

# MI Observations on “Eirgrid Tonn Nua Area A off-shore substation MUL240036 application”

- Marine Institute

Version 1 – 29/May/2025

## Summary

- A MUL is sought to undertake Site Investigations to determine most appropriate seafloor cable routing from the designated South Coast DMAP area A to shore.
- Seven potential land fall and cable routes are proposed for which the MUL for survey is sought.
- Surveys are proposed to commence as soon as feasibly possible with a five year licence requested to allow for eventualities, delays and weather windows.
- SIs include primarily geophysical, geotechnical and environmental marine and coastal surveys as well as archaeological surveys.
- No permanent structures will be erected. The geotechnical SIs will be performed from a jack-up barge (JUB) on the approaches to the seven potential landfall zones.
- Two fishing harbours fall within the MUL area.
- Other fishing harbours are in close proximity.
- There are 17 licenced aquaculture sites within the area, growing blue mussel (*Mytilus edulis*), pacific oyster (*Crassostrea gigas*) and manila clam (*Venerupis philippinarum*).
- Some 78 other aquaculture licences sites are in close proximity to the MUL.
- The MUL states that given nature of SIs and their location, there will be no effect on aquaculture.
- While the MUL area overlaps and is in close proximity with fishing activities, prior notice and interaction with the fishing industry of SIs should minimise impacts.
- Depending upon survey techniques, acoustic surveys may impact fish, with research showing increasing effects with increasing energy input. Impacts may be expected to be minimal owing to techniques to be used, brevity of exposure and management of survey operations. To minimise impacts, it is recommended that acoustic SI's are undertaken outside fish spawning times.
- Cumulative impacts are considered and may be expected to be minimised through prevention of SI overlaps.

## Background

The Marine Institute was requested on 21<sup>st</sup> May, 2025 to provide comments/observations on the impact the proposed works might have on the whole of the seafood sector by 30<sup>th</sup> May, 2025.

Note that this application does not concern the development of the wind park itself but site investigations in the form of a number of surveys.

## Comments on Site Investigation activities

The proposed site investigations (SI) consist of a number of surveys to inform engineering design and environmental assessments for two offshore substations (OSS) in the Tonn Nua Area A (identified in the South Coast Designated Maritime Area Plan), potential offshore transmission cable corridors, approaches to seven potential landfall zones, and seven landfall zones to service the south coast DMAP Area A (Figure 1). A five-year duration for the licence is being sought with survey activities commencing as soon as feasible following licence award. A phased programme is intended considering suitable weather and sea conditions.

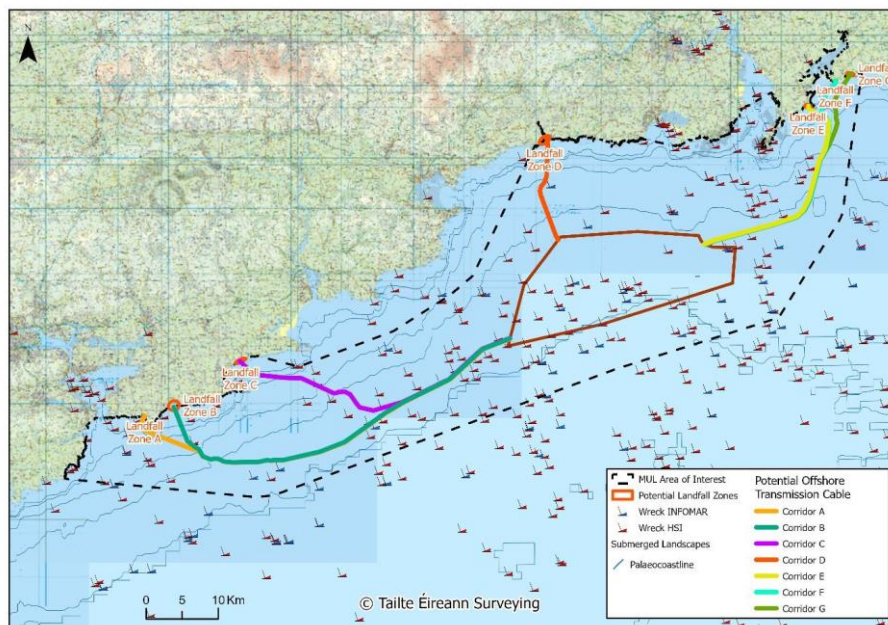
SIs are intended to acquire data towards design development and support consenting and construction phases. Activities proposed:

- Coastal Geophysical Surveys (land-based below the HWM)
- Marine Geophysical Surveys (undertaken from survey vessel(s))
- Coastal Geotechnical Surveys (undertaken on land below the HWM)

- Marine Geotechnical Surveys (undertaken from survey vessel(s) or jack-up barge; JUB)
- Metocean and Marine Mammal Acoustic Device Deployment (deployed by vessel and moored to seabed)
- Coastal Environmental Surveys (land-based below the HWM)
- Marine Environmental Surveys (undertaken from survey vessel(s))
- Archaeological Surveys
- Other Surveys consisting of:
  - Noise Surveys
  - Shipping & Navigation Survey
  - Unmanned Aircraft Systems (UAS)/ drone surveys
  - Aerial Surveys (birds and marine mammals)

Details of these are presented in the application and summarised in Table 1.

No permanent structures will be erected. The geotechnical SIs will be performed from a jack-up barge (JUB) on the approaches to the seven potential landfall zones.



**Figure 1.** South east coast of Ireland with MUL area, indicative locations seven potential transmission cable routes, potential palaeocoastlines and known shipwreck positions (AIMU – Report ref: IE001220-RPS-RP-XX-RP-EN-0003 MUL AIMU).

Two fishing harbours fall within the MUL area: Ballycotton Harbour Co. Cork and Dunmore East Harbour Co. Waterford. Dunmore East being one of five designated National Fishery Harbours, with the second highest figure for fish landings after Killybegs. Other fishing harbours are in close proximity including Cork City Quays, Tivoli, Ringaskiddy and Cobh, Crosshaven, Duncannon and Helvick Harbour and Youghal.

The application lists 17 licenced aquaculture sites within the licence application area, for the production of blue mussel (*Mytilus edulis*), pacific oyster (*Magallana gigas*) and manila clam (*Ruditapes philippinarum*).

There are 18 licenced aquaculture sites within Waterford Harbour adjacent to the MUL area. At Whitehouse Bank, Dungarvan there are 55 licenced aquaculture sites. The closest site in Dungarvan is approximately 8 km from the boundary of the licence application site. There are a further 3 licensed

aquaculture sites to the north. Within Cork Harbour there are 2 licensed aquaculture sites – the closest is 6 km from the boundