (2024) sets out the framework and proposed approach to managing Ireland's maritime activities to ensure the sustainable use of marine resources up to 2040. Environment policies in the NMPF have been split into nine categories largely aligned to the Marine Strategy Framework Directive (MSFD) Good Environmental Status (GES) descriptors as well as addressing air quality and climate change.

In particular, the Seafloor and Water Column Integrity Policy 3 of the NMPF also requires proposals to take account of the space required for coastal habitats, for ecosystem functioning and the provision of ecosystem services and to demonstrate that they will, in order of preference, avoid, minimise or mitigate for net loss of coastal habitats.

The conclusions of this chapter EIAR are directly linked to the assessment of ecosystem functions and services. Refer to Ecosystem Functions and Services Assessment (Appendix A3.3) which provides the link between MSFD, the Overarching Marine Planning Policy (OMPP) and EIAR topics.

There are no other changes required to this section. Refer to Section 12.2.3 of Chapter 12 of the EIAR.

12.2.4 Data Collection and Collation

There are no changes to this section. Refer to Section 12.2.4 of Chapter 12 of the 2024 EIAR.

12.2.5 Site-specific Surveys

In response to RFI Section 1 (b), the key change for this section is the addition of site-specific Benthic Ecology Survey Report 2025 and also the Nearshore and Intertidal Geophysical Survey 2023 (reported on in 2024). The paragraph in the 2024 EIAR is replaced with the text below and relevant details added to Table A12.2, replacing Table 12.2 of the 2024 EIAR:

Site-specific surveys for the proposed development have been undertaken to provide an up-to-date characterisation of the benthic subtidal and intertidal habitats and species occurring within the study area. The survey areas are referred to as 'intertidal survey area', 'ECC subtidal survey area' and 'array subtidal survey area,' hereafter (see Figure A12.1).

Following submission of the 2024 EIAR, AQUAFACT was commissioned by the Developer to undertake a benthic subtidal ecology survey covering the array area and ECC corridor to validate the baseline assumptions presented in the EIAR. All survey methodologies were in line with the relevant guidance documentation (Cefas, 2002; Cefas *et al.*, 2004; Davies *et al.*, 2001; Ware and Kenny, 2011). In addition, SEP Hydrographic was commissioned to conduct a geophysical survey in the nearshore cable route to bridge the survey coverage between intertidal and subtidal habitats and facilitate the identification of potential reef habitats (SEP Hydrographic, 2024).

The surveys are summarised in Table A12.2 below. The full detailed methodologies and analyses of the site-specific surveys are available within Appendices 12.1: Array Area Benthic Survey Report; 12.2: Cable Route Benthic Survey Report; Appendix A12.1: Benthic Ecology Survey Report 2025; and Nearshore and Intertidal Geophysical Survey (SEP Hydrographic, 2024).

Table A12.2 Site-specific benthic subtidal and intertidal survey data (replaces Table 12.2 in the 2024 EIAR)

Title	Summary	Spatial coverage
NISA Benthic Ecology Baseline Cable Route Benthic Survey Report (Natural Power Consultants Ltd, 2023).	An Intertidal Phase I walkover survey was undertaken on the 26th of September 2022 and was carried out between MHW and MLW to determine the composition and distribution of intertidal biotopes and the extent of sub-features. In areas of soft substrate, sediment characteristics were assessed with material collected from eight sites for particle size analysis (PSA) and Total Organic Carbon (TOC) content determination. Sediment samples were also collected from ten sites for infaunal analysis with sediment taken to a depth of 20-25cm and washed over a 1mm sieve with all retained fauna identified and enumerated. Biotopes/habitats were assigned and mapped by reference to the benthic community data collected and by reference to aerial imagery. The subtidal benthic survey campaign was carried out between the 27th of September – 1st October 2022 with 30 sites surveyed, of which 24 were within the ECC with the remainder directly to the south. Drop Down Video (DDV) transects were conducted at all sites to inform seabed habitat classification. Similarly, samples for infaunal analysis were collected at all 30 sites using a 0.1m^2 Day Grab. Material was washed over a 1mm sieve with all retained fauna identified and enumerated. Additional sediment was collected at ten sites for PSA and TOC determination while surficial sediments were collected for chemical analyses. Turbidity measurements were collected at various depths at three sites, one measurement per site; located near shore, mid-way along the ECC assessment area and near the array area. Sample sites are indicated on Figure 12.2.	Intertidal and ECC survey area
NISA Benthic Ecology Baseline Array Area Benthic Survey Report (Natural Power Consultants Ltd, 2022).	A total of 40 sampling stations were selected in the vicinity of the array area and the adjacent subtidal environment, of which 11 sites were within the array area. Sites were selected with reference to existing habitat and geophysical data to ensure that all habitats present within the survey area were represented. At each station sediment was collected for physiochemical analyses (PSA, TOC, chemistry) and a single 0.1m^2 Day Grab sample was taken for faunal analysis. DDV samples were collected from 12 sampling stations, five of which were within the array area distributed throughout the array. In addition, DDV data were acquired at 20 sites located to the southwest of the array area where	Array subtidal survey area

Title	Summary	Spatial coverage
	historical data indicated the prevalence of hard substrate unsuitable for grab sampling. All survey sites were within the area covered by the Marine Area Consent (MAC)[1] for the proposed development, which has been refined since the survey was undertaken in 2022 through design development to the offshore development area. Sample locations are indicated on Figure A12.2.	
NISA, Benthic Ecology Survey Report 2025 (Fenton *et al.*, 2025)	A total of 23 sampling stations were selected in the vicinity of the array area and ECC, of which 13 sites were within the array area and 10 within the ECC. Sites were selected with reference to 2022 surveys and existing geophysical data to ensure that all habitats present within the survey area were represented. At each station sediment was collected for physiochemical analyses (PSA, TOC, chemistry) and a single 0.1m^2 Day Grab sample was taken for faunal analysis. DDV samples were also collected from all 23 sampling stations. All survey sites were within the area covered by the Marine Area Consent (MAC) for the proposed development, which has been refined since the survey was undertaken in 2022 through design development to the offshore development area. Sample locations are indicated on Figure A12.2.	Array and ECC subtidal survey area
Nearshore and Intertidal Geophysical Survey (SEP Hydrographic, 2024)	Survey of the nearshore section of the ECC with side scan sonar, multi-beam echosounder, magnetometer and sub bottom profiler This was primarily used to obtain a full coverage of bathymetry in the ECC, to interpret and classify seabed features and to aid geological interpretation and understanding. 62 lines were surveyed orientated transversely across the ECC, with survey coverage extending 1.5km seaward from low water. The intertidal section of the ECC was surveyed using Seismic Refraction with ten lines running from the upper to lower shore.	Nearshore subtidal and intertidal areas of ECC

There are no other changes required to this section. Refer to Section 12.2.5 of Chapter 12 of the EIAR.

12.2.6 Desk-based Review

There are no changes to this section. Refer to Section 12.2.6 of Chapter 12 of the 2024 EIAR.

12.2.7 Data Limitations

There are no changes to this section. Refer to Section 12.2.7 of Chapter 12 of the 2024 EIAR.

12.2.8 Methodology for the Assessment of Effects

There are no changes to this section. Refer to Section 12.2.8 of Chapter 12 of the 2024 EIAR.

12.3 Baseline Environment

12.3.1 Introduction

There are no changes to this section. Refer to Section 12.3.1 of Chapter 12 of the 2024 EIAR.

12.3.2 Receiving Environment

There are no changes to this section. Refer to Section 12.3.2 of Chapter 12 of the 2024 EIAR.

[1] the MAC is a State consent, awarded to the Developer in December 2022 which allows the right to occupy a part of the maritime area and the ability to subsequently apply for development consent within that maritime area.

12.3.2.1 Benthic Subtidal Ecology: Sediments

In response to RFI Section 1 (b), this section is updated with additional data from 2025 survey. In response to RFI Section 9 (c), further updates have been provided with additional data from the 2023 geophysical survey. The sections within the 2024 EIAR for Array Area and EEC shall be deleted and replaced with the following:

Array area

Data from the 2022 site-specific surveys indicate that the seabed across the array area is generally homogenous and dominated by soft sediments. Granulometric data from the 11 stations sampled within the array area classified according to the Folk 7 system identifies the sediment at the majority of sites (8) as being 'muddy sand'. This sediment type was recorded at a further eight sites to the east and north of the array area. 'Sandy mud' was recorded at the other three sites in the array area, all of which were located in the southern half of the array area; sediments at sites to the south of the array area were also classified as 'sandy mud'.

In 2025 granulometric data indicated sediments to be somewhat finer than recorded in 2022 with sandy mud present throughout much of the array and muddy sands only evident in the southernmost portion of the array area (Figure A12.2).

Historical data supports the findings of the site-specific surveys. According to the broadscale habitat modelling, using the EUNIS geological classification system, the primary sediment type across the array area is described as sandy mud to muddy sand or deep circalittoral mud, with a patch of sand in the southern sector (EMODnet, 2022). Cefas data indicates that sediments are predominantly sand and sandy mud, with mud and sandy mud present in the north of the array area (Cefas, 2017). The site-specific surveys validate the INFOMAR predictive substrate modelling which predicted sediments within the array area to be predominantly characterised by sandy mud (INFOMAR, 2021).

Overall, as indicated in Chapter 10 Marine Geology, Oceanography and Physical Processes, the array area can be considered as a region of net deposition fine sediments (fine sands, silts, and muds) which is largely unresponsive to the influence of waves or tides with generally low concentrations of suspended sediment. These attributes are known to be shared with the wider area known as the Western Irish Sea Mud Belt (Coughlan, 2015).

ECC

Data from 2022 site-specific surveys across the ECC indicate a homogenous seabed characterised predominantly by sand with small but increasing proportions of silt and gravel evident further offshore. According to the Folk 7 classification the site-specific granulometric data would indicate that ECC sediments were predominantly 'sand' with two sites in the northeast corner classed as 'muddy sand' and one as 'mixed sediments'. Similar to that observed in the array area, sediments collected within the ECC in 2025 had higher proportions of fines compared to 2022, while some coarser material was also evident with all sites being classified as slightly gravelly muddy sand (Figure A12.2). Generally, the site-specific sediment data supports the predictive models available for the region and has good agreement with existing data.

Geophysical surveys undertaken in 2023 indicated that the rocky habitat extended from the intertidal into the shallow subtidal characterised by predominantly outcropping rock with major fractions of gravel and/or shell fragments. Further offshore the substrate was predominantly comprised of sand with small proportions of silt, gravel and or shell. A band of silty material was recorded approximately 750m offshore of the rocky habitats (Figure 12.6).

According to broadscale regional habitat models, the primary sediment type across the ECC is predicted to be sandy mud to muddy sand (EMODnet, 2022) (Figure 12.3**)**. The INFOMAR model (INFOMAR, 2021) also defines the ECC as predominantly mud to muddy sand with a small proportion of gravelly sediments evident closer inshore. Cefas data from multiple years confirms that sand and muddy sand are prevalent throughout the ECC (Cefas, 2017).

As indicated in Chapter 10, sediment transport patterns are driven by increased effects of tidal current and waves associated with the relatively shallow water of the ECC. This results in lower proportion of fines in bed sediments and increased SSC compared to further offshore.

There are no other changes to this section. Refer to Section 12.3.2.1 of Chapter 12 of the 2024 EIAR.

12.3.2.2 Benthic Subtidal Ecology: Organic Content of the Sediment

In response to RFI Section 1 (b), the Array area and ECC sections of the 2024 EIAR shall be deleted and replaced with the following, containing additional data from the 2025 survey.

Array area

In 2022 TOC values for all sites within the array area were less than 1%. Similarly, in 2022 at other sites within the study area located to the south and northeast of the array area, TOC were equal or less than 1%, with one exception, sampling station 2 – northeast of the array area, which had a value of 1.01%. Stations with a higher sand to silt ratio had lower proportions of TOC than stations dominated by silt. In 2025 TOC levels were also less than 1% with the highest recorded value being 0.69% (full details are provided in Appendix 12.1: Array Area Benthic Survey Report and Appendix A12.1 Benthic Ecology Survey Report 2025).

It is expected that sediments with greater proportions of silt and clay would retain more organic matter than sandy fractions, due to a greater adsorption capacity of fine-grained particles as a result of a larger surface area (Keil and Hedges, 1993; Burdige, 2007). Moreover, fine-grained particles enhance the preservation of organic matter through reduced redox potential and/or remineralization rates (Hedges and Keil, 1995; Dauwe *et al.*, 2001; Burdige, 2007).

ECC

In 2022 organic content (in the form of TOC) across the ECC ranged between 0.66 and 1.59%, while in 2025 the highest level recorded was 0.64%. No clear relationship between TOC and proportion of silt and clay was evident (full details are provided in Appendix 12.2: Cable Route Benthic Survey Report and Appendix A12.1 Benthic Ecology Survey Report 2025).

There are no other changes to this section. Refer to Section 12.3.2.2 of Chapter 12 in the 2024 EIAR.

12.3.2.3 Benthic Subtidal Ecology: Sediment Contaminants

In response to RFI Section 1 (b), this section is updated with additional data from 2025 survey and analysis undertaken in accordance with the Guidelines for the Assessment of Dredged Material for Disposal in Irish Waters (Cronin *et al*, 2006) and addendum (Marine Institute, 2019) which provide upper and lower Irish Action Levels. The sediment action levels provide further biological relevant information than BAC, which themselves are discussed in detail in Chapter 11: Marine Water and Sediment Quality of the 2024 EIAR. This section of Chapter 12 of the 2024 EIAR shall be deleted and replaced with the following:

For sediment quality, the physical properties of the seabed are important to provide an indication of contamination risk. For example, the potential for contamination increases with the proportion of fine sediment present since it is these smaller particles which more readily bind contaminants, due to their larger surface area to volume ratios and higher organic carbon content. Sediments consisting of coarser sand and gravel are generally accepted as carrying a much lower contamination risk. Information regarding particle sizes is an important step in assessing the contamination risk to the marine environment.

Sediment bound contaminant levels were analysed in accordance with the Guidelines for the Assessment of Dredged Material for Disposal in Irish Waters (Cronin *et al*, 2006) and addendum (Marine Institute, 2019) which provide upper and lower Irish Action Levels. All contaminants with concentrations below the lower action level (Class 1) are considered a low risk to the marine environment. Concentrations between the lower and upper action levels (Class 2) are considered marginally contaminated. Concentrations higher than the upper action level (Class 3) are considered likely to cause harm to a marine environment.

Array area

Sediments within the array area are typically dominated by muddy sand and sandy mud and would therefore be expected to have higher levels of metals compared to coarser sediments owing to the larger surface area and oxyhydride and organic coatings which readily sequester metals.

However, metal concentrations were considered to be generally low and were mostly lower than threshold level Irish guidelines. The only exceedance was for chromium at sites in the northern half of the array area which were marginally higher than the relevant lower action level and are therefore these sediments are characterised as Class 2 i.e. marginally contaminated and are not considered to constitute an environmental risk. In 2025, no metal concentrations were above the relevant lower action levels and are therefore all sediments were characterised as Class 1.

In both 2022 and 2025 the levels of organic chemicals were low throughout the array area with Total Hydrocarbon (THC) concentrations, polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCBs) being below the relevant lower action level (Class 1).

Further details of sediment contamination are provided in Chapter 11 and Appendix 12.1: Array Area Benthic Survey Report and Appendix A12.1: Benthic Ecology Survey Report 2025.

