EIAR Addendum

Appendix 6-B Intertidal Assessment

codling wind park

Table of contents

List of tables

List of figures

List of plates

Abbreviations

Abbreviation	Term in Full
ABP	An Bord Pleanála
CWP	Codling Wind Park
CWPL	Codling Wind Park Limited
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
HWM	High-Water Mark
IAC	Inter-array cable
MAC	Marine Area Consent
OD	Ordnance Datum
OECC	Offshore Export Cable Corridor
OWF	Offshore Wind Farm
PINS	Planning Inspectorate
SAC	Special Area of Conservation
SPA	Special Protection Area
SSC	Suspended Sediment Concentration
TJB	Transition Joint Bays
WTG	Wind Turbine Generator

Definitions

Glossary	Meaning
the Applicant	The developer, Codling Wind Park Limited (CWPL).
array site	The area within which the wind turbine generators (WTGs), inter-array cables (IACs) and the offshore substation structures (OSSs) are proposed.
Codling Wind Park (CWP) Project	The proposed development as a whole is referred to as the Codling Wind Park (CWP) Project, comprising of the offshore infrastructure, the onshore infrastructure and any associated temporary works.
Codling Wind Park Limited (CWPL)	A joint venture between Fred. Olsen Seawind (FOS) and Électricité de France (EDF) Renewables, established to develop the CWP Project.
combi-wall	A piling wall that is comprised of high modulus structural components interspaced by lighter sheet piles. The high modulus components - known as king piles - can be tubular, box, bearing or other types of fabricated piles.
Dun Laoghaire Harbour	The historic harbour of Dun Laoghaire on the southern shore of Dublin Bay with limits defined as the areas contained within and including the East and West piers of Dún Laoghaire Harbour and within 600 metres of the entrance to that harbour, together with any adjoining land, banks, inlets and havens vested in Dún Laoghaire Harbour Company and the docks, piers, jetties, quays and other works vested in that company.
Environmental Impact Assessment (EIA)	A systematic means of assessing the likely significant effects of a proposed project, undertaken in accordance with the EIA Directive and the relevant Irish legislation.
Environmental Impact Assessment Report (EIAR)	The report prepared by the Applicant to describe the findings of the EIA for the CWP Project.
export cables	The cables, both onshore and offshore, that connect the offshore substations with the onshore substation.
high water mark (HWM)	The line of high water of ordinary or medium tides of the sea or tidal river or estuary.
landfall	The point at which the offshore export cables are brought onshore and connected to the onshore export cables via the transition joint bays (TJB). For the CWP Project The landfall works include the installation of the offshore export cables within Dublin Bay out to approximately 4 km offshore, where water depths that are too shallow for conventional cable lay vessels to operate.
offshore development area	The total footprint of the offshore infrastructure and associated temporary works including the array site and the OECC.
offshore export cables	The cables which transport electricity generated by the wind turbine generators (WTGs) from the offshore substation structures (OSSs) to the TJBs at the landfall.

Glossary	Meaning
offshore export cable corridor (OECC)	The area between the array site and the landfall, within which the offshore export cables will be installed along with cable protection and other temporary infrastructure for construction.
onshore transmission infrastructure (OTI)	The onshore transmission assets comprising the TJBs, onshore export cables and the onshore substation. The EIAR considers both permanent and temporary works associated with the OTI.
onshore substation	Site containing electrical equipment to enable connection to the national grid.
onshore substation site	The area within which permanent and temporary works will be undertaken to construction the onshore substation.
onshore substation site boundary	The physical boundary of the onshore substation site.
onshore substation operational site	The area within the operational site boundary within which operational activities will occur.
Phase 1 Project	Under the special transition provisions in the Maritime Area Planning Act 2021, as amended (the MAP Act), the Minister for the Department of Environment, Climate and Communications (DECC) has responsibility for assessing and granting a Maritime Area Consent (MAC) for a first phase of offshore wind projects in Ireland. The Phase 1 Projects include Oriel Wind Park, Arklow Bank II, Dublin Array, North Irish Sea Array, Codling Wind Park and Skerd Rocks. A MAC has since been granted by DECC for each of the Phase 1 Projects.
planning application boundary	The area subject to the application for development consent, including all permanent and temporary works for the CWP Project.
revetment	A facing of impact-resistant material applied to a bank or wall in order to absorb the energy of incoming water and protect it from erosion.
Sheet piles	Sections of sheet materials with interlocking edges that are driven into the ground to provide earth retention and excavation support. Sheet piling is used in construction to provide both temporary and permanent walls.
temporary cofferdam	A barrier to tidal inundation whilst the existing stone covered foreshore is temporarily removed to install the landfall cable ducts.
transition joint bay (TJB)	This is required as part of the OTI and is located at the landfall. It is an underground bay housing a joint which connects the offshore and onshore export cables.

APPENDIX 6-B INTERTIDAL ASSESSMENT

1 Introduction

1. Codling Wind Park Limited (hereafter 'the Applicant') is proposing to develop the Codling Wind Park (CWP) Project, which is located in the Irish sea approximately 13 - 22 km off the East coast of Ireland, at County Wicklow.

2. This assessment forms part of the Applicant's response to item 6g (see **FIR Response Document**) of the FIR from An Coimisiún Pleanála (ACP) (referred to hereafter as the 'Commission') and supports **Section 6** of the **EIAR Addendum (Part 1)**.

1.1 Project Description

3. The following details are taken from **Volume 2**, **Chapter 4 Project Description** of the EIAR and relevant **Planning Drawings**.

4. The nearshore and intertidal works for the CWP Project primarily occur at the landfall on the Poolbeg Peninsula and extend approximately 4 km offshore into Dublin Bay. These works include the installation of three transition joint bays (TJBs), each measuring 18 m × 4 m × 3 m deep, located about 40 m landward of the high-water mark (HWM), where offshore export cables will be connected to onshore cables. Associated with the TJBs are landfall cable ducts (three ducts, each 50 m long) installed via open-cut trenching, requiring excavation of approximately 4,224 m³ of material and temporary removal of the existing coastal revetment. A temporary cofferdam (40 m × 75 m footprint, +3.0 mOD height) will be constructed to enable dry working conditions below the HWM, disturbing around 6,100 m² of seabed, and supported by a gravel access ramp (60 m × 10 m) across the foreshore, which will remain in place for up to 24 months.

5. Beyond (seaward of) the HWM, three intertidal cable ducts will be installed below the existing intertidal sediment surface over a 300 m length, each within individual trenches up to 18 m wide and 2 m deep, disturbing approximately 20,400 m² of the intertidal. Further seaward, in the transition zone (350 m to c. 4 km offshore), three non-ducted offshore export cables will be free-laid and buried using a combination of open-cut trenching (3 x 1.7 km, 4 m width) and shallow-water trenching tools (3 x 2 km, 4 m width), resulting in a total disturbed area of approximately 44,400 m². Temporary support structures for cable pull-in include a mid-support pontoon (20 m × 50 m), three tensioner platforms (15 m × 10 m each), approximately 400 rollers per cable circuit, and one equipment storage platform (70 m × 25 m), all of which will be removed post-installation. Construction will be phased over 10 - 12 months, with Phase 1 covering site clearance, berm excavation, cofferdam installation, and duct laying, and Phase 2 involving cable pull-in, burial, and reinstatement. Environmental controls include an Onshore Invasive Species Management Plan, seasonal restrictions to protect overwintering birds in the adjacent SPA, and noise mitigation during vibropiling for sheet piles and cofferdam installation. Upon completion, berms will be regraded, topsoil and grass replanted, and the coastal revetment reinstated, leaving only minimal permanent hardstanding for link boxes and access roads.

6. A summary of the proposed works are provided in **Table 1**, and the locations of these works are presented in **Figure 1**.

Table 1 Summary of the Nearshore / Intertidal Works

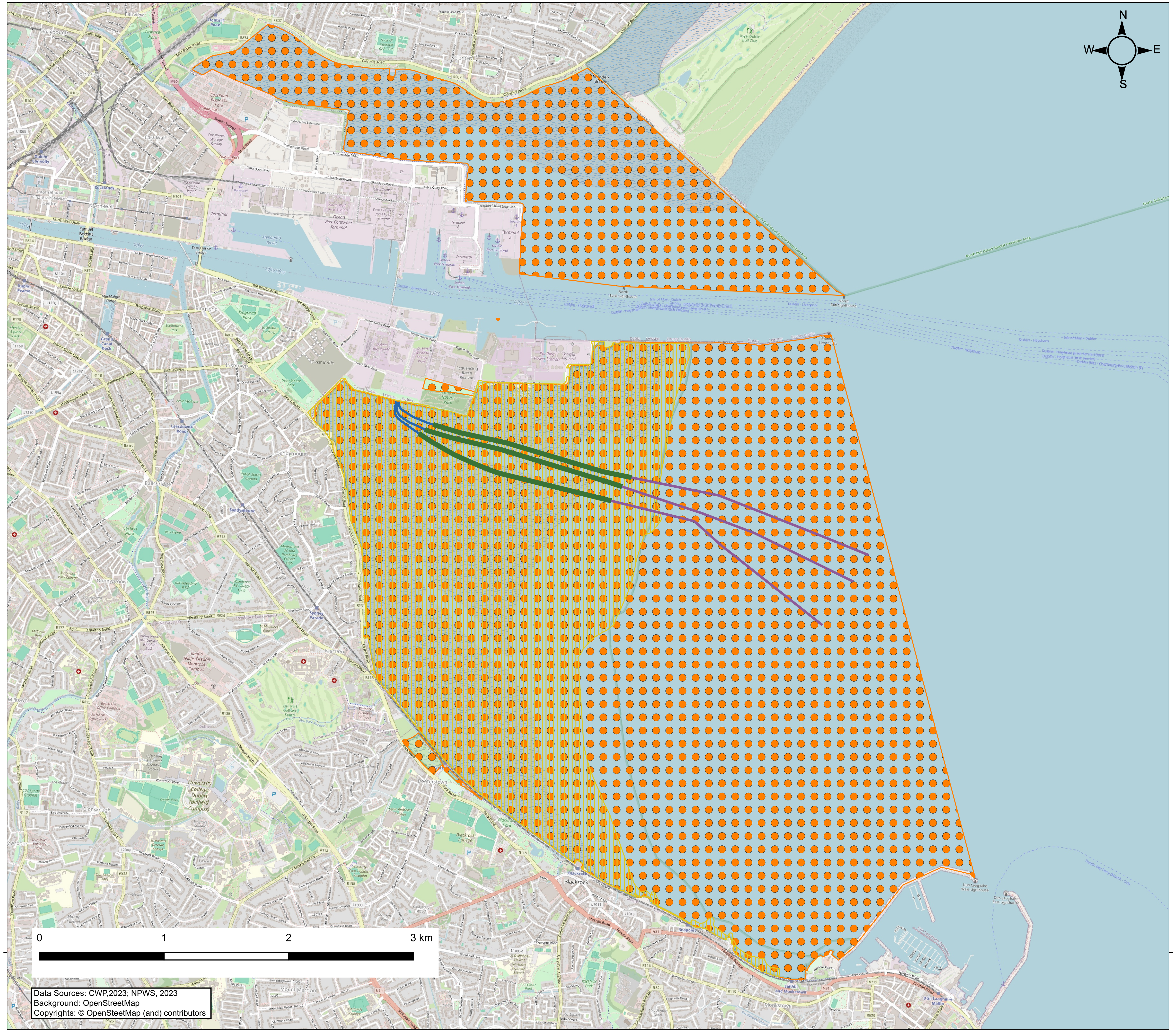
Component	Parameters
Transition Joint Bays (TJBs)	3 bays (18 × 4 × 3 m), ~40 m landward of HWM; excavation ~1,992 m³; footprint 1,200 m²
Landfall Cable Ducts	3 ducts, 50 m long; open-cut trenching; excavation ~4,224 m³; cofferdam 40 × 75 m
Temporary Cofferdam	Footprint 6,100 m²; height +3.0 mOD; vibropiling; duration ~6 weeks
Access Ramp	60 × 10 m gravel ramp; operational ~24 months
Intertidal Cable Ducts	3 ducts, 300 m long; trench width 18 m, depth 2 m; seabed disturbed ~16,200 m²
Non-Ducted Export Cables	3 cables, Transition zone: 1.7 km open-cut (4 m width) + 2 km shallow trenching (2 m width); total disturbed area ~44,400 m²
Support Structures	1 mid-support pontoon (20 × 50 m), 3 tensioner platforms (15 × 10 m), ~400 rollers per cable circuit, 1 storage platform (70 × 25 m)
Burial Depths	Minimum cover 1.4 m; trench depth up to 2 m
Construction Duration	10–12 months (phased: Phase 1 ducts/cofferdam; Phase 2 cable pull-in/burial)
Environmental Controls	SPA seasonal restrictions; invasive species plan; noise mitigation for vibropiling

1.2 Designated Sites

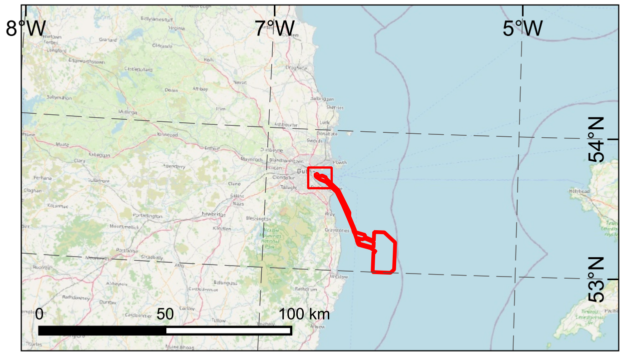
7. The proposed cable landfall lies within the environmental context of two relevant European-designated conservation sites: the South Dublin Bay and River Tolka Estuary SPA and the Dublin Bay SAC. No other Natura 2000 sites require consideration for the intertidal works component. The South Dublin Bay and River Tolka Estuary SPA is designated for its importance as an internationally significant wintering bird assemblage, supporting species that rely heavily on intertidal sandflat habitats for feeding, roosting, and staging. Key qualifying species associated with this SPA include Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Sanderling, Dunlin, Bar-tailed Godwit, Redshank and Turnstone, all of which utilise the broader sand-dominated intertidal areas within Dublin Bay. Conservation objectives for the SPA focus on maintaining both the extent and ecological function of intertidal feeding habitat, as well as ensuring disturbance does not compromise bird energy budgets or distribution patterns.

8. The Dublin Bay SAC encompasses extensive marine and intertidal sandflat systems and is designated for Annex I habitat types including Mudflats and Sandflats not covered by seawater at low tide, Annual vegetation of drift lines, and Salicornia and other annuals colonising mud and sand. The sandy sediments present at the proposed landfall location fall within the broader SAC habitat mosaic but do not represent any unique, rare, or structurally sensitive features. Conservation objectives for the SAC seek to maintain habitat extent, community composition, sediment structure, and hydrodynamic functioning. The location of these designated sites is presented in **Figure 1**.

6°12'W



5910000



Legend

- Planning Application Boundary
- Intertidal Cable Ducts
- Non-ducted offshore export cable laying in the intertidal area (Open-Cut Trenching)
- Non-ducted offshore export cable laying in the intertidal area (Shallow Trenching)
- Dublin Bay SAC
- South Dublin Bay and River Tolka Estuary SPA

Project: Codling Wind Park

Contractor: Partrac.com

Figure 1: Designated Sites and Project Infrastructure within the Intertidal Zone

Internal descriptive code:	Size: A3	CRS:
Codling_EIA_PhysicalProcesses	Scale: 1:30,000	EPSG 25830

Rev.	Description	Date	By	Chk'd	App'd
A	First issue	2026/05/27	AS	MW	MW
B					
C					
D					