ECC

As anticipated, due to the relatively coarse nature of sediments in the ECC, sediment-bound metal levels were generally low in both 2022 and 2025. However, in 2022 at one (site 6) located in the nearshore part of the corridor (Figure 12.2) the relevant lower Irish Action Levels were exceeded for several metals, particularly cadmium and zinc, although due to the small level of exceedance in each case these metal levels are not considered to constitute an environmental risk. These sediments were characterised as Class 2 i.e. marginally contaminated and are not considered to constitute an environmental risk. In 2025 no metal concentrations exceeded the relevant lower action level in sediments collected from the ECC.

In both 2022 and 2025 the levels of organic chemicals were low across the ECC with Total Hydrocarbon (THC) concentrations, polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCBs) being below the relevant lower action levels (Class 1).

Further details of sediment contamination are provided in Appendix 12.2: Cable Route Benthic Survey Report and Appendix A12.1: Benthic Ecology Survey Report 2025.

There are no other changes to this section. Refer to Section 12.3.2.3 of Chapter 12 of the 2024 EIAR.

12.3.2.4 Benthic Subtidal Ecology: Seabed Habitat and Communities

Array area

In response to RFI Section 1 (b), this section is updated with additional data from 2025 survey. Therefore this Section shall be deleted from the 2024 EIAR and replaced with the following text:

2022

Across the 11 sites sampled in the array area during the 2022 site-specific surveys, between 5 and 24 species were identified per site with an average of 12 species per site. Abundance ranged from 8 to 47 individuals with an average of 26 per site.

The communities within the array area were characteristic of relatively fine sediments dominated by Annelids, while sites to the south of the array area (where sediments were coarser) were dominated by molluscs and echinoderms.

At the remaining 29 sites (outside the array area), between 3 and 38 species were identified per site with an average of 23 species per site. Abundance ranged from 38 to 154 individuals with an average of 70 per site.

By combining DDV data, PSA data, and macrofaunal data, two biotopes were identified within the array area (Table 12.7) (the distribution of the biotopes is presented in Figure 12.5).

The most commonly recorded biotope across the array area was ‘Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud’ (MC6217), which was recorded at ten of the 11 sites sampled within the array area. Species and features typical of this biotope identified during site-specific surveys included the burrowing mud shrimp *Callianassa subterranean* and *Nephrops* burrows and mounds. This biotope was also recorded at sites to the east and northeast of the array area where fine sediments predominated.

This habitat is included in the OSPAR List of Threatened and/or declining species and habitats[2]. The purpose of the list is to guide the OSPAR Commission in setting priorities for further work on the conservation and protection of marine biodiversity. The other site within the array area was assigned the biotope *'Amphiura filiformis*, *Kurtiella bidentata* and *Abra nitida* in circalittoral sandy mud' (MC6211). This site was located in the south of the array area where slightly coarser muddy sands were found. Species typical of this biotope recorded in site-specific surveys included the brittlestar *A. filiformis*, the bivalve *K. bidentata*, the horseshoe worm *Phoronis* sp. And the polychaete *Diplocirrus glaucus*. This biotope was also recorded at sites directly south of the array area in the transitional area where sandy mud and muddy sand sediment types were interspersed.

The sandier sediments to the south of the array area were characterised by the biotope *'Owenia fusiformis* and *Amphiura filiformis* in deep circalittoral sand or muddy sand' (MD5212). Typical species identified in the site-specific surveys included *A. filiformis*, *Phoronis* sp. and *K. bidentata*.

In the southwest corner of the subtidal component of the study area, DDV transects recorded circalittoral mixed sediment with relatively high numbers of epifaunal species. The coarse sediments and shell fragments provided suitable substrate for sessile epifauna such as hydroids, bryozoans and anemones to colonise. A single station to the south of the array area was classified as the biotope 'Seapens and burrowing megafauna in Atlantic circalittoral fine mud'(MC6216), where several individuals of the seapen *Virgula mirabilis* were present. This habitat is included in the OSPAR List of Threatened and/or declining species and habitats.

Further details of community structure and patterns recorded in 2022 are provided in Appendix 12.1 Array Area Benthic Survey Report.

2025

Across the 13 sites sampled in the array area during the 2025 validation survey, between 10 and 27 taxa species were identified per site with an average of 19 species per site. Abundance ranged from 17 to 92 individuals with an average of 40 per site. The communities within the array area were typical of relatively fine sediments being characterised by polychaetes, amphipods and bivalve molluscs.

By combining DDV data, PSA data, and macrofaunal data, two biotopes were identified within the array area (Table A12.3) (the distribution of the biotopes is presented in Figure A12.3). The most commonly recorded biotope across the array area was '*Levinsenia gracilis and Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud' (MD6217), which was recorded at ten of the 11 sites sampled within the array area. Species typical at these sites included the amphipod *Ampelisca tenuicornis*, the polychaetes *Abyssoninoe hibernica*, *Nephtys incisa*, *Magelona minuta Diplocirrus glaucus* and *Scolelepis* sp. and the bivalves *Abra* sp. and *Varicorbula gibba.* In addition, DDV data indicates the presence of *Nephrops* throughout the array area. While this biotope was not recorded in 2022, the fauna recorded was similar to that observed across much of the array area in 2022.

The other site for which infaunal community data was available, which was located in the south west corner of the array area, was characterised by seven taxa including the molluscs *Cylichna cylindracea*, *Turritellinella tricarinata* and *Chaetoderma nitidulum,* the polychaetes *Scalibregma iinflatum* and *Diplocirrus glaucus* and the amphipods *Harpinia* and *Abludomelita obtusata*. However, the community present could not be assigned a specific biotope.

Further details of community structure and patterns recorded in 2025 are provided in Appendix A12.1: Benthic Ecology Survey Report 2025.

[2] OSPAR List of Threatened and/or Declining Species and Habitats is a list of species and habitats identified as being in need of protection under the OSPAR Strategy for the Protection and Conservation of Ecosystems and Biological Diversity: https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats

Table A12.3 Biotopes found across the array area and adjacent subtidal component of the study area in 2022 and 2025 (replaces Table 12.7 in Chapter 12 of the 2024 EIAR)

EUNIS Code (2022)	Biotope Name	JNCC 04.05 Code	Location
2022			
MC6217	Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	SS.Smu.CfiMu.MegMax	Ten sites within the array area and eight sites to the east and north east of the array area
MC6211	*Amphiura filiformis, Kurtiella bidentata* and *Abra nitida* in circalittoral sandy mud	SS.Smu.CsaMu.AfilKurAnit	One site in south of array area with three directly south of the array area and five in south eastern part of survey area
MD5212	*Owenia fusiformis* and *Amphiura filiformis* in offshore circalittoral sand or muddy sand	SS.Ssa.Osa.OfusAfil	12 sites to south of array area
MC4	Circalittoral mixed sediment	SS.SMx.CMx	At DDV sites in southwest corner of the survey area
MC6216	Seapens and burrowing megafauna in circalittoral fine mud	SS.Smu.CfiMu.SpnMeg	One site in south west corner of survey area
2025			
MD6217	*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud	SS.SMu.Omu.LevHet	Throughout the array area

ECC

In response to RFI Section 1 (b), this section is updated with additional data from the 2025 survey. Therefore, the following text shall be added and Table 12.8 in the EIAR is replaced with Table A 12.4:

2025

Across the 10 sites sampled in the ECC during the 2025 validation survey, between 24 and 61 taxa were identified per site with an average of 50 species per site. Abundance ranged from 51 to 694 individuals with an average of 335 per site. The communities within the array area were typical of relatively fine sediments being characterised by polychaetes, amphipods and bivalve molluscs. Offshore communities were typified by molluscs and polychaetes, while further inshore echinoderms and molluscs dominated. At nearshore sites, molluscs and polychaetes were the dominant groups.

By combining and considering collectively the DDV data, particle size data and macrofaunal data four biotopes were identified within the ECC (Table A12.4; Figure A12.3).

The two most inshore sites samples in ECC in 2025 were assigned the biotope '*Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand' (MB5236). Species typical of this biotope recorded during site-specific surveys included the polychaetes *Spiophanes bombyx*, *Magelona mirabilis*, *Nephtys* sp. and *Spio* sp. and the bivalve *Nucula nitidosa*. The distribution of this biotope in 2025 is similar to that reported in 2022.

Further offshore a single site was assigned the biotope '*Abra alba* and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment' (MC5214) was identified. Species typical of this biotope recorded in site-specific surveys included the polychaetes *Spiophanes Kroyeri*, *Melinna palmata* and *Owenia* sp. and the bivalves *Nucula nitidosa* and *Phaxas pellucidus* and Ophiuroid brittlestars. This biotope was recorded from similar area of the ECC in 2022.

In the middle section of the ECC benthic habitats were characterised by sandy mud with high numbers of the brittlestar *Amphiura filiformis* and bivalve molluscs, particularly *Nucula nitidosa* and *Kurtiella bidentata*

which were represented by the biotope '*Amphiura filiformis*, *Kurtiella bidentata* and Abra nitida in circalittoral sandy mud' (MC6211). This biotope was recorded from similar area of the ECC in 2022. The majority of sites in the eastern third of the ECC were characterised as a mosaic of MC5124 and MC6211.

One site adjacent to the array area supported a similar fauna to that found across the array area and was accordingly assigned the biotope '*Levinsenia gracilis* and *Heteromastus filifirmis* in Atlantic offshore circalittoral mud and sandy mud' (MD6217) as found throughout the array area.

Table A12.4 Biotopes identified across the ECC subtidal survey area and adjacent subtidal component of the study area in 2022 and 2025 (blue shading indicates biotopes recorded in both surveys) (replaces Table 12.8 In Chapter 12 of the 2024 EIAR)

EUNIS Code (2022)	Biotope Name	JNCC 04.05 Code	Location
2022			
MC62	Circalittoral sandy mud	SS.Smu.CsaMu	One site in the mid section of the ECC
MB5236	*Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand	SS.Ssa.ImuSa.FfabMag	Two most inshore sites in the ECC
MC4213	*Mysella bidentata* and *Thyasira* spp. In circalittoral muddy mixed sediment	SS.SMx.CMx.KurThyMx	Two most offshore sites adjacent to array area
MC5214	*Abra alba* and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	SS.Ssa.CmuSa.AalbNuc	Three nearshore sites within ECC, one site in middle of ECC and one site to the south
MC6213	*Amphiura filiformis* and *Nuculoma tenuis* in Atlantic circalittoral and offshore muddy sand	SS.Smu.CsaMu.AfilEten	Six sites within mid section area of ECC
MC52	Circalittoral fine sand	SS.Ssa.CfiSa	Five sites in offshore portion of ECC and two sites directly to south
MC6211	*Amphiura filiformis, Mysella bidentata* and *Abra nitida* in Atlantic circalittoral sandy mud	SS.Smu.CsaMu.AfilKurAnit	Four sites within the mid section of ECC and three to the south
2025			
MB5236	*Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand	SS.Ssa.ImuSa.FfabMag	Two most inshore sites in the ECC
MC5214	*Abra alba* and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	SS.Ssa.CmuSa.AalbNuc	Three nearshore sites within ECC, one site in middle of ECC and one site to the south

EUNIS Code (2022)	Biotope Name	JNCC 04.05 Code	Location
MC6211	*Amphiura filiformis, Mysella bidentata* and *Abra nitida* in Atlantic circalittoral sandy mud	SS.Smu.CsaMu.AfilKurAnit	Four sites within the mid section of ECC and three to the south
MD6217	*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud	SS.SMu.Omu.LevHet	One site adjacent to the array area

There are no other changes to this section. Refer to Section 12.3.2.4 Chapter 12 of the 2024 EIAR

12.3.2.5 Benthic Intertidal Ecology: Sediments

In response to RFI Section 9 (c), updates have been provided with additional data from the 2023 geophysical survey. Accordingly, the subtidal sediment section (Section 12.3.2.5) within the 2024 EIAR for shall be deleted and replaced with the following:

The intertidal component of the study area covers the area between HWM and LWM north of Balbriggan near Bremore Bay Beach and Coney Hill Bay Beach. This area encompasses the entire intertidal component of the ECC with additional areas directly to the north and south (see Figure A12.4). Much of the substrates here consist of boulders and rocky outcrops with shingle and sand towards the top of the shore. The shore bordering the ECC to both the north and the south are characterised by sandy substrates with rocky outcrops. Geophysical data collected in 2023 indicated that the shore is characterised by sandy sediments interspersed by rocky outcrops.

Site-specific surveys identified intertidal sediment as predominantly sands (according to the Folk classification system). However, at site 7, located in the southern third of the intertidal survey area, slightly coarser gravelly sand was recorded.

INFOMAR data for the intertidal survey area describes substrates as sand and as circalittoral fine sand or circalittoral muddy sand (according to the EUNIS classification system). Infralittoral fine sand and infralittoral muddy sands are also present in the intertidal zone in proximity to the Coney Hill landfall.

Further details of habitat types are provided in Appendix 12.2: Cable Route Benthic Survey Report.

12.3.2.6 Benthic Intertidal Ecology: Organic Content of the Sediment

There are no changes to this section. Refer to Section 12.3.2.6 Chapter 12 of the 2024 EIAR.

12.3.2.7 Benthic Intertidal Ecology: Sediment Contaminants

There are no changes to this section. Refer to Section 12.3.2.7 Chapter 12 of the 2024 EIAR.

12.3.2.8 Benthic Intertidal Ecology: Seabed Habitats and Communities

There are no changes to this section. Refer to Section 12.3.2.8 Chapter 12 of the 2024 EIAR.

12.3.3 Designated Sites

There are no changes to this section. Refer to Section 12.3.3 Chapter 12 of the 2024 EIAR.

12.3.4 Features of Conservation Interest

In response to RFI Section 9 (c), updates have been provided with additional data from the 2023 geophysical survey. Accordingly, the subtidal sediment section (Section 12.3.4) within the 2024 EIAR for shall be deleted and replaced with the following:

A review has been undertaken to identify benthic features of conservation interest within the benthic subtidal and intertidal ecology study area. Features of Conservation Interest are those features that are particularly threatened, rare, or declining species and habitats which are listed in the Habitats Directive Annex 1 (habitats) and Annexes II, IV and V (species). It should be noted that any Likely Significant Effects (LSE) on qualifying features within designated sites have been considered in the NIS. Any features of conservation importance that lie outside of these designated sites are identified within this section of the report.

No subtidal Annex I habitats[3] were identified during the site-specific surveys. However, the biotope "Seapens and burrowing megafauna in Atlantic circalittoral fine mud" (Code MC6216), which is listed under the OSPAR list of threatened and/or declining species and habitats, was identified at a single site in the array subtidal survey area, to the south of the array area (Figure 12.5).

Biogenic reefs comprised of dense aggregations of the tube-building polychaete *Sabellaria spinulosa* are classed as an Annex I habitat. The site-specific surveys identified individuals of *S. spinulosa* at four stations within the ECC, although abundances were relatively low, and no stations were classified as *S. spinulosa* reef according to the definition given by Gubbay (2007). Given the *S. spinulosa* were recorded as individuals and not in an aggregation form, they don't constitute and Annex I habitat. Similarly, no aggregations were identified during DDV survey undertaken south-west corner of the array area (see Appendix 12.2: Cable Route Benthic Survey Report).