2 Baseline Environment

9. The southern side of the Poolbeg Peninsula, facing Sandymount Strand and the inner portion of Dublin Bay, is characterised by extensive intertidal sand and mudflats that gently grade/slope seaward. This is shown in **Plate 1**, which illustrates the areas of sandflats. Surface sediments in this zone are predominantly fine to medium sands, interspersed with silty deposits where tidal currents slacken, especially within shallow depressions and along the landward parts of the strand. Sediment mobility is moderate, with bedforms and surface veneers periodically reworked by tidal flows, shallow water waves and, more episodically, by high energy storm-driven wave action. The sheltered nature of the inner bay compared to the exposed outer bay enables finer sediment fractions to settle and persist, contributing to the development of broad, relatively stable intertidal sandflats that are exposed through much of the tidal cycle. Contaminant analysis undertaken as part of the recent sediment sampling campaign confirmed that no contamination in exceedance of Irish upper action levels or Cefas AL2 was present in these sediments (**Appendix 8-A 2025 Benthic Baseline Report**.).

10. Morphologically, the Sandymount side of the Poolbeg Peninsula exhibits a wide, shallow foreshore profile, with a gradual slope extending several hundred metres offshore interspersed with shallow meandering channels, that receding and rising tidal waters become concentrated into. This is depicted in **Plate 2**, which shows a view of a channel immediately seaward of the existing coastal revetment through which the cables will be laid.

11. Tidal behaviour in this area follows the semi-diurnal regime of Dublin Bay, with a typical range of roughly 3 to 3.5 metres, producing extensive periods of tidal exposure across Sandymount Strand. Tidal currents are generally weak to moderate in the inner bay compared to the entrance channel, allowing suspended sediments to deposit and maintain the broad flats. Localised flow acceleration can occur near the Poolbeg shoreline where the peninsula deflects tidal movement, occasionally reshaping shallow channels or forming transient pools that influence sediment texture and moisture retention.

12. Historically, human interventions on the Sandymount-facing side of Poolbeg have significantly influenced the coastal character and natural morphological development of the system. The upper part of the foreshore i.e where the beach should/would be, in the area of interest of the cable landfall, can only be described as heavily modified with hard engineering (rock revetment) installed. **Plate 3** shows this hard engineering in the form of rock revetment and engineered shoreline edges that now dominate this section of the peninsula. The surrounding land was reclaimed from the bay and estuary, with reclamation and development completed in 1967 - 68. This involved constructing an enclosed area with a rock retaining wall, subsequently backfilled with sand, shingle, and other materials, primarily sourced from the adjacent bay. The extent of change is illustrated by **Plate 4**, which presents a historical map of Dublin Bay from 1875, and **Plate 5**, which shows the present-day configuration following reclamation and development. Today, rock revetments, armoured embankments, and engineered shoreline edges along the peninsula restrict the natural lateral and shoreward movement of the foreshore and limit landward sediment redistribution. Historic reclamation has reduced the extent of former saline wetlands and mudflats, replacing them with straightened, hardened boundaries that interrupt natural shoreline evolution. Additional features, such as outfall structures, service conduits, and minor access installations, produce localised morphological disturbances. Although these modifications are more subtle than the port infrastructure on the Liffey-facing side, collectively they create a coastline that is more static and less morphodynamically responsive than under natural conditions, affecting sediment dynamics and the development of tidal flats immediately offshore of Sandymount Strand.

13. The South Bull Wall, running along the western edge of Sandymount Strand, has historically modified hydrodynamics by reflecting wave energy during high tides and concentrating ebb flows and reducing natural sediment dispersal across the inner bay. This intervention has stabilised and encouraged accretion on the Sandymount tidal flats over time, reinforcing the development of smooth, expansive

intertidal surfaces. The intertidal shoreline edge along Sandymount itself is largely natural in appearance but responds slowly to change due to the reduced wave energy and regulated tidal circulation.

Plate 1 Intertidal sandflat area proximal to cable landfall. inset is a picture of the shallow wave formed ripples on the sediment surface

Plate 2 Channel which runs alongside coastline rock revetments within the intertidal area

Plate 3 Example of the rock revetments in proximity to the proposed which dominate the coastline of the Poolbeg Peninsula

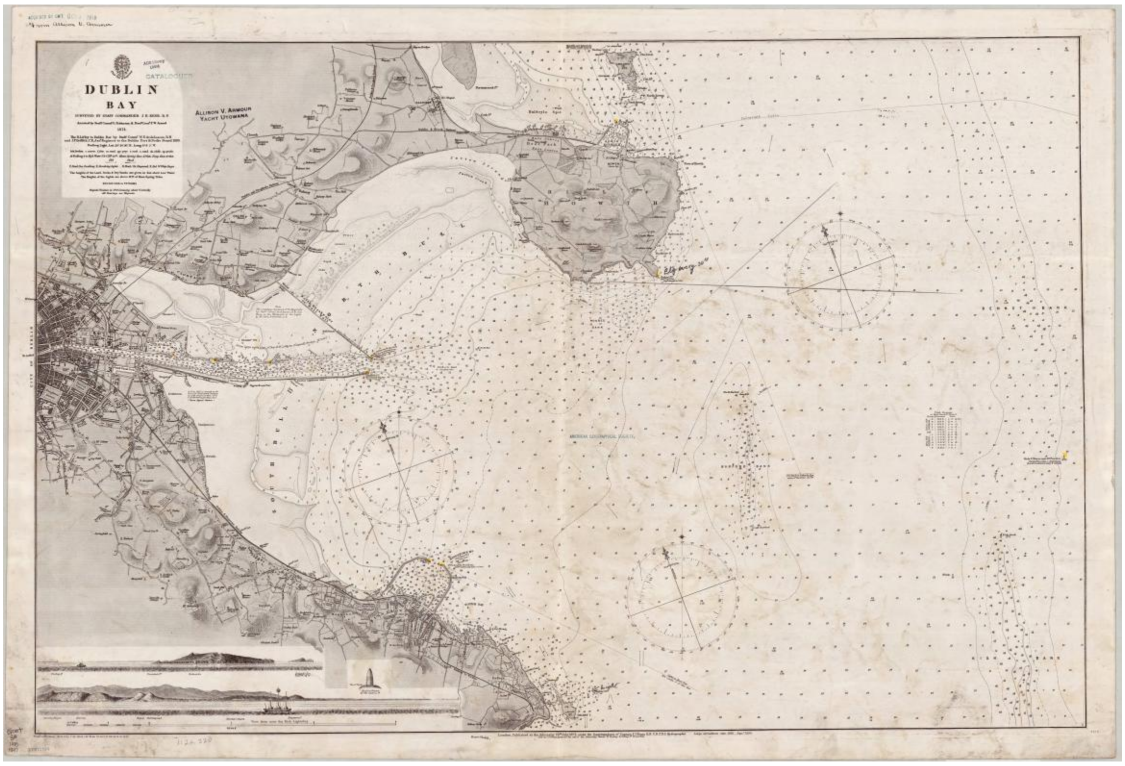


Plate 4 Dublin Bay - published at the Admiralty 20th July 1875 (GBHO, 1879).