Reef habitats on hard compact substrata (including rock, boulders, and cobbles) are classified as an Annex I priority habitat (European Commission, 2013). Data from the EMODnet Habitats Directive Annex I habitat maps (EUSeaMap, 2019) indicates with high confidence that there are Annex I geogenic reef habitats near to the southwest of the array area which are assigned the biotope "Moderate energy circalittoral rock".

However, DDV imagery collected as part of the site-specific surveys indicated that potential reef did not in fact constitute reef according to criteria and methodology detailed by Gubbay (2007), Irving (2009) and Golding *et al.* (2020), therefore no Annex I geogenic reef were recorded in the ECC and array subtidal survey area during the site-specific surveys.

Geophysical data collected in 2023 indicated the presence of rocky habitat in the shallow subtidal area of the ECC, which is a seaward extension of intertidal rocky habitats. It should be noted that this habitat has not been ground truthed for assessment for potential Annex 1 reef habitat. Given that the indicative locations for the nearshore HDD exit pits are below the LWM , these will not impinge on the nearshore rocky habitat as indicated by the 2023 geophysical survey (SEP Hydrographic (2024).

While no intertidal reefs were identified across the intertidal survey area during the site-specific surveys results did indicate the presence of potential reef habitats, these included:

- '*Fucus vesiculosus* and barnacle mosaics on moderately exposed mid eulittoral rock' (MA1243);
- '*Fucus vesiculosus* on full salinity moderately exposed to sheltered mid eulittoral rock' (MA123D1); and
- '*Fucus serratus* and under-boulder fauna on exposed to moderately exposed lower eulittoral boulders' (MA12442).

12.3.5 Valued Ecological Receptors (VERs)

In response to RFI Section 9 (a), the biotope Burrowing megafauna and *Maxmuelleria lankesteri* in circalittoral mud is added to Table A12.5 as it was identified in the 2022 survey. Table A12.5 replaces Table 12.11 of the 2024 EIAR. There are no other changes to this section. Refer to Section 12.3.5 Chapter 12 in the 2024 EIAR.

[3] Natural habitat types of community interest whose conservation requires the designation of Special Areas of Conservation.

Table A12.5 VERs within the benthic subtidal and intertidal ecology study area (replaces Table 12.11 of the EIAR)

VER	Representative biotope (EUNIS, 2022)	Protection status	Conservation interest	Distribution within array area and ECC (offshore and intertidal)	Importance within benthic subtidal and intertidal ecology study area and justification
Subtidal					
Coarse and mixed sediments with moderate to high infaunal diversity and epibenthic communities	MC52 MB5236 MC5214 MD5212	None	Habitats of Principal importance and UK Biodiversity Action Plan (BAP) priority habitat (subtidal sands and gravels)	Identified from the nearshore to the middle area of the ECC and in the southern area of the array area.	Regional – although this habitat is representative of a nationally important marine habitat, the Irish Sea is not a single key geographic area.
Brittlestar and mollusca dominated communities in sandy mud	MC6211 MC6213	None	Habitats of Principal importance and UK BAP (subtidal sands and gravels) Sublittoral sediment included as revised Annex I of Resolution 4 habitat type of the Bern Convention	Identified from the middle area of the ECC and in the central to southern area of the array area.	Regional – although this habitat is representative of a nationally important marine habitat, the Irish Sea is not a single key geographic area.
Non-cohesive muddy sands or slightly shelly/gravelly muddy sand characterised by bivalves or polychaetes	MC4213 MC5214 MC6217 MC62	None	N/A	Identified from the middle and offshore areas of the ECC and in the northern half of the array area.	None
Seapens and burrowing megafauna in circalittoral fine mud	MC6216	None	OSPAR List of Threatened and/or Declining Species and Habitats (Region II – North Sea, Region III – Celtic Sea).	Identified from single site on eastern south west corner of array area.	Regional – although this habitat is representative of a nationally important marine habitat, the Irish Sea is not a single key geographic area.
Burrowing megafauna and *Maxmuelleria lankesteri* in circalittoral mud	MC6216	None	OSPAR List of Threatened and/or Declining Species and Habitats (Region II – North Sea, Region III – Celtic Sea).	Ten sites within the array area and eight sites to the east and north east of the array area	International and regional – although this habitat is representative of an internationally and nationally important marine habitat, the Irish Sea is not a single key geographic area.
Atlantic offshore circalittoral mud	MD6217	None	Habitats of Principal importance (mud habitats in deep water)	Identified throughout the array area.	Regional – although this habitat is representative of a nationally important marine habitat, the Irish Sea is not a single key geographic area.

VER	Representative biotope (EUNIS, 2022)	Protection status	Conservation interest	Distribution within array area and ECC (offshore and intertidal)	Importance within benthic subtidal and intertidal ecology study area and justification
Subtidal sands and gravels	MC4	None	Habitats of Principal importance and UK BAP priority habitat (subtidal sands and gravels)	Identified from the south-western corner of the array area.	Regional – although this habitat is representative of a nationally important marine habitat, the Irish Sea is not a single key geographic area.
Intertidal					
Littoral sand dominated by polychaetes	MA524 MA5241 MA52412 MA52331	None	N/A	Identified throughout intertidal component of the study area where sedimentary habitats occurred.	None – habitat is not protected under any conservation legislation and is found widespread throughout the Irish Sea geographic area.
Phaeophyceae on moderately exposed mid eulittoral rock to full salinity mid eulittoral mixed substrata	MA1243 MA123E2 MA123D1 MA12442	None	N/A	Identified throughout the mid and lower shore of the intertidal survey area where rocky substrate predominated.	None – habitat is not protected under any conservation legislation and is found widespread throughout the Irish Sea geographic area.
Ulvophyceae on freshwater-influenced and/or unstable upper eulittoral rock	MA123G	None	N/A	Identified from the upper shore in the southern half of the intertidal survey area.	None – habitat is not protected under any conservation legislation and is found widespread throughout the Irish Sea geographic area.
Barren littoral shingle	MA3211	None	N/A	Identified in much of the upper shore of the intertidal survey area just below MHW.	None – habitat is not protected under any conservation legislation and is found widespread throughout the Irish Sea geographic area.
Annex I habitat features of SACs					
Reefs [1170]	None	Annex I habitat	Annex I within a SAC	The SAC does not overlap with the proposed development boundary. However, indirect impacts using a 12km tidal excursion have been screened into the assessment on a precautionary basis. The 12km tidal excursion from both the array area and ECC overlaps with the SAC.	International – part of European designated sites (Rockabill to Dalkey Island SAC).
Estuaries	None	Annex I habitat	Annex I within a SAC	The 12km tidal excursion from both the array area and ECC overlaps with the SACs.	International – part of European designated sites (Boyne Coast and Estuary SAC and Rogerstown Estuary SAC).

VER	Representative biotope (EUNIS, 2022)	Protection status	Conservation interest	Distribution within array area and ECC (offshore and intertidal)	Importance within benthic subtidal and intertidal ecology study area and justification
Mudflats and sandflats not covered by seawater at low tide	None	Annex I habitat	Annex I within an SAC	The SACs do not overlap with the proposed development boundary. Indirect impacts using a 12km tidal excursion have been screened into the assessment on a precautionary basis. The 12km tidal excursion from both the array area and ECC overlaps with the SACs.	International – part of European designated sites (Boyne Coast and Estuary SAC, Rogerstown Estuary SAC, and Malahide Estuary SAC). These features represent a potential resource for bird species for which SPAs listed in Table 12.10.

12.4 Characteristics of the Proposed Development

The change required in this section is the revision of the foundation types for Project Option 1 and Project Option 2. In the 2024 EIAR, Wind Turbine Generator (WTG) monopile foundations and OSP monopile and jacket foundations with pin piles were considered. Following further design refinement in response to the RFI, WTGs are now proposed with Suction Bucket Jacket (SBJ) foundations, and OSPs with jacket foundations installed with either pin piles or suction buckets, as indicated by the grey shading in Table A12.6 below. Therefore, Table 12.12 in Chapter 12 of the 2024 EIAR shall be deleted and replaced with Table A12.6.

Table A12.6 Key Characteristics of Project Option 1 and Project Option 2 (replaces Table 12.12 of the 2024 EIAR)

Key Offshore Characteristics	Project Option 1	Project Option 2
Array area	88.5km^2	88.5km^2
ECC	36.45km^2	36.45km^2
Landfall	One landfall site, immediately south of Bremore Point, which includes two subtidal exit pits within the ECC	One landfall site, immediately south of Bremore Point, which includes two subtidal exit pits within the ECC
WTG	49 WTGs with 250m rotor diameter	35 WTGs with 276m rotor diameter
WTG Foundations	49 WTGs supported on a multi-leg jacket foundation (three or four leg configuration) founded on suction buckets	35 WTGs supported on a multi-leg jacket foundation (three or four leg configuration) founded on suction buckets
OSP Foundations (array area)	One OSP, supported on a multi-leg jacket foundation (four leg configuration) founded on suction buckets or drilled pin piles	One OSP, supported on a multi-leg jacket foundation (four leg configuration) founded on suction buckets or drilled pin piles
Cables	Installation of 111km of array cables within the array area and installation of two 18km export cables within the ECC	Installation of 91km of array cables within the array area and installation of two 18km export cables within the ECC

There are no other changes to this section. Refer to Section 12.4 Chapter 12 of the 2024 EIAR.

12.4.1 Parameters for Assessment

There are no changes to this section. Refer to Section 12.4.1 of Chapter 12 of the 2024 EIAR.

12.4.2 Construction

There are no changes to this section. Refer to Section 12.4.2 of Chapter 12 of the 2024 EIAR.

12.4.3 Operational Phase

There are no changes to this section. Refer to Section 12.4.3 of Chapter 12 of the 2024 EIAR.

12.4.4 Decommissioning

There are no changes to this section. Refer to Section 12.4.4 of Chapter 12 of the 2024 EIAR.

12.4.5 Embedded Mitigation Measures

The key change required in this section is the addition of the Offshore EMP for the operation phase of the proposed development (as per RFI Section 9 (f). Table 12.13 of Chapter 12 of the 2024 EIAR has been replaced by Table A12.7 below:

Table A12.7 Embedded mitigation measures relating to benthic subtidal and intertidal ecology (replaces Table 12.13 of the 2024 EIAR)

Type of mitigation measure	Description of Mitigation measure
Construction	
Cable installation measures/Cable Burial Risk Assessment	Cable installation measures will minimise adverse impacts to potentially sensitive receptors. It will also set out appropriate cable burial depth in accordance with industry good practice, reducing the risk of cable exposure and based on a cable burial risk assessment. Cables will be buried to a sufficient depth to ensure that they are not exposed via erosion or seabed lowering. Where target cable burial depth cannot be achieved during the cable installation process (for any of inter-array, interconnector, or export cables), cable armouring will be implemented (e.g. mattressing, or rock placement etc). The suitability of installing rock or mattresses for cable protection will be investigated, based on (inter alia) the seabed current data at the location of interest and a risk assessment of the potential for cable damage to occur. Cable installation measures are captured in the Offshore Environmental Management Plan (EMP).
Cable burial	Cable installation will follow the burial hierarchy, where practicable two attempts will be made to bury cables before cable protection is used.
Landfall	The installation of the offshore export cables at landfall will be undertaken by HDD beneath the intertidal zone which will prevent any direct disturbance to intertidal receptors. The HDD exit pits will be located within the ECC seaward of the LWM at a point where cable installation vessels can operate.
Project Design	Presence of sensitive habitats will be identified through a review of the latest available benthic datasets and pre-construction surveys. Proposed development infrastructure will avoid protected habitats wherever reasonably practicable to an extent not resulting in a hazard for marine traffic and Search & Rescue capability.
Offshore Environmental Management Plan (EMP)	An Offshore EMP will be developed and will include details of: Marine pollution contingency measures to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised project in relation to all activities carried out below the HWM; • A chemical risk review to include information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance; • Marine biosecurity measures detailing how the risk of introduction and spread of invasive non-native species will be minimised; • Waste management and disposal arrangements; • A vessel management plan, to determine vessel routing to and from construction sites and ports, to include a code of conduct for vessel operators; and • The appointment and responsibilities of a company Fisheries Liaison Officer (FLO).
Pre-construction profile survey	Where necessary, before works commence and following reinstatement, a topographical survey of the nearshore subtidal area will be carried out to identify and map the contours of the subtidal HDD exit pit to ensure a profile similar in nature to the profile recorded during the pre-construction survey is reinstated, as far as practicable.
Operation	
Offshore EMP	An Offshore EMP will be developed and will include details of: Marine pollution contingency measures to address the risks, methods and procedures to deal with any spills and collision incidents of the authorised project in relation to all activities carried out below the HWM; • A chemical risk review to include information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance; • Marine biosecurity measures detailing how the risk of introduction and spread of invasive non-native species will be minimised; • Waste management and disposal arrangements; • Operational monitoring plan; • A vessel management plan, to determine vessel routing to and from the windfarm site and ports, to include a code of conduct for vessel operators; and • The appointment and responsibilities of a company Fisheries Liaison Officer (FLO).

Type of mitigation measure	Description of Mitigation measure
Electromagnetic Field (EMF) and cable protection	Where practicable cables will be buried to reduce the impacts of EMF on sensitive receptors and minimise the requirement for additional cable protection.
Decommissioning	
Assessment of impacts and best practice environmental management	Prior to decommissioning a study of the potential environmental impacts to benthic ecology receptors from the proposed decommissioning activities will be undertaken, considering the baseline environment at the pre-decommissioning stage. All mitigation measures to be captured will be captured within Appendix A6.2 Rehabilitation Schedule and the decommissioning strategy within the Appendix A6.1 Offshore EMP. Any licences or authorisations that might be required will be identified and obtained prior to decommissioning, including any validation, updating or new submission of an EIAR, as required.

There are no other changes to this section. Refer to Section 12.4.5 of Chapter 12 of the 2024 EIAR.

12.4.6 Potential Impacts

The changes required in this section are a result of design refinements in response to the RFI; WTGs are now proposed with SBJ foundations, and OSPs with jacket foundations with either drilled pin piles or suction buckets, as indicated by the grey shading in Table A12.8 below. Therefore, Table 12.14 of Chapter 12 of the 2024 EIAR shall be deleted and replaced with Table A12.8.

Table A12.8 Potential impacts and magnitude of impact per project option. The project option that has the greatest magnitude of impact is identified in blue (replaces Table 12.14 of the 2024 EIAR)

Potential Impact	Project Option 1 (49 WTG)	Project Option 2 (35 WTG)	Rationale for the project option with the greatest magnitude of impact
Construction			
Impact 1 - Temporary increase in SSC and sediment deposition in subtidal habitats	**Total volume of suspended sediment and sediment deposition 455,139 m^3.** **OSP Foundation** Drill cutting for OSP pin piles = 10,1798m^3 **Cable trenching:** Installation of 111km of array cables = 333,000m^3 Cable crossing preparation = 5,188m^3 Installation of two export cables each of 18km length = 108,000m^3 **Subtidal HDD:** Exit pits total volume = 3,960m^3 Release of drilling muds (i.e. bentonite) during exit pit punch-out = 30 tonnes	**Total volume of suspended sediment and sediment deposition 395,139 m^3.** **OSP Foundation** Drill cutting for OSP pin piles = 10,179m^3 **Cable trenching:** Installation of 91km of array cables = 273,000m^3 Cable crossing preparation = 5,188m^3 Installation of two export cables each of 18km length = 108,000m^3 **Subtidal HDD:** Exit pits total volume = 3,960m^3. Release of drilling muds (i.e. bentonite) during exit pit punch-out = 30 tonnes	**Project Option 1 represents the greatest magnitude of impact in relation to these impacts.** For cable installation, the greatest magnitude of impact results from the greatest volume installation using energetic means. This also assumes the largest number of cables and the greatest burial depth. One OSP will be constructed within the order limits. Project Option 1 has a higher total volume than Project Option 2 (60,000m^3 more volume of materials) and presents the greatest magnitude of impact.
Impact 2 - Temporary increase in SSC and sediment deposition in intertidal habitats	**Total volume of suspended sediment and sediment deposition 111,960m^3.** Export cable trenching and subtidal HDD - same as Impact 1.	**Total volume of suspended sediment and sediment deposition 111,960m^3.** Export cable trenching and subtidal HDD - same as Impact 1.	Project Option 1 and Project Option 2 represent the same magnitude of impact. The export cable and HDD exit pits are the same across both project options.