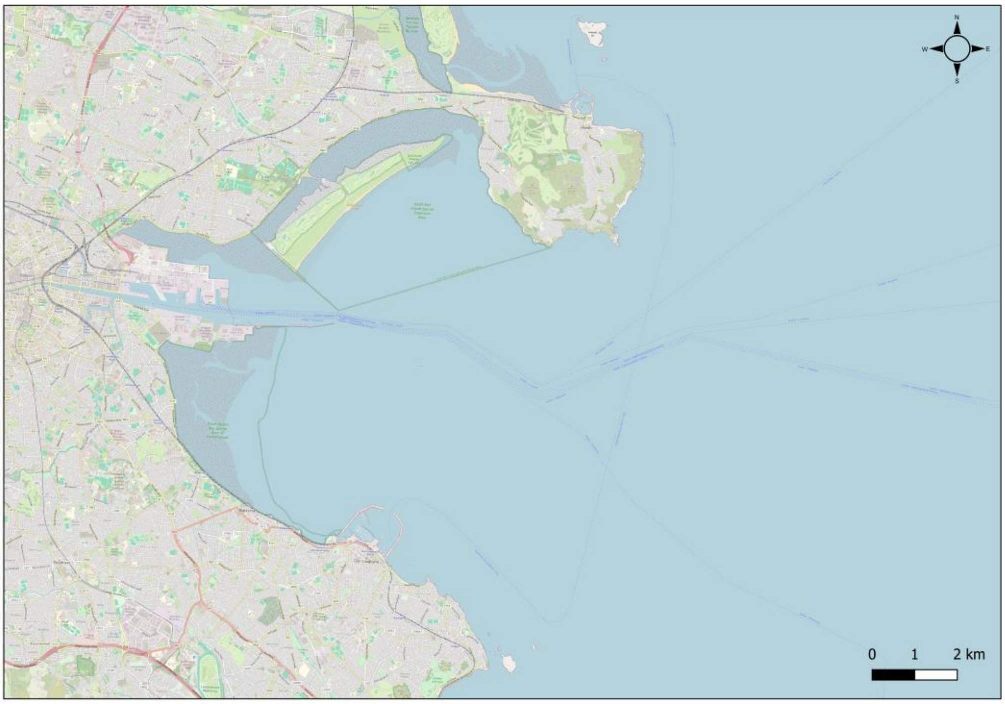


Plate 5 Dublin Bay – present day (OSM, 2025).

3 Impact Assessment

14. The proposed intertidal works, involving excavation, trenching, and cofferdam installation, are expected to cause temporary, localised disturbance to benthic sediments and fauna within the works footprint. Such effects are generally considered to be reversible and spatially confined, particularly in soft-sediment environments. Studies of subsea cable installation, including trenching and ploughing in sandy seabeds, indicate that sediments tend to recover relatively rapidly, and benthic communities can return over time (WSP, 2024). Evidence from monitoring studies of offshore cable installations suggests that in many cases, once trenches are backfilled, depressions infill and sediment structure is re-established within a matter of weeks to months.

15. The scale and duration of the proposed works are small relative to the broader sediment-transport regime of a dynamic intertidal or coastal environment. The total disturbed footprint for all three export cables and associated works in the intertidal zone is c. 60, 600 m² within the South Dublin Bay and River Tolka Estuary SPA, and 40,200 m² within the Dublin Bay SAC; this equates to c. 0.28% and 0.55% of the designated sites, respectively. Accordingly, c. 99.72% of the SPA and 99.45% of the SAC will remain undisturbed, demonstrating that the short-lived disturbance proposed represents a very minor proportion of the available habitat within each designated site.

16. Excavation and trenching activities will also generate short-term, localised increases in suspended sediment concentrations (SSC) within the immediate works area. These elevations will primarily occur during tidal inundation, when redistributed sediments are entrained by incoming flows and dispersed across the foreshore. However, predicted SSC levels remain within the natural variability of Dublin Bay, where background concentrations fluctuate considerably during spring tides and storm-driven wave events. Given the dynamic tidal regime and active wave energy, any SSC increase will be highly transient, dispersing rapidly and returning to baseline conditions within hours to days following cessation of works.

17. Based on the experience of the landfall from multiple offshore cable projects, natural sediment redistribution and reworking by tides and waves typically leads to rapid intertidal/seabed sediment surface recovery. Shallow depressions or minor residual features may persist for longer, particularly in areas of mixed or muddy sediments; however, due to the predominantly sandy composition of the intertidal area in Sandmount, these are anticipated to be highly limited in spatial extent and depth, and will not represent a significant long-term alteration of seabed morphology. For shallower disturbance, such as the removal or displacement of the top 10 - 20 cm of sediment, benthic invertebrate communities have been observed to recover within a few months, with full community recovery, including sediment re-establishment, often projected within one to two years (Newell *et al.,* 2015). Broader reviews of dredging and coastal seabed disturbance in a range of sediment types, from muds to gravels, indicate that recovery in dynamic sandy environments can occur within weeks to months (Newell *et al.,* 2015).

18. Industry-wide reviews of subsea cable installation for offshore wind projects conclude that impacts from cable burial are typically highly transitory, narrow in footprint, and readily reversible, especially in soft-sediment shorelines and seabeds (BOW, 2016; Ørsted, 2019; RWE, 2022). Similarly, regulatory and planning assessments for marine cables and offshore wind developments recognise that construction-phase effects are generally temporary and reversible, provided best-practice installation methods are applied (Scottish Government, 2019).