Potential Impact	Project Option 1 (49 WTG)	Project Option 2 (35 WTG)	Rationale for the project option with the greatest magnitude of impact
Impact 3 - Temporary habitat disturbance in array area and ECC	**Temporary habitat disturbance of 6,216,745 m^2.** **Array area** 2x Jack-up deployments at 49 WTGs and 1 OSP with individual footprint of 1,885m^2 = 226,195m^2. Cable seabed preparation and installation in the array area trench area affected: 111km length, 40m width (including preparatory seabed measures) = 4,400,000m^2. Boulders required to be cleared across array area (490 boulders) = 9,621m^2 Footprint under anchors and buoys in array area = 75,960m^2 **ECC** Cable seabed preparation and installation in the ECC trench area affected: 18km length, 40m width (including preparatory seabed measures) = 1,440,000m^2. Boulders required to be cleared across ECC (10 boulders) = 196m^2 Footprint under anchors and buoys in ECC = 6,480m^2 **Subtidal HDD:** Total footprint of disturbance (exit pits, transition zone, temporary sidecast/ deposited material & JUV footprint) = 4,156m^2.	**Temporary habitat disturbance of 5,334,050m^2.** **Array area** 2x Jack-up deployments footprint for 35 WTGs and 1 OSP with individual footprint of 1,885m^2 = 165,876,720m^2. Cable seabed preparation and installation in the array trench area affected: 91km length, 40m width (including preparatory seabed measures) = 3,640,000m^2. Boulders required to be cleared across array area (350 boulders) = 6,872m^2 Footprint under anchors and buoys in array area = 59,160m^2 **ECC** Cable seabed preparation and installation in the ECC trench area affected: 18km length, 40m width (including preparatory seabed measures) = 1,440,000m^2. Boulders required to be cleared across ECC (10 boulders) = 196m^2 Footprint under anchors and buoys in ECC = 6,480m^2 **Subtidal HDD:** Total footprint of disturbance (exit pits, transition zone, temporary sidecast/ deposited material & JUV footprint) = 4,156m^2.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact**. The greatest magnitude of impact for temporary disturbance relates to seabed preparation for foundations and cables, jack up and anchoring operations, and cable installation. Project Option 1 has a higher total area of temporary habitat disturbance than Project Option 2 (882,695m^2 greater area) and presents the greatest magnitude of impact. (Note that habitat covered with infrastructure (e.g. WTG foundations) is considered long term or permanent habitat loss and therefore this has been assessed as an operational impact (Impact 6)). The footprint of seabed disturbance at the foundations in these impacts relates to jacket foundations and is only the area dredged that goes beyond the footprint of the infrastructure.
Impact 4 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination (see impact 1 above)	Total volume of suspended sediment and sediment deposition 455,139m^3. **Dry grout mix for foundation installation:** Grout will be cementitious in nature, typically based on ordinary Portland cement (OPC) or equivalent formulations;	Total volume of suspended sediment and sediment deposition 395,139m^3. **Dry grout mix for foundation installation:** Grout will be cementitious in nature, typically based on ordinary Portland cement (OPC) or equivalent formulations;	**Project Option 1 represents the greatest magnitude of impact in relation to this impact** Project Option 1 represents the greatest total seabed disturbance and therefore the greatest amount of contaminated sediment that may be

Potential Impact	Project Option 1 (49 WTG)	Project Option 2 (35 WTG)	Rationale for the project option with the greatest magnitude of impact
	Maximum quantity carried per vessel at any one time: 1,000 tonnes; and Total quantity required during construction: 100,000 tonnes.	Maximum quantity carried per vessel at any one time: 1,000 tonnes; and Total quantity required during construction: 100,000 tonnes.	released into the water column during construction activities.
Impact 5 - Introduction of marine invasive non-native species (MINNS)	3,032 round trips to port by construction vessels.	2,504 round trips to port by construction vessels.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** This scenario represents a larger magnitude of impact with regard to maximum number of vessel movements during construction activities.
Operation			
Impact 6 - Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection	**Habitat change of 526,898m^2.** **Array area:** WTG footprint with scour protection, based on 49 WTG = 369,605m^2. OSP foundations footprint with scour protection = 7,543m^2. Pre- and post-lay rock berm area within array area (5 cable crossings) = 2,750 m^2. Inter array cable protection assuming (20% cable will require additional cable protection) = 111,000m^2. **ECC:** Cable protection assuming (20% cable will require additional cable protection) = 36,000m^2.	**Habitat change of 401,297m^2.** **Array area:** Turbine footprint with scour protection, based on 35 WTG = 264,004m^2. OSP foundations footprint = 7,543m^2. Pre- and post-lay rock berm area within array area (5 cable crossings) = 2,750m^2. Inter array cable protection assuming (20% cable will require additional cable protection) = 91,000m^2. **ECC:** Cable protection assuming (20% cable will require additional cable protection) = 36,000m^2.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** The greatest magnitude of impact for long-term or permanent habitat loss relates to cable protection. Project Option 1 has a higher total area of long-term or permanent habitat loss than Project Option 1 (125,601m^2 more seabed area) and presents the greatest magnitude of impact.

Potential Impact	Project Option 1 (49 WTG)	Project Option 2 (35 WTG)	Rationale for the project option with the greatest magnitude of impact
Impact 7 - Temporary habitat disturbance in array area and ECC	**Total temporary habitat disturbance: 675,134m^2.** **Array area:** JUV operations - Major WTG component repair/replacement = 646,540m^2. JUV - Major OSP component replacement = 13,195m^2. Inter array cable repair and/or replacement of cabling = 7,000m^2. Inter array cable reburial of any section of the offshore export cable which has become exposed = 700m^2. **ECC** Export Cable - Repair and/or replacement of cabling = 7,000m^2. Export Cable - Reburial of any section of the offshore export cable which has become exposed = 700m^2.	**Total temporary habitat disturbance: 490,409m^2.** **Array area:** JUV operations - Major WTG component repair/replacement = 461,814m^2. JUV - Major OSP component replacement = 13,195m^2. Inter array cable repair and/or replacement of cabling = 7,000m^2. Inter array cable reburial of any section of the offshore export cable which has become exposed = 700m^2. **ECC** Export Cable - Repair and/or replacement of cabling = 7,000m^2. Export Cable - Reburial of any section of the offshore export cable which has become exposed = 700m^2.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** The greatest magnitude of impact for long-term or permanent habitat loss relates to cable protection. **Project Option 1 has a higher total area of long-term or permanent habitat loss than Project Option 2 (184,725m^2 more seabed area) and presents the greatest magnitude of impact.** Note that habitat disturbance would also result in increased SSC. However, the volume of sediment that could be suspended has not been calculated but will be a much smaller quantity compared with that generated by construction and decommissioning activities.
Impact 8 - Changes in physical processes	See impact presented in the Physical Processes Chapter.	See impact presented in the Physical Processes Chapter.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** This impact is defined by any anticipated changes to physical processes as defined in the Physical Processes Chapter.
Impact 9 - Impacts of colonisation of introduced hard substrate on benthic ecology and biodiversity	Total surface area of introduced hard substrate in the water column: 899,964m^2. Scour protection 49 WTGs, 1 OSP = 377,148m^2. Cable protection = 196,980m^2. Post-lay rock berm = 4,125m^2. Total surface area of WTG caissons in contact with the water column = 315,315m^2. Total surface area of OSP caissons in contact with the water column = 6,396m^2.	Total surface area of introduced hard substrate in the water column: 672,468m^2. Scour protection 35 WTGs, 1 OSP = 271,547m^2. Cable protection = 170,180m^2. Post-lay rock berm = 4,125m^2. Total surface area of WTG caissons in contact with the water column = 220,220m^2. Total surface area of OSP caissons in contact with the water column = 6,396m^2.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact**. The project option with the greatest magnitude of impact is defined by the greatest area of structures, scour protection, cable protection and cable crossings introduced to the water column, including surface area of vertical structures. The greatest magnitude of impact in relation to introduction of hard substrate for colonisation is the surface of the WTG piles within the water column.

Potential Impact	Project Option 1 (49 WTG)	Project Option 2 (35 WTG)	Rationale for the project option with the greatest magnitude of impact
			Project Option 1 has a higher total area of introduced surface than Project Option 2 (227,496m^2 more available area) and presents the greatest magnitude of impact.
Impact 10 - Introduction of MINNS (see impact 9)	Total surface area of introduced hard substrate in the water column = 899,964m^2. 1,261 vessel round trips annually.	Total surface area of introduced hard substrate in the water column = 672,468m^2. 1055 vessel round trips annually.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** This scenario has the greatest magnitude of impact with regards to maximum number of vessel movements during operational activities.
Impact 11 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination	The magnitude of the impact represents the greatest volume of sediments released during the operational phase. Temporary increases in SSC will result from periodic jack-up vessel deployment, and cable repair, replacement and reburial activities (activities listed under Impact 7).	The magnitude of the impact represents the greatest volume of sediments released during the operational phase. Temporary increases in SSC will result from periodic jack-up vessel deployment, and cable repair, replacement and reburial activities (Activities listed under Impact 7).	**Project Option 1 represents the greatest magnitude of impact in relation to this impact**. The magnitude of the impact is defined by the greatest volume of sediment that are predicted to be released into the water column during the operational phase. There is more infrastructure to maintain in Project Option 1 therefore the increase of SSC from operational activities will be greater from Project Option 1. Note the risk of accidental contamination as a result of spillages or collisions will be managed through the implementation of an Offshore EMP, and therefore no design scenarios are presented for accidental contamination.
Decommissioning			
Impact 12 - Temporary increase in SSC and sediment deposition	The impacts are expected to be equivalent to Impact 1 above apart from the structures that may remain (e.g. cables and cable protection measures). See the Physical Processes Chapter.	The impacts are expected to be equivalent to Impact 1 above apart from the structures that may remain (e.g. cables and cable protection measures). See the Physical Processes Chapter.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** The project option with the greatest magnitude of impact is assumed to be as per the construction phase, with all infrastructure removed in reverse-construction order.

Potential Impact	Project Option 1 (49 WTG)	Project Option 2 (35 WTG)	Rationale for the project option with the greatest magnitude of impact
			The removal of cables is considered, however the necessity to remove cables will be reviewed at the time of decommissioning.
Impact 13 - Temporary habitat disturbance in the array area and ECC	Removal of all foundations, cables and rock protection leading to temporary habitat disturbance is equivalent to Impact 3 and 6.	Removal of all foundations, cables and rock protection leading to a temporary habitat disturbance to Impact 3 and 6.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** The project option with the greatest magnitude of impact is assumed to be similar to the construction phase, with all infrastructure removed in reverse-construction order. The removal of cables and rock protection is considered the assessment, however the necessity to remove cables and rock protection will be reviewed at the time of decommissioning.
Impact 14 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination	The assessment of reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination during the decommissioning phase is presented in Impact 1 above.	The assessment of reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination during the decommissioning phase is presented in Impact 1 above.	**Project Option 1 represents the greatest magnitude of impact in relation to this impact.** This scenario represents the greatest total seabed disturbance and therefore the greatest amount of contaminated sediment that may be released into the water column during decommissioning activities.

There are no other changes to this section. Refer to Section 12.4.6 of Chapter 12 of the 2024 EIAR.

12.4.7 Impacts Scoped Out

In response to RFI Section 9 (g), Section 12.4.7 has been added to provide further information with regards to EMF on benthic habitats.

EMFs generated by subsea cables associated with NISA are not anticipated to result in significant impacts on benthic species or habitats. With regards to magnitude of impact, a study of submarine transmission cables (standard power cables used for connecting devices within renewable energy installations) determined that EMF levels reduced to background levels generally within one metre of the cable (Love *et al.*, 2016). Considering this, while EMFs may be detectable in close proximity to the cables, burial and protective measures will increase the distance between the source and benthic receptors, thereby reducing exposure levels.

With regards to receptor sensitivity, many studies assessing the impacts of EMF on benthic invertebrates contradict each other or provide inconclusive results (e.g., Switzer and Meggitt, 2010; Jakubowska *et al.*, 2019) but generally indicate that behavioural or physiological responses in benthic invertebrates are minimal, highly localised, and typically occur only at EMF strengths far exceeding those expected from the proposed development (e.g., Love *et al.*, 2016; Scott *et al.*, 2021). Furthermore, field studies have shown no long-term changes in benthic communities in the vicinity of energised cables (Love *et al.*, 2016).

Given the low sensitivity of benthic receptors and the negligible magnitude of impact, EMFs are not expected to result in ecologically significant effects. Accordingly, a detailed assessment of EMF-related impacts on benthic ecology is not considered necessary and is thus scoped out for further assessment.

12.5 Potential Effects

There are no changes to the introductory text of this section. Refer to Section 12.5 of Chapter 12 of the 2024 EIAR.

12.5.1 Do-Nothing Scenario

There are no changes to this section. Refer to Section 12.5.1 of Chapter 12 of the 2024 EIAR.

12.5.2 Construction Phase

There are no changes to the introductory text of this section. Refer to Section 12.5.2 of Chapter 12 of the 2024 EIAR.

12.5.2.1 Impact 1 - Temporary increase in SSC and sediment deposition in subtidal habitats

Sensitivity of the receptor

In response to RFI Section 1 (b), the key change for this section is the addition to Table A12.9 of the biotope '*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud' identified during the 2025 survey. Table A12.9 replaces Table 12.15 of Chapter 12 of the 2024 EIAR.

Table A12.9 Sensitivity assessment for the benthic subtidal habitats for temporary increase in SSC and sediment deposition (replaces Table 12.15 of the 2024 EIAR)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity to longer term changes in suspended sediment and turbidity	Sensitivity to light smothering (<5cm)	Sensitivity to heavy smothering (5-30cm)
Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	MC6217	Not sensitive	Not sensitive	Not sensitive
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	Not sensitive	Not sensitive	Medium

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity to longer term changes in suspended sediment and turbidity	Sensitivity to light smothering (<5cm)	Sensitivity to heavy smothering (5-30cm)
Owenia fusiformis and *Amphiura filiformis* in offshore circalittoral sand or muddy sand	MD5212	Not sensitive	Low	Medium
Seapens and burrowing megafauna in circalittoral fine mud	MC6216	Not sensitive	Not sensitive	Not sensitive
Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	MC6217	Not sensitive	Not sensitive	Not sensitive
Abra alba and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	MC5214	Low	Low	Medium
Fabulina fabula and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand	MB5236	Low	Low	Medium
Kurtiella bidentata and *Thyasira* spp. in circalittoral muddy mixed sediment	MC4213	Not sensitive	Not sensitive	Low
Amphiura filiformis and *Ennucula tenuis* in circalittoral and offshore sandy mud	MD5212 closest	Not sensitive	Not sensitive	Medium
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	Not sensitive	Not sensitive	Medium
Levinsenia gracilis and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud	MD6217	Not sensitive	Medium	Medium

Magnitude of impact

The change from monopiles and jackets with pin pile foundations to jackets with SBJ foundations for WTGs, and jackets with suction buckets or jackets with pin piles for the OSP, and removal of dredging, has necessitated changes to this section. The revised modelling is detailed in Appendix A10.2 Marine Physical Processes Numerical Modelling. Accordingly, Magnitude of Impact text will be deleted and replaced with text herein and Table A12.10 replaces Table 12.16 of Chapter 12 of the 2024 EIAR.

Magnitude of impact

When finer sediments are mobilised, they are typically carried in suspension, contributing to a period of higher SSC and increased turbidity of water. Temporary localised increases in SSC and associated sediment deposition and smothering (which can result in the blocking of feeding and respiratory structures of benthic species) are expected from foundation works, cable installation and seabed preparation works. This assessment should be read in conjunction with Chapter 10 which provides the detailed offshore physical environment assessment (including proposed development specific spreadsheet modelling of sediment plumes).

The project option with the greatest magnitude of impact for activities resulting in disturbance of the seabed is provided in Table A12.8 and has been considered using numerical modelling both within the array area and along the ECC, for both spring and neap tides. The release events that have been simulated within the numerical model, as described in Chapter 10, have been specifically designed to capture the full range of realistic outcomes:

- Sediment plume concentrations
- Sediment plume extent
- Vertical deposition depth (bed level change); and
- Horizontal extent of deposition (bed level change).

A full assessment of the above, including the methodological approach used to assess the characteristics of sediment plumes and associated changes in bed level arising from settling of material is set out in Chapter 10. To provide a robust assessment, a range of realistic combinations have been considered, based on conservatively representative location (environmental) and proposed development specific information, including a range of water depths and sediment types. Table A12.10 details the peak increases in SSC and deposition that could occur as a result of construction activities.

Table A12.10 Temporary increases in SSC and sediment deposition as a result of construction activities (replaces Table 12.16 of Chapter 12 of the 2024 EIAR)

Construction Impact	Location	Details of increase in SSC and deposition
Drilling for OSP foundation installation	Array area	Increased SSC above background greater than 10mg/l remain within the tidal excursion buffer. Highest concentrations above 500mg/l remain close point of discharge. Outside the tidal excursion buffer suspended sediment concentrations are typically <10mg/l and equivalent to background levels, or less. From commencement of the release, the initial ebb and flood tidal excursions remain within the tidal excursion buffer with subsequent excursions with a steadily reduced concentration eventually spreading further afield. Notably, the spring release shows a distinctive net excursion to the north (total excursion around 40km from the point of release) with the flood dominant flows which has the potential to cross into UK territorial waters but only with very low concentrations (<1mg/l, trace). In contrast, the neap release has a reduced net northly excursion and remains fully within Irish territorial waters. Maximum initial deposition depths of settled cuttings in the range of 20 to 50mm remain close to the drilling location which reduces to between 5 to 10mm up to the adjacent WTG location. Only trace levels (<1mm) exceed the northern boundary of the tidal excursion buffer.
Cable installation	Array area	Highest SSC in the range 100 to 500mg/l are limited along the trenching line and only occur during the period of jetting, rapidly reducing thereafter. Only low concentrations below 2mg/l (equivalent to normal variations in turbidity) are predicted to exceed the tidal excursion buffer, which for all release scenarios tend to favour a northerly distribution due to the flood dominant tide. For the northerly high flow scenario (flood spring tide release), tidal advection has the potential to extend the plume to just reach UK territorial waters for a short period, but with a very low concentration equivalent to around 1mg/l (trace level). This pattern is only likely to be repeated for trenching activities occurring in the north-eastern part of the array area under a similar set of spring tide conditions. Highest levels of initial settlement between 20 to 100mm occur along the trenching line (i.e., material falling back into the trench in the near-field). Levels above 10mm spread up to 500maround the trenching line in the direction of the general north-south tidal axis. Levels above 5mm spread further by around 2km in the direction of the tidal axis. Only trace levels (<1mm) exceed the northern boundary of the tidal excursion buffer with a small amount of settlement potentially reaching UK territorial Waters for a flood release on a spring tide.. Where there is an adjacent cable line upstream or downstream on the tidal axis then there is potential for subsequent overlapping deposition (i.e. the extent of settlement from one cable line has the chance of reaching the adjacent trench line in the direction of the tidal axis). In such cases, the net level of overall deposition across the array area is expected to vary from around 10 to 50mm between trenching lines and 50 to 100mm closer to each trenching line.
	ECC	Highest SSC in the range 200 to 1,800mg/l are limited along the trenching line and only occur for the period of trenching, advecting away thereafter. Highest levels of deposition between 10 to 50mm occur along the trenching line (i.e., material falling back into the trench). All levels above 1mm remain within the ECC boundary with only trace levels (<1mm) spreading further afield

Construction Impact	Location	Details of increase in SSC and deposition
Excavation of HDD exit pits	Subtidal HDD exit pit	The plume covers a greatest distance of around 2.2km to the north-west (flood) and to the south-east (ebb) for concentrations >1mg/l on spring releases, and around 1.3km on neap releases. The highest elevated concentrations remain close to the exit pits within the ECC boundary with levels up to 1,120mg/l. The greatest spread of deposition is around 2.5km to the north-north-west and south-south-east of the exit pit trench. The greatest depth of deposition remains close to the pits with highest levels of between 68 to 193mm predicted within the ECC boundary, spreading parallel to the coast over about 300 m in a north-west to south-east direction.
Bentonite release	Subtidal HDD exit pit	The plume covers a greatest distance of around 1.1km to the north-west (flood) and 0.8km to the south-east (ebb) along the coast for concentrations >1mg/l on spring releases, and shorter distances on neap releases. The highest elevated concentrations remain close to the HDD exit pits with levels 29mg/l. The greatest spread of bentonite deposition is around 1.7km to the north-north-west and 1.4km to the south-south-east of the exit pit trench with greatest depths of deposition remaining closest to the pits with levels between 0.3 to 0.7mm (trace levels).

Seabed disturbance during the construction phase is expected to produce discrete sediment plumes, with the spread of these plumes determined by the prevailing tidal conditions. Since the sediments involved are likely to be mainly fine, these plumes will spread over several tides prior to completely settling outside of the flood-dominant phase favouring a net drift of the plume to the north on most tides. The greatest distance and the overall spatial extent that any resultant plume might be reasonably experienced can be estimated as the spring tidal excursion distance. Modelling indicates that the highest SSC concentrations (>500mg/l) the highest suspended sediment concentrations in the range 100 to 500mg/l are limited along the trenching line (i.e., toward the near-field source) and only occur during the period of jetting, rapidly reducing thereafter. Only low concentrations below 2mg/l (equivalent to normal variations in turbidity) are predicted to exceed the tidal excursion buffer. Any location beyond the tidal excursion distance is unlikely to experience any measurable change in SSC from a sediment plume. Given the nature of the sediment disturbance (temporary), any impacts are also anticipated to be relatively short-lived, with any deposited material re-worked by biological activity (Newell *et al.*, 1998) and, to a lesser extent, hydrodynamic factors (van der Veer *et al.*, 1985).

The modelling further indicates that the areas of settled sediment mimic the impact pathway of elevated suspended sediments with reduced levels of deposition over distance from the release location. Highest levels of initial settlement between 20 to 100mm occur along the trenching line (i.e., material falling back into the trench in the near-field). Levels above 10mm spread up to 500m around the trenching line in the direction of the general north-south tidal axis. Levels above 5mm spread further by around 2km in the direction of the tidal axis. However, these levels of short-term deposition are considered to be light levels of smothering for any benthic receptors as most species common in soft-bottom communities are able to avoid burial with 5–10cm of sediment (Nichols *et al.*, 1978).

For the ebb spring tide release from trenching, tidal advection has the potential to carry the plume into the Rockabill to Dalkey Island SAC but only with very low concentrations (1 to 2mg/l) and for a short period. The sensitive receptor of interest within the SAC are “Reefs” which surround rocky features such as Rockabill. The temporary period of raised suspended sediment (which increases turbidity and lowers light penetration) reaching the SAC are considered to be lower than the monthly variation of average suspended sediments and therefore insignificant.

HDD operations releases a viscous drilling fluid which consists of a mixture of water and bentonite, a non-toxic, naturally occurring clay mineral. It is estimated that when HDD emerges in subtidal exit pits in the ECC bentonite will be released under pressure for a short period (10 tonnes of drilling muds over a period of around 200 seconds). This will be followed by a longer reaming period (20 tonnes over around 24 hours) when there will be a further volume of bentonite emerging under lower pressure.

The release of drilling fluid and drill cuttings from HDD operations will result in a localised and temporary plume of elevated SSC. The drilling fluid has an overall density and viscosity similar to seawater and so is expected to behave in a similar manner. The majority of the plume will be advected in the direction of the ambient tidal currents, which are broadly aligned to the coast. Modelling indicates that on a spring tide release a greatest excursion distance for the bentonite (at concentrations >1mg/l) will be around 1.1km to the north-west (on the flood) and 0.8km to the south-east (on the ebb); on a neap tide the plume will extend a shorter distance. The highest elevated concentrations of bentonite will remain close to the exit pits with levels up to 29mg/l estimated with greatest depths of deposition of between 0.3 to 0.7mm.

In summary, sediment plumes caused by seabed preparation and construction activities are expected to be restricted to within a single tidal excursion from the point of release, which is captured by the benthic subtidal and intertidal ecology study area (Figure 12.1). Sediment plumes are expected to quickly dissipate after cessation of the construction activities, due to settling and wider dispersion with the concentrations reducing quickly over time to background levels (i.e., within a couple of tidal cycles). Sediment deposition will consist primarily of coarser sediments deposited close to the source (a few hundred meters), with a small proportion of silt deposition (reducing exponentially from source). Further information on sediment plume distances and modelling are provided in Chapter 10.

Taking the above into consideration, the impact of increased SSC and smothering from sediment deposition from construction activities is expected to be temporary, infrequent, of localised extent and reversible. The overall magnitude of impact of increased SSC and deposition across the receiving environment is considered to be low adverse.

Consequently, the magnitude of impact from Project Option 1 and Project Option 2 resulting from temporary increase in SSC and sediment deposition in array area and ECC is assessed as low adverse.

Significance of effect

For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.2.2 Impact 2 – Temporary increase in SSC and sediment deposition in intertidal habitats

There are no changes to this section. Refer to Section 12.5.2.2 of Chapter 12 of the 2024 EIAR. For clarity, the Developer confirms that the significance of effect remains unchanged and is assessed as imperceptible and not significant in EIA terms.

12.5.2.3 Impact 3 - Temporary habitat disturbance in array area and ECC

Sensitivity of the receptor

In response to RFI Section 1 (b), the key change to this section is the addition to Table A12.11, to include the biotope '*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud,' which were identified during the 2025 survey. Table A12.11 replaces Table 12.18 of Chapter 12 of the 2024 EIAR.

Table A12.11 Sensitivity assessment for the benthic subtidal habitats for disturbance (replaces Table 12.18 of the 2024 EIAR)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity assessment
Array area		
Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	MC6217	Medium (based on medium resistance and medium resilience)
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	Medium (based on medium resistance and medium resilience)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity assessment
Levinsenia gracilis and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud	MD6217	Medium (based on low resistance and medium resilience)
ECC		
Abra alba and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	MC5214	Low (based on medium resistance and high resilience)
Fabulina fabula and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand	MB5236	Low (based on medium resistance and high resilience)
Kurtiella bidentata and *Thyasira* spp. in circalittoral muddy mixed sediment	MC4213	Low (based on medium resistance and high resilience)
Amphiura filiformis and *Ennucula tenuis* in circalittoral and offshore sandy mud	MD5212	Medium (based on low resistance and medium resilience)
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	Medium (based on low resistance and medium resilience)

Similarly, and in Response to RFI Section 1 (b), the first paragraph of the Sensitivity section shall have the following text added to include the additional biotopes;

Similarly, the biotope '*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud' (MD6217) is described as having a medium sensitivity to disturbance as while burrowing life habits may provide some protection from disturbance at the surface, a proportion of the population is likely to be damaged or removed with recovery likely to take years (Kaiser *et al.*, 2006).

Magnitude of impact

In response to design updates, the area measurements of disturbance have been updated to incorporate the use of SBJs, and jacket foundations with either pin piles or suction buckets and to reflect the change in habitat disturbance. This section shall be deleted and replaced with the following text:

The total greatest area of disturbance of subtidal habitat due to pre-construction and construction activities is described in Table A12.8, which, for Project Option 1, equates to approximately 6.5km^2 of the seabed area within the array area and ECC and 5.6km^2 for Project Option 2. It should be noted that the assessment presents a precautionary approach to temporary habitat disturbance because it counts both the total footprint of seabed preparatory works as well as cable burial across both the array area and ECC. This approach effectively counts the footprint of seabed habitat to be impacted by construction in the same area twice. This precautionary approach has been taken because there is some potential for recovery of habitats between the different activities due to project timescales.

Of the total area of temporary habitat loss described in Table A12.8, a greatest area of approximately 5.0km^2 (Project Option 1) is predicted to be temporarily lost/ disturbed within the array area as a result of seabed preparations for foundations, jack-up barge operations and the installation and burial of inter-array and interconnector cables (including associated anchor placements). This equates to approximately 5.5% of the total seabed area within the array area.

Of the total area of temporary habitat loss described in Table A12.8, a greatest area of approximately 1.4km^2 will be temporarily disturbed for both options within the subtidal areas of the ECC as a result of seabed preparation, export cable installation, burial and jointing. This equates to approximately 4% of the total seabed area within the ECC.

The benthic communities are typical of the sand and mud sediments characterising the array area and ECC. The temporary habitat disturbance during construction activities would therefore have an impact on a very limited footprint, particularly when compared to the overall extent of such habitats and this loss is not expected to undermine regional ecosystem functions or diminish biodiversity.

Furthermore, any impacts will be intermittent and with high reversibility. Consequently, the magnitude is therefore, considered to be negligible.

No Annex I reef features were recorded during the site-specific surveys. Consequently, no pathway for direct impact to this receptor is evident and thus no disturbance is anticipated. The magnitude of impact to potential Annex I reef is therefore regarded as negligible. No impacts on the Rockabill and Dalkey Island SAC are expected from direct habitat disturbance as it is outside of the offshore development area.

Consequently, the overall magnitude of impact resulting from temporary habitat disturbance in subtidal habitats would be negligible.

There are no further changes to this section. Refer to Section 12.5.2.3 of Chapter 12 in the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.2.4 Impact 4 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination

The change required in this section is in response to the refinement of the foundation types for Project Option 1 and Project Option 2 (refer to Appendix A5.1: Design Refinements). The revised installation activities associated with the change in foundation types have been considered in the assessment of water and sediment quality through release of contaminated sediments and/or accidental contamination. Therefore, in addition to the text under Section 12.5.2.4 of Chapter 12 of the 2024 EIAR, the following text should be added:

During SBJ foundation installation, following completion of suction installation, any residual void beneath the bucket lid interface will be filled with low-strength grout (or equivalent material) to ensure full contact between the foundation and the seabed. The grout will be cementitious in nature, typically based on ordinary Portland cement (OPC) or equivalent formulations. Seawater or freshwater may be used as mix water, with final grout composition to be confirmed during detailed design.