19. Considering the proposed intertidal and coastal works, the dynamic sedimentary environment of Sandymount Strand with active tidal and wave energy, and the body of evidence which demonstrates intertidal habitats of this nature to recover rapidly, it is evidentially the case that the disturbance footprint will be localised, narrow and only temporary; sediment structure and seabed morphology will tend to naturally re-equilibrate, and benthic infauna and associated communities will recolonise over

time. Full ecological recovery, in terms of sediment structure and benthic community composition, is plausible within several months to a few years.

4 Summary and Conclusions

20. The intertidal works associated with the Codling Wind Park Project will involve temporary excavation, trenching, and a small area cofferdam installation within a dynamic sandy foreshore environment at the Poolbeg Peninsula that shows no evidence of contaminants. This coastline area is already permanently highly engineered, heavily modified and industrialised, with existing port infrastructure, dredged channels, and historic land reclamation works shaping its current from and condition. The disturbance footprint of the proposed works is small relative to the wider intertidal zone, and will be short-lived, with best-practice installation methods applied and reinstatement measures implemented following construction. While the works overlap with designated conservation sites (South Dublin Bay and River Tolka Estuary SPA and the Dublin Bay SAC), the scale and duration of disturbance are considered to be minor, and ecological functions are expected to remain intact. The sandy nature of the sediments, combined with active tidal and wave processes, supports rapid physical recovery and recolonisation of benthic communities. Evidence from similar offshore wind farm / cable projects indicates that recovery of sediment structure and biological communities typically occurs within months. Conservation objectives for the SPA and SAC are unlikely to be compromised, as approximately 99.72% of the South Dublin Bay and River Tolka Estuary SPA and 99.45% of the Dublin Bay SAC will remain undisturbed. Given the resilience of sandy habitats, and the continued availability of extensive undisturbed habitat, providing alternative foraging areas for birds, within both designated sites. Best-practice construction methods and environmental controls, including seasonal restrictions, invasive species management, and noise mitigation, will further minimise potential impacts. Given the pre-existing anthropogenic alterations and the dynamic nature of the foreshore, the intertidal component of the project is considered environmentally acceptable, provided that proposed mitigation and reinstatement measures are adhered to.

5 References

21. Beatrice Offshore Windfarm (BOW). (2016). Alternative landfall cable installation method marine licence application – Environmental Report. (Doc. No. LF000005-REP-1338). Spey Bay / Moray Firth, Scotland. Retrieved from: https://marine.gov.scot/sites/default/files/00516997.pdf [Accessed 12 January 2026].

22. Great Britain. Hydrographic Office (GBHO). (1897). Dublin Bay / published at the Admiralty 20th July 1875 [Map]. American Geographical Society Library Digital Map Collection. University of Wisconsin–Milwaukee Libraries. Retrieved December 3, 2025, from https://collections.lib.uwm.edu/digital/collection/agdm/id/8526 [Accessed 12 January 2026].

23. Newell, R.C., Seiderer, L.J., and Hitchcock, D.R. (1998). The impact of dredging works in coastal waters: a review of the sensitivity to disturbance and subsequent recovery of biological resources on the sea bed. Oceanography and marine biology. 36. 127-178.

24. OpenStreetMap, contributors. (2025). OpenStreetMap.

25. Ørsted. (2019). Preliminary Environmental Information Report (PEIR), Volume 2: Chapter 1 – Marine Geology, Oceanography and Physical Processes. (Doc. No. A2.1; Version A). London, UK

26. RWE (2022). Awel y Môr Offshore Wind Farm – Category 6 Environmental Statement: Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes. (Revision B). Swindon, UK

27. Scottish Government. (2019). SEA of Sectoral Marine Plan for Offshore Wind Energy: Strategic Environmental Assessment Environmental Report. Edinburgh, UK.

28. WSP. (2024). Rampion 2 Wind Farm, Category 6: Environmental Statement, Volume 2: Chapter 6 – Coastal Processes. (Doc. No. 6.2.6; Revision B). London, UK