It is anticipated that grout constituents will comply with relevant offshore environmental standards, including the OSPAR list of substances that are considered Pose Little or No Risk to the Environment (PLONOR), where applicable. Grout materials will be selected, handled and managed in accordance with industry best practice and established environmental mitigation measures to minimise the risk of accidental release.

The maximum quantity of dry grout mix stored on board a vessel at a given time is expected to be limited to 1000 tonnes (dry weight). In addition, all grout handling operations will be undertaken within contained systems, with appropriate control and containment measures in place to prevent release to the marine environment. No discharge of unmixed grout is proposed. In the unlikely event of an accidental release of dry grout to the marine environment, localised and temporary increases in turbidity and pH may occur upon contact with seawater, however, the material is considered to present low environmental hazard, and once hydrated, it forms a stable, low-solubility solid with limited potential for dispersion or long-term impact.

This design refinement does not introduce any new impact pathways and does not materially alter the conclusions of the accidental spill and release assessment presented in the 2024 EIAR.

Magnitude of impact

The key change to this section is a discussion of magnitude of impact of release of contaminated sediment through sediment disturbance and through accidental pollution as per RFI Section 9 (e). The following text, after the third paragraph, relating to accidental contamination release shall be added:

The impact is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. Overall, the magnitude for the release of sediment bound contaminants is considered to be negligible.

The magnitude of an accidental spill incident will be limited by the size of the chemical or oil inventory on construction vessels. In addition, released hydrocarbons would be subject to rapid dilution, weathering and dispersion and would be unlikely to persist in the marine environment. The likelihood of an incident will be reduced by implementation of an Offshore EMP (see Table A12.7) which, allied to good working practices, will significantly reduce the likelihood of an accidental pollution incident occurring and the magnitude of its impact. Given the mitigation measures, the likelihood of accidental release is considered to be extremely low.

Consequently, the impact of any release is predicted to be of local spatial extent, short term duration, intermittent and high reversibility. It is predicted that the impact will affect the receptor directly. Overall, the magnitude for accidental pollution is considered to be negligible.

Consequently, the overall magnitude of any impact associated with the reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination is negligible.

There are no further changes to this section. Refer to Section 12.5.2.4 of Chapter 12 in the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.2.5 Impact 5 - Introduction of MINNS

Sensitivity of the receptor

In response to RFI Section 1 (b), the key change to this section is the addition to Table A12.12 of the biotope '*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud' identified during the 2025 survey, and the reduction in number of vessel return trips. Table A12.12 replaces Table 12.19 of Chapter 12 of the 2024 EIAR.

Table A12.12 MarESA assessment for the benthic subtidal habitats for introduction of MINNS (replaces Table 12.19 of the 2024 EIAR)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity assessment
Array area		
Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	MC6217	No evidence on Marlin MarESA assessment, so a high sensitivity has been adopted.
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	No evidence on Marlin MarESA assessment, so a high sensitivity has been adopted.
Levinsenia gracilis and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud	MD6217	No evidence on Marlin MarESA assessment, so a high sensitivity has been adopted.
Survey area		
Owenia fusiformis and *Amphiura filiformis* in offshore circalittoral sand or muddy sand	MD5212	No evidence on Marlin MarESA assessment, so a high sensitivity has been adopted
Seapens and burrowing megafauna in circalittoral fine mud	MC6216	No evidence on Marlin MarESA assessment, so a high sensitivity has been adopted
ECC		
Abra alba and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	MC5214	High (based on no resistance and very low resilience)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity assessment
Fabulina fabula and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand	MB5236	High (based on no resistance and very low resilience)
Kurtiella bidentata and *Thyasira* spp. in circalittoral muddy mixed sediment	MC4213	High (based on no resistance and very low resilience)
Amphiura filiformis and *Ennucula tenuis* in circalittoral and offshore sandy mud	MD5212	Low (based on low resistance and low resilience)
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	No evidence on Marlin MarESA assessment, so a high sensitivity has been adopted.

Magnitude of Impact

The fifth paragraph in this section shall be deleted in the 2024 EIAR and replaced with the following text:

In addition to this, there will be 2,386 round trips (Project Option 1) or 1,898 trips (Project Option 2) to port during the construction phase, which will contribute to the risk of introduction or spread of MINNS through ballast water discharge.

There are no further changes to this section. Refer to Section 12.5.2.3 of Chapter 12 in the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.3 Operational Phase

There are no changes to the introductory text of this section. Refer to Section 12.5.3 of Chapter 12 in the 2024 EIAR.

12.5.3.1 Impact 6 – Long-term or permanent subtidal habitat loss/ change from the presence of foundations, scour protection and cable protection.

Sensitivity of the receptor

The key change for this section is the addition to Table A12.13 of the biotope '*Levinsenia gracilis* and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud' identified during the 2025 survey, replacing Table 12.20 of Chapter 12 of the 2024 EIAR.

Table A12.13 MarESA assessment for the benthic subtidal habitats for long term habitat loss (replaces Table 12.20 of the 2024 EIAR)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity assessment
Array area		
Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	MC6217	High (based on no resistance and very low resilience)
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	High (based on no resistance and very low resilience)
Survey area		
Owenia fusiformis and *Amphiura filiformis* in offshore circalittoral sand or muddy sand	MD5212	High (based on no resistance and very low resilience)

Biotope name	Biotope code (EUNIS, 2022)	Sensitivity assessment
Seapens and burrowing megafauna in circalittoral fine mud	MC6216	High (based on no resistance and very low resilience)
Burrowing megafauna *Maxmuelleria lankesteri* in circalittoral mud	MC6217	High (based on no resistance and very low resilience)
Levinsenia gracilis and *Heteromastus filiformis* in Atlantic offshore circalittoral mud and sandy mud	MD6217	High (based on no resistance and very low resilience)
ECC		
Abra alba and *Nucula nitidosa* in circalittoral muddy sand or slightly mixed sediment	MC5214	High (based on no resistance and very low resilience)
Fabulina fabula and *Magelona mirabilis* with venerid bivalves and amphipods in Atlantic infralittoral compacted fine muddy sand	MB5236	High (based on no resistance and very low resilience)
Kurtiella bidentata and *Thyasira* spp. In circalittoral muddy mixed sediment	MC4213	High (based on no resistance and very low resilience)
Amphiura filiformis and *Ennucula tenuis* in circalittoral and offshore sandy mud	MD5212 closest	High (based on no resistance and very low resilience)
Amphiura filiformis, Kurtiella bidentata and *Abra nitida* in circalittoral sandy mud	MC6211	High (based on no resistance and very low resilience)

Magnitude of impact

The area measurements of disturbance have been updated to incorporate the use of SBJs, and jacket foundations with either pin piles or suction buckets. In addition, and in response to RFI Sections 9 (b) and (d), the magnitude of impacts has also been reassessed and set as low. This section of Section 12.5.3.1 of Chapter 12 of the 2024 EIAR shall be deleted and replaced with the following text:

The presence of the WTG and OSP foundations and the associated scour protection, along with the cable protection measures used at cable crossings and areas where cable burial is not possible, will lead to a change from a sedimentary habitat to one characterised by hard substrate.

This will be either a long-term (for the 35-year design life duration of the proposed development where at the point of decommissioning foundations are clipped at between 1-2 m below seabed level), or permanent for structures that are left in-situ (such as scour protection and cable protection) at the point of decommissioning. This is therefore considered an impact of the operational phase of the development and potentially beyond. It is assessed here as habitat loss and a potential adverse effect (due to the potential shift in the baseline condition), although it is noted that this also comprises potential beneficial effects (e.g. providing new habitats for different faunal assemblages to colonise, resulting in potential increases in biodiversity and biomass).

Table A12.8 identifies the project option that has the greatest magnitude of impact for foundation, scour and cable protection footprint. For Project Option 1 the total habitat loss from these components equates to approximately 0.58km^2 of the array area and ECC representing approximately 0.46% of the combined areas, while for Project Option 2 the figures are 0.35km^2 and 0.35%.

While the impact will be locally significant and comprise a permanent change in seabed habitat within the footprint of the structures and scour and cable protection, the footprint of the area affected is highly localised. A change of subtidal sediment biotopes to rock or artificial hard substratum would alter the loss of the sedimentary community and a change in the character of the biotope leading to reclassification.

However, as the habitats and characterising biotopes are common and widespread throughout the wider region (Table A12.5) the magnitude of the loss of these habitats would be low. Consequently, the overall magnitude is therefore assessed as low.

Significance of the effect

Following the revision of the magnitude to low, the significance of effect has consequently been updated to moderate. For clarity, the Developer confirms the effect is still considered not significant in EIA terms. This section of the 2024 EIAR shall be deleted and replaced with the following text:

Overall, it is predicted that in relation to Project Option 1 and Project Option 2 the sensitivity of receptors is high, and the magnitude of the impact is low. The high sensitivity and low magnitude of the impact on benthic receptors would result in a moderate effect, which is not significant in EIA terms.

There are no further changes to this section. Refer to Section 12.5.3.1 of Chapter 12 of the 2024 EIAR.

12.5.3.2 Impact 7 – Temporary habitat disturbance in array area and ECC

There are no changes to this section. Refer to Section 12.5.3.2 of Chapter 12 of the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.3.3 Impact 8 – Changes in physical processes

There are no changes to this section. Refer to Section 12.5.3.3 of Chapter 12 of the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.3.4 Impact 9 – Impacts of colonisation of introduced hard substrate on benthic ecology and biodiversity

Magnitude of impact

The key change for this section is the amendment of area measurements following design refinements. The first paragraph of Magnitude of Impact of Section 12.5.3.4 of Chapter 12 of the 2024 EIAR shall be replaced with the following:

The introduction of hard substrate will change the type of available habitats within the array area and subtidal components of the ECC. However, the amount of introduced substrate is relatively small at approximately 0.68km^2 for Project Option 1 and 0.51km^2 for Project Option 2 (Table A12.8).

There are no further changes to this section. Refer to Section 12.5.3.4 of Chapter 12 in the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.3.5 Impact 10 – Introduction of MINNS

Magnitude of impact

The key change for this section is the amendment of area measurements and number of vessels return journeys following design refinements. The second paragraph of Magnitude of Impact section shall be replaced with the following:

As indicated in Table A12.8 approximately 0.68km^2 for Project Option 1 and 0.51km^2 for Project Option 2 of new hard substrate habitat will be introduced into the array area and subtidal component of the ECC, which has the potential to provide new habitat for colonisation by MINNS. In addition to this, there will be 1,261 round trips to port by operation and maintenance vessels, which will contribute to the risk of introduction or spread of MINNS through ballast water discharge.

There are no further changes to this section. Refer to Section 12.5.3.5 of Chapter 12 in the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.3.6 Impact 11 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination

Magnitude of impact

The key change for this section is the reduction in the number of vessel return trips. The second paragraph in the Magnitude of Impact section shall be replaced in the 2024 EIAR and replaced with the following text:

There is a risk that indirect disturbance arising from the accidental release of pollutants such as synthetic compounds, heavy metal and hydrocarbon contamination resulting from 49 WTGs. Accidental pollution may also result from 1,018 operational vessel return trips over the design lifetime, which could lead to an adverse effect on benthic subtidal and intertidal ecology receptors.

There are no further changes to this section. Refer to Section 12.5.3.6 of Chapter 12 in the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.4 Decommissioning

There are no changes to the introductory text of this section. Refer to Section 12.5.4 of Chapter 12 of the 2024 EIAR.

12.5.4.1 Impact 12 - Temporary increase in SSC and sediment deposition

There are no changes to this section. Refer to Section 12.5.4.1 of Chapter 12 of the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is assessed as slight and not significant in EIA terms.

12.5.4.2 Impact 13 - Temporary habitat disturbance in the array area and ECC

There are no changes to this section. Refer to Section 12.5.4.2 of Chapter 12 of the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.5.4.3 Impact 14 - Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination

There are no changes to this section. Refer to Section 12.5.4.3 of Chapter 12 of the 2024 EIAR. For clarity, the Developer can confirm the significance of effect remains unchanged and is considered to be not significant, which is not significant in EIA terms.

12.6 Mitigation and Monitoring Measures

There are no changes to this section. Refer to Section 12.6 of Chapter 12 of the 2024 EIAR.

12.7 Residual Effects

In response to RFI Section 9 (d), the magnitude of impact for Impact 6 has changed from low to negligible. Therefore, Table A12.14 replaces Table 12.21 of the 2024 EIAR. There are no further changes to this section. Refer to Section 12.5.4.1 of Chapter 12 in the 2024 EIAR.

Table A12.14 Residual effects relating to benthic subtidal and intertidal ecology (replaces Table 12.21 of the 2024 EIAR)

Potential Impact	Likely Significant Effect Project Option 1	Likely Significant Effect Project Option 2	Residual Effect Project Option 1	Residual Effect Project Option 2
Construction				
1. Temporary increase in SSC and sediment deposition in subtidal habitats	Subtidal benthic receptors: slight	Subtidal benthic receptors: slight	Subtidal benthic receptors: slight	Subtidal benthic receptors: slight
2. Temporary increase in SSC and sediment deposition in intertidal habitats	Intertidal benthic receptors: imperceptible	Intertidal benthic receptors: imperceptible	Intertidal benthic receptors: imperceptible	Intertidal benthic receptors: imperceptible
3. Temporary habitat disturbance in array area and ECC	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant
4. Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant
5. Introduction of MINNS	Benthic subtidal receptors: not significant	Benthic subtidal receptors: not significant	Benthic subtidal receptors: not significant	Benthic subtidal receptors: not significant
Operation				
6. Long-term or permanent subtidal habitat loss/change from the presence of foundations, scour protection and cable protection	Benthic receptors: moderate	Benthic receptors: moderate	Benthic receptors: moderate	Benthic receptors: moderate
7. Temporary habitat disturbance in array area and ECC	Benthic intertidal biotopes and receptors: not significant	Benthic intertidal biotopes and receptors: not significant	Benthic intertidal biotopes and receptors: not significant	Benthic intertidal biotopes and receptors: not significant
8. Changes in physical processes	Benthic intertidal biotopes and receptors: not significant	Benthic intertidal biotopes and receptors: not significant	Benthic intertidal biotopes and receptors: not significant	Benthic intertidal biotopes and receptors: not significant
9. Impacts of colonisation of introduced hard substrate on benthic ecology and biodiversity	Benthic receptors: moderate	Benthic receptors: moderate	Benthic receptors: moderate	Benthic receptors: moderate
10. Introduction of MINNS	Benthic subtidal receptors: not significant	Benthic subtidal receptors: not significant	Benthic subtidal receptors: not significant	Benthic subtidal receptors: not significant
11. Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant
Decommissioning				
12. Temporary increase in SSC and sediment deposition	Subtidal benthic receptors: slight	Subtidal benthic receptors: slight	Subtidal benthic receptors: slight	Subtidal benthic receptors: slight

Potential Impact	Likely Significant Effect Project Option 1	Likely Significant Effect Project Option 2	Residual Effect Project Option 1	Residual Effect Project Option 2
13. Temporary habitat disturbance in the array area and ECC	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant
14. Reduction in water and sediment quality through release of contaminated sediments and/or accidental contamination	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant	Benthic receptors: not significant

12.8 Transboundary Effects

There are no changes to this section. Refer to Section 12.8 of Chapter 12 in the 2024 EIAR.

12.9 Cumulative Effects

The key changes to this section are the updating of text to reflect the minor change in cumulative assessment methodology to follow the Nationally Significant Infrastructure Projects (NSIP) (2024) guidance, as per RFI Section 5.

The second paragraph shall be deleted;

The Cumulative and Inter-Related Effects Chapter contains the outcome of Stage 1 Establishing the list of 'Other Existing and/or Approved Projects'; and Stage 2 'Screening of 'Other Existing and/or Approved Projects'. This section presents Stage 3, an assessment of whether the proposed development in combination with other projects, grouped in tiers, would be likely to have significant cumulative effects.

And replaced with:

Chapter 38: Cumulative and Inter-Related Effects contains the outcome of Stage 1 Establishing the list of 'Other Existing and/or Approved Projects'; Stage 2 'Screening of 'Other Existing and/or Approved Projects'; and provides the CEA conclusions in the NSIP Appendix 2: Matrix 1 – Assessment matrix. This section presents the full Stage 3 and Stage 4 assessment, which steps through whether the proposed development in combination with other projects, grouped in tiers, would be likely to have significant cumulative effects.

The fifth paragraph should be deleted;

Given the location and nature of the proposed development, a tiered approach to establishing the list of other existing and/or approved projects has been undertaken in Stage 1 of the cumulative effects assessment. The tiering of projects is based on project relevance to the proposed development and it is not a hierarchical approach nor based on weighting. Further information on the tiers is provided in Section 12.9.2 and in the Cumulative and Inter-Related Effects Chapter.

And replaced with:

Given the location and nature of the proposed development, a tiered approach to establishing the list of other existing and/or approved projects has been undertaken in Stage 1 of the cumulative effects assessment. The tiering of projects is based on the NSIP 2024 guidance. Further information on the tiers is provided in Section 12.9.2 and in the Chapter 38 Cumulative and Inter-Related Effects.

There are no other changes required to this section. Refer to Section 12.9 in the 2024 EIAR.

12.9.1 Benthic and intertidal cumulative screening exercise

There are no changes to this section. Refer to Section 12.9.1 of Chapter 12 in the 2024 EIAR.

12.9.2 Projects considered within the benthic and intertidal cumulative effects assessment

The key changes to this section are the updating of text to reflect the minor change in cumulative assessment methodology to follow the NSIP 2024 guidance, as per RFI Section 5 and to reflect the updated long-list. New and updated information is indicated by the grey shading in Table A12.15 which replaces Table 12.22 in Chapter 12 in the 2024 EIAR.

The entire section shall be deleted and replaced with:

The planned, existing and/or approved projects selected through the screening exercise as potentially relevant to the assessment of impacts to benthic subtidal and intertidal ecology receptors are presented in Table A12.15. The tiers for the assessment are:

- Tier 1 is all existing submitted and approved projects (not yet in operation/part of baseline), including. the OMF option being considered which involves the adaption and leasing part of an existing port facility at Greenore (further detail is provided in Chapter 6) and the Phase One Projects.
- Tier 2 is all projects that have scoping reports or have a MAC.
- Tier 3 is all other projects that have been identified in the relevant Development Plans and other plans and programmes as appropriate.

The tiering structure is intended to provide an understanding of the potential for likely significant effects of the proposed development with the construction of all existing and submitted projects (tier one); followed by a cumulative assessment of the likely significant effect of that scenario combined with all projects that have a scoping report or Maritime Area Consent (MAC) (tier two); and lastly the combination of tier one and tier two with tier three, which is all other projects that have been identified in the relevant Development Plans and other plans and programmes which have been screened in.

Offshore construction of the proposed development is anticipated to occur between 2028 to 2030, with operation commencing in 2031. After construction, the proposed development would be operational for 35 years.

Table A12.15 Projects and plans considered within the cumulative impact assessment (replaces Table 12.22 in Chapter 12 of the 2024 EIAR)

Development Type	Project	Status	Data Confidence	Distance to NISA		Justification for screening into the cumulative effects assessment
				Array area	ECC	
Tier 1						
Coastal Assets	Greenore Operation and Maintenance Facility (OMF)	This project is not screened into the Benthic Subtidal and Intertidal Ecology cumulative effects assessment due to the onshore (landward HWM) nature of the infrastructure and associated offshore works being outside of the tidal excursion considered for the cumulative effects assessment.				
	Drogheda Port Company dredging	Consented – 8 year licence determined in 2021	High	15.68km	10.44km	The proposed dates of the Drogheda Port Company dredging programme may overlap with that of the proposed development. Therefore, given the distance between the there is potential for in-combination effects with the proposed development.
East Coast Phase One OWFs	Oriel Wind Park	Planning application	High	16.94km	21.61km	Installation of up to 25 WTGs, one OSP, and one export cable. Construction is anticipated to take place 2026-2028.

Development Type	Project	Status	Data Confidence	Distance to NISA		Justification for screening into the cumulative effects assessment
				Array area	ECC	
Dumping at Sea	Drogheda Port Company - Dumping site A1	Consented	High	11.7km	10.25km	Release of dredged material from vessels at predefined dumping site approximately 4km northeast (Dumping site A1) from the Drogheda port entrance. Overlap in construction period.
	Drogheda Port Company - Dumping site A2	Consented	High	15.33km	14.28km	Release of dredged material from vessels at predefined dumping site approximately 4km north (Dumping site A2) from the Drogheda port entrance. Overlap in construction period.
Sea Disposal	Warrenpoint B	Consented	High	23.75km	28.88km	Sea disposal of dredging material from Warrenpoint Harbour (Warrenpoint B) Licence ML2023040 – overlap with construction and operational period.
Oil and Gas Pipeline	Interconnector 2 Scotland to Ireland	Active	High	0.52km	2.68km	Pipelines may require maintenance activities which may result in short-term, temporary seabed disturbance.
	Interconnector 1 Scotland to Ireland	Active	High	4.24km	10.60km	
Subsea Cables	Havhingsten SEG 1 Telecoms Cable	Active	High	0.68km	9.73km	Operational subsea cables may require maintenance activities which may result in short-term, temporary seabed disturbance.
	Rockabill Telecoms Cable	Active	High	4.87km	12.85km	
	East West Interconnector Power Cable	Active	High	5.15km	11.57km	
	Hibernia Atlantic SEG C Telecoms Cable	Active	High	7.79km	17.09km	
	Sirius South Telecoms Cable	Active	High	9.41km	18.75km	
	CelticConnect Telecoms Cable	Active	High	11.29km	20.07km	
	Zayo Emerald Bridge One Telecoms Cable	Active	High	12.09km	20.23km	
	ESAT 2 Telecoms Cable	Active	High	14.41km	24.19km	
	Oriel ECC Power Cable	Planning application	High	18.06km	22.60km	

Development Type	Project	Status	Data Confidence	Distance to NISA		Justification for screening into the cumulative effects assessment
				Array area	ECC	
Survey	NISA Site Investigation	Consented	High	0km	0km	Site investigation activities to inform the development of the North Irish Sea Array (NISA) offshore windfarm (OWF) and export cable, off the coasts of counties Dublin, Meath and Louth. These site investigations include hydrological and geophysical, geotechnical, metocean, ecological, archaeological and water quality surveys. Licence (LIC230001) term for site investigations 2024 to 2031.
	MaresConnect Electricity Interconnector Site Investigation	Approved	High	10.35km	17.99km	MaresConnect Electricity Interconnector Site Investigation (Portmarnock to Ardgillan, Dublin) – Licence (FS007635 / MUL240008) term for site investigations 2025 to 2030.
Tier 2						
Subsea Cables	Mares Connect Power Cable	Pre-consent	Medium	6.02km	12.26km	Proposed subsea power cable with construction anticipated to take place from 2026 to 2028. Included for assessments relating to impacts arising from seabed disturbances and associated increases to SSC and sediment deposition.
Tier 2						
In Stage 2: Screening, there were no projects identified with the potential for interaction between effects with the proposed development.						
Tier 3						
In Stage 2: Screening, there were no projects identified with the potential for interaction between effects with the proposed development.						

12.9.3 Project impacts included in the cumulative assessment

The change in this section is limited to the update replacing Table 12.23 of Chapter 12 of the 2024 EIAR with Table A12.16. This table reflects the update to impacts considered within this Chapter and the updated cumulative effects assessment that has been undertaken in response to RFI Section 5.

Table A12.16 Identified impacts considered for the assessment of cumulative impacts (replaces Table 12.23 of Chapter 12 of the 2024 EIAR)

Potential cumulative impact	Phase	Tiers and Projects	Justification for inclusion in cumulative effects assessment
1. Cumulative temporary habitat loss as a result of construction and	Construction Decommissioning	Tier 1 • Oriel Wind Park	Seabed preparation works, foundation, cable and pipeline installation and maintenance works from other projects can put temporary habitat

Potential cumulative impact	Phase	Tiers and Projects	Justification for inclusion in cumulative effects assessment
decommissioning activities		• Fingal County Council - construction of a coastal protection scheme • Interconnector 2 Scotland to Ireland • Interconnector 1 Scotland to Ireland • Havhingsten SEG 1 Telecoms Cable • Rockabill Telecoms Cable • East West Interconnector Power Cable • Hibernia Atlantic SEG C Telecoms Cable • Sirius South Telecoms Cable • CelticConnect Telecoms Cable • Zayo Emerald Bridge One Telecoms Cable • ESAT 2 Telecoms Cable • Oriel ECC Power Cable • NISA Site Investigation • MaresConnect Electricity Interconnector Site Investigation Tier 2 • Mares Connect Power Cable	disturbance/loss pressures on benthic subtidal ecology species and their supporting habitats
2. Cumulative increases in SSC and associated sediment deposition	Construction Operation and Maintenance Decommissioning	Tier 1 • Oriel Wind Park • Fingal County Council - construction of a coastal protection scheme • Drogheda Port Company - Dumping site A1 • Drogheda Port Company - Dumping site A2 • Warrenpoint B • Interconnector 2 Scotland to Ireland • Interconnector 1 Scotland to Ireland	Capital dredging and disposal, seabed preparation works, foundation and cable installation works from other projects can cause temporary increases in SSC and associated sediment deposition and smothering of the benthos.

Potential cumulative impact	Phase	Tiers and Projects	Justification for inclusion in cumulative effects assessment
		• Havhingsten SEG 1 Telecoms Cable • Rockabill Telecoms Cable • East West Interconnector Power Cable • Hibernia Atlantic SEG C Telecoms Cable • Sirius South Telecoms Cable • CelticConnect Telecoms Cable • Zayo Emerald Bridge One Telecoms Cable • ESAT 2 Telecoms Cable • Oriel ECC Power Cable • NISA Site Investigation • MaresConnect Electricity Interconnector Site Investigation Tier 2 • Mares Connect Power Cable	
3. Cumulative long-term or permanent habitat loss / change from the presence of foundations, scour protection and cable protection (operational phase).	Operation and Maintenance	Tier 1 • Oriel Wind Park • Oriel ECC Power Cable Tier 2 • MaresConnect Power Cable	The presence of OWF infrastructure in the marine environment, including foundations, scour protection and cable protection has the potential to cause long term changes in habitat through the presence of infrastructure in the marine environment.
4. Changes to seabed habitats arising from effects on physical processes, including scour effects and changes in the sediment transport and wave regimes resulting in likely significant effects on benthic communities (operational phase)	Operation and Maintenance	Tier 1 • Oriel Wind Park • Oriel ECC Power Cable Tier 2 • MaresConnect Power Cable	Changes in the tidal and wave regimes through the presence of structures in the marine environment from other projects could potentially affect subtidal benthic receptors through scour effects and changes in the sediment transport and wave regimes.

12.9.4 Cumulative Impact 1 – Cumulative temporary habitat loss as a result of construction and decommissioning activities

The key changes to this section are the updating of text to reflect the minor change in cumulative assessment methodology to follow the NSIP 2024 guidance, as per RFI Section 5.

Section 12.9.4 of Chapter 12 of the 2024 EIAR shall be deleted in its entirety and replaced with:

Seabed preparation works and foundation, cable and pipeline installation and maintenance works from other projects can put temporary habitat disturbance/loss pressures on benthic subtidal ecology species and their supporting habitats. This impact is associated primarily with construction and decommissioning phases. The likely significant cumulative effects, as a result of cumulative temporary habitat loss is presented in the following section.

12.9.4.1 Tier 1

Tier 1 projects screened into the cumulative effects assessment for impacts from temporary habitat loss include the proposed Oriel Wind Park and Oriel ECC Power Cable, the Drogheda Port Company project, active telecommunications and power transmission cables, and active oil and gas pipelines.

The extent of temporary disturbance and damage of the seabed during the construction of the Oriel Wind and Oriel EEC Power Cables is anticipated to be similar in scale as the changes resulting from the proposed development due to expected similarities in project designs and offshore activities. Specifically, any changes to the seabed and effects on benthic receptors resulting from construction of the Oriel Wind Park are expected to be restricted to discrete areas within the array area and ECC, and as such these would be of local spatial extent. Cumulative impacts would be of short-term duration, intermittent and reversible.

Simultaneous construction and planned/unplanned maintenance of operational Tier 1 subsea cables and pipelines considered in the Benthic Subtidal and Intertidal Ecology assessment (Table A12.16) may occur, although specifics of schedules are unknown. However, the lengths of cable and/or pipelines to be replaced or reburied would likely be similar in scale to potential maintenance activities associated with the proposed development, and the potential impacts would be highly localised and occur over a short duration.

Moreover, maintenance activities are expected to be infrequent over the lifetime of the assets, reducing the likelihood of concurrent activities with the proposed development. While there is potential for simultaneous disturbance effects within the cumulative assessment area, any temporary habitat loss associated with the Tier 1 projects are expected to be highly localised, of short-term duration, intermittent and reversible. Any habitat losses are expected to be small in the context of available suitable habitats of sensitive receptors in the study area and wider region.

Therefore, any potential cumulative effects on benthic ecology receptors resulting from the simultaneous activities at the proposed development in-combination with Tier 1 projects are anticipated to be unlikely. Consequently, the maximum magnitude of the cumulative impact with respect to Tier 1 projects is assessed as being negligible.

As temporary disturbances are expected to be of local spatial extent, short-term duration, intermittent and reversible, the magnitude of the potential cumulative temporary habitat loss from concurrent construction and decommissioning is concluded to be low. The greatest sensitivity of receptors in the area is assessed as medium; this would result in a not significant effect, which is not significant in EIA terms.

12.9.4.2 Tier 1 and 2

Cumulative effects may also arise during simultaneous offshore construction activities associated with the installation of the proposed MaresConnect electricity interconnector. Installation methodologies, location and the construction programme for the MaresConnect interconnector are unknown at the time of writing. However, physical impacts to the seabed associated with this projects are expected to be of local extent, temporary and reversible, with the cumulative duration of activities expected to be at most short-term.

As temporary disturbances are expected to be of local spatial extent, short-term duration, intermittent and reversible, the magnitude of the potential cumulative temporary habitat loss from concurrent construction and decommissioning in relation to Tier 1 and Tier 2 projects is concluded to be low. The greatest sensitivity of receptors in the area is assessed as medium which would result in a slight effect, which is not significant in EIA terms.

12.9.4.3 Tier 1, 2 and 3 (All tiers)

No Tier 3 projects were screened into the cumulative effects assessment for Benthic Subtidal and Intertidal Ecology.

In summary, temporary habitat loss resulting from the Tier 1 and Tier 2 projects will be localised, intermittent and reversible resulting in low magnitude. As maximum sensitivity of receptors is medium any cumulative impacts on Benthic Subtidal and Intertidal Ecology receptors resulting from Tier 1 and Tier 2 projects are assessed to be slight i.e. comparable to the project alone, which is not significant in EIA terms. Therefore, no additional mitigation to that already identified in Table A12.7 is considered necessary, and no significant adverse residual cumulative effects on Benthic Subtidal and Intertidal receptors have been predicted in respect to this impact.

12.9.5 Cumulative Impact 2 – Cumulative increases in SSC and associated sediment deposition

The key changes to this section are the updating of text to reflect the minor change in cumulative assessment methodology to follow the NSIP 2024 guidance, as per RFI Section 5.

Section 12.9.5 of Chapter 12 of the 2024 EIAR shall be deleted in its entirety and replaced with:

Capital dredging and disposal, seabed preparation works, foundation and cable installation and maintenance works from other projects can cause temporary increases in SSC and associated sediment deposition and smothering of the benthos. This impact is associated primarily with construction and decommissioning phases. The likely significant cumulative effects, as a result of cumulative temporary habitat loss is presented in the following section.

12.9.5.1 Tier 1

Tier 1 projects screened into the cumulative effects assessment for impacts from increases to SSC and sediment deposition include the proposed Oriel Wind Park and Oriel ECC Power Cable, the Drogheda Port Company project, sediment disposal at Warrenpoint B, active telecommunications and power transmission cables, and active oil and gas pipelines.

The potential maximum magnitude of effects arising from the impact at the proposed development has been assessed as low based on the short-term duration of construction, maintenance and decommissioning activities, and the intermittent, localised and temporary nature of changes in SSC and sediment deposition.

Sediment disturbed and released during the construction of the Oriel Wind Park and Oriel EEC Power Cable are anticipated to behave in a similar pattern as the sediments being disturbed by the proposed development due to expected similarities in activities combined with a similar environmental setting and sediment characteristics. Sediment plumes generated during construction activities at the Oriel Wind Park may be sufficient to interact with plumes from the proposed development. However, the potential increases in SSC, when considered cumulatively, would still to be temporary and intermittent, with SSC across overlapping plumes likely to be close to natural background levels. Any potential simultaneous disturbance effects on Benthic Subtidal and Intertidal Ecology receptors within the cumulative assessment area due to concurrent activities are expected to be localised, temporary and intermittent as sediment plumes would quickly dissipate following cessation of activities. Similarly, any areas likely to be exposed to heavy sediment deposition would be localised and small in the context of available suitable habitats of sensitive benthic receptors in the study area and wider region.

A small number of dredging and dredge disposal sites are located within the cumulative assessment screening range, which have the potential to contribute to cumulative effects with the proposed offshore construction works through sediment plume or deposition effects. Those projects include ongoing maintenance dredging activities at Drogheda Port and Warrenpoint Harbour and the associated disposal of dredged material offshore at designated disposal sites (Drogheda Port Company project and Warrenpoint B disposal site). It is not known what volumes of sediment will be disturbed and/or released at the construction and disposal sites at any one time. However, given the distance between the projects and the offshore development area (the nearest licensed sea disposal site located >10km from the array area), the potential for sediment plumes to interact is considered to be low. Simultaneous increase in SSC and sediment deposition may also arise during construction and operation of the proposed development and planned and unplanned maintenance of operational subsea cables and pipelines. Exact details and maintenance schedules are unknown; however, the lengths of cable and/ or pipelines to be replaced or reburied would likely be similar in scale to potential maintenance activities associated with the proposed development, and the potential impacts would be highly localised, infrequent and be of short duration.

While there is potential for simultaneous disturbance effects within the cumulative assessment area, any increases to SSC associated with the Tier 1 projects are expected to be temporary and intermittent, with sediment plumes expected to quickly dissipate following cessation of activities. Any areas likely to be exposed to heavy sediment deposition (e.g. at dredge disposal sites and areas near construction activities) are expected to be small in the context of available suitable habitats of sensitive receptors in the study area and wider region. Therefore, any potential cumulative effects on Benthic Subtidal and Intertidal receptors resulting from the simultaneous increase in SSC and sediment deposition at the proposed development in-combination with Tier 1 projects are anticipated to be at most barely discernible from baseline conditions. Consequently, the maximum magnitude of the cumulative impact with respect to Tier 1 projects is assessed as being low. As per the project alone assessment, the maximum sensitivity of the receptors to the impact is deemed to be medium (see Tables A12.9 and A12.10). The greatest sensitivity for benthic subtidal ecology receptors is rated as medium. At most, this would result in a slight cumulative effect, which is not significant in EIA terms.

12.9.5.2 Tier 1 and 2

Owing to the proximity of the proposed MaresConnect cable route to the proposed development and the potential for temporal overlap during construction and operation activities there is potential for the effects of increases in SSC and sediment deposition to act cumulatively. Installation methodologies, location and the construction programme for the MaresConnect interconnector are unknown at the time of writing.

However, sediment released during the construction of MaresConnect are anticipated to behave in a similar pattern as the sediments being disturbed by the proposed development due to expected similarities in activities combined with a similar environmental setting. Any potential simultaneous disturbance effects on benthic subtidal and intertidal receptors due to concurrent activities are expected to be localised, temporary and intermittent as sediment plumes would quickly dissipate following cessation of activities. Similarly, any areas likely to be exposed to heavy sediment deposition would be localised and small.

Therefore, any potential cumulative effects on benthic receptors resulting from the simultaneous increase in SSC and sediment deposition from the proposed development in-combination with Tier 1 and Tier 2 projects are anticipated to be at most barely discernible from baseline conditions. Consequently, the maximum magnitude of the cumulative impact with respect to Tier 1 and Tier 2 projects is assessed as being low.

As per the project alone assessment, the maximum sensitivity of the receptors to the impact is deemed to be medium. At most, this would result in a slight cumulative effect, which is not significant in EIA terms.

12.9.5.3 Tier 1, 2 and 3 (All tiers)

No Tier 3 projects were screened into the cumulative effects assessment for Benthic Subtidal and Interidal Ecology.

In summary, temporary habitat loss resulting from the Tier 1 and Tier 2 projects will be localised, intermittent and reversible resulting in low magnitude. As maximum sensitivity of receptors is medium any cumulative impacts on Benthic Subtidal and Intertidal Ecology receptors resulting from Tier 1 and Tier 2 projects are assessed to be slight i.e. comparable to the project alone, which is not significant in EIA terms.

Therefore, no additional mitigation to that already identified in Table A12.7 is considered necessary, and no significant adverse residual cumulative effects on Benthic Subtidal and Intertidal receptors have been predicted in respect to this impact.

12.9.6 Cumulative Impact 3 – Cumulative long-term or permanent habitat loss / change from the presence of foundations, scour protection and cable protection

The key changes to this section are the updating of text to reflect the minor change in cumulative assessment methodology to follow the NSIP 2024 guidance, as per RFI Section 5.

Section 12.9.6 of Chapter 12 of the 2024 EIAR shall be deleted in its entirety and replaced with:

The presence of OWF infrastructure in the marine environment, including foundations, scour protection and cable protection has the potential to cause long term changes in habitat through the presence of infrastructure in the marine environment and is considered as being associated primarily with the operational phase. Also,

any infrastructure left in situ following decommissioning will represent a permanent loss of habitat. The likely significant cumulative effects, as a result of concurrent long-term or permanent habitat loss, is presented in the following section.

12.9.6.1 Tier 1

Tier 1 projects screened into the cumulative effects assessment for impacts from long term or permanent habitat loss include the proposed Oriel Wind Park and Oriel ECC Power Cable.

It is predicted that up to 0.53km^2 of seabed would be permanently lost due to the installation of foundations, scour protection and cable protection associated with the proposed development (Table A12.8). The loss of sedimentary habitats resulting from the construction of the Oriel Wind Park is predicted to be slightly smaller compared to that assessed for the proposed development, with approximately 0.3km^2 of seabed predicted to be lost due to the placement of foundations, scour protection and cable protection (Oriel Windfarm, 2024b). Any long-term or permanent loss of seabed habitats will be highly localised and restricted to discrete areas within the array areas and ECC, resulting in a cumulative loss of sedimentary habitats with the proposed development of approximately 0.83km^2. While the impact will be locally significant and comprise a permanent change in seabed habitat within the footprint of the structures and scour and cable protection, the footprint of the area affected is highly localised. A change of subtidal sediment biotopes to rock or artificial hard substratum would alter the loss of the sedimentary community and a change in the character of the biotope leading to reclassification.

However, as the habitats and characterising biotopes are common and widespread throughout the wider region (Table A12.5) the magnitude of the loss of these habitats would be negligible. Consequently, the overall magnitude is therefore assessed as negligible.

The sensitivity of subtidal benthic habitats to habitat disturbance have been documented in Table A12.12. The greatest sensitivity for benthic subtidal ecology receptors is rated as high. Consequently, allied to negligible magnitude, this would result in a not significant cumulative effect.

12.9.6.2 Tier 1 and 2

The proposed MaresConnect interconnector may contribute to the cumulative long-term loss of subtidal benthic habitats through the placement of cable protection measures. No information relating to the use of cable protection by the project is currently available. However, any loss of seabed habitats predicted from the project would be highly localised, and as such no discernible loss of resource for subtidal benthic receptors are anticipated from the MaresConnect project alone. Consequently, cumulatively with the proposed development and the Tier 2 projects effects of negligible magnitude are expected. Consequently, the maximum magnitude of the cumulative impact with respect to Tier 1 and Tier 2 projects is assessed as being negligible.

As per the project alone assessment, the maximum sensitivity of the receptors to the impact is deemed to be high. At most, this would result in a not significant cumulative effect.

12.9.6.3 Tier 1, 2 and 3 (All tiers)

No Tier 3 projects were screened into the cumulative effects assessment for Benthic Subtidal and Interidal Ecology.

In summary, long term/permanent habitat loss resulting from the Tier 1 and Tier 2 projects will be localised, resulting in negligible magnitude of effect. As maximum sensitivity of receptors is high any cumulative impacts on Benthic Subtidal and Intertidal Ecology receptors resulting from Tier 1 and Tier 2 projects are assessed to be not significant. Therefore, no additional mitigation to that already identified in Table A12.13 is considered necessary, and no significant adverse residual cumulative effects on Benthic Subtidal and Intertidal receptors have been predicted in respect to this impact.

12.9.7 Cumulative Impact 4 – Changes to seabed habitats arising from effects on physical processes, including scour effects and changes in the sediment transport and wave regimes resulting in likely significant effects on benthic communities

The key changes to this section are the updating of text to reflect the minor change in cumulative assessment methodology to follow the NSIP 2024 guidance, as per RFI Section 5.

Section 12.9.7 of Chapter 12 of the 2024 EIAR shall be deleted in its entirety and replaced with:

Changes in the tidal and wave regimes through the presence of structures in the marine environment could potentially affect those subtidal benthic receptors detailed in Table A12.11 through scour effects and changes in the sediment transport and wave regimes during the operational phase. The likely significant cumulative effects, as a result of concurrent changes to seabed habitats arising from effects on physical processes, on benthic communities is presented in the following section.

12.9.7.1 Tier 1

Tier 1 projects screened into the cumulative effects assessment for impacts from long term or permanent habitat loss include the proposed Oriel Wind Park and Oriel ECC Power Cable.

The effects on the tidal and wave regimes from the proposed development alone on benthic receptors (see Table A12.11) were deemed to be of negligible magnitude for the proposed development (Chapter 10) and that the influence on the regimes was highly localised. Given the similar technologies, scales of development and analogous location Oriel Wind Park project, it is anticipated that similar magnitudes of effects would occur for this project.

The sensitivity of benthic habitats to the wave and tidal regimes have been documented in Impact 8 (Section 12.5.3.3). As indicated in the discussion the greatest sensitivity of the receptors is considered to be medium according to the MarLIN MarESA sensitivity category. Consequently, allied to negligible magnitude, this would result in a not significant cumulative effect.

12.9.7.2 Tier 1 and 2

The proposed MaresConnect interconnector may contribute to changes to seabed habitats arising from effects on physical processes. No information relating to the use of cable protection by the project is currently available. However, any changes to seabed habitats predicted from the project would be highly localised, and as such no discernible impacts on subtidal benthic receptors are anticipated from the MaresConnect project alone. Consequently, cumulatively with the proposed development and the Tier 2 projects effects of negligible magnitude are expected. Consequently, the maximum magnitude of the cumulative impact with respect to Tier 1 and Tier 2 projects is assessed as being negligible.

As per the project alone assessment, the maximum sensitivity of the receptors to the impact is deemed to be medium. At most, this would result in not significant cumulative effect.

12.9.7.3 Tier 1, 2 and 3 (All tiers)

No Tier 3 projects were screened into the cumulative effects assessment for Benthic Subtidal and Intertidal Ecology.

In summary, changes to seabed habitats arising from effects on physical processes resulting from the Tier 1 and Tier 2 projects will be localised, resulting in negligible magnitude of effect. As maximum sensitivity of receptors is medium any cumulative impacts on Benthic Subtidal and Intertidal Ecology receptors resulting from Tier 1 and Tier 2 projects are assessed to be not significant. Therefore, no additional mitigation to that already identified in Table A12.8 is considered necessary, and no significant adverse residual cumulative effects on Benthic Subtidal and Intertidal receptors have been predicted in respect to this impact.

12.10 References

In response to RFI Section 1(b) and RFI Section 1(c), the following references are added:

[1] Fenton, A., Dunleavy, D., Paul, T., McMahon, C., Reid, A. and McCormack, E. (2025). NISA, Benthic Ecology Survey Report 2025. Aquafact report to North Irish Sea Array Windfarm Ltd.

[2] Jakubowska, M., B. Urban-Malinga, B., Otremba, Z. and Andrulewicz, E. (2019). Effect of low frequency electromagnetic field on the behavior and bioenergetics of the polychaete Hediste diversicolor. Mar. Environ. Res., 150 (2019)

[3] Love, M.S., Nishimoto, M.M., Clark, S. and Bull, A.S.. (2016). Renewable Energy in situ Power Cable Observation. U.S. Department of the Interior, Bureau of Ocean Energy Management, Pacific OCS Region, Camarillo, CA.

[4] Scott, K., Harsanyi, P., Easton, B.A., Piper, A.J., Rochas, C. and Lyndon, A. R. (2021). Exposure to electromagnetic fields (EMF) from submarine power cables can trigger strength-dependent behavioural and physiological responses in edible crab, Cancer pagurus (L.). J. Mar. Sci. Eng., 9 (7) (2021)

[5] SEP Hydrographic (2024). Nearshore and Intertidal Geophysical Survey. Operations & Results Report prepared for North Irish Sea Array Limited.

[6] Switzer T, Meggitt D. 2010. Review of literature and studies on electromagnetic fields (EMF) generated by undersea power cables and associated influence on marine organisms. Oceans 2010, Seattle, 20–23 September.

There are no other changes to this section. Refer to Section 12.10 of Chapter 12 in the 2024 EIAR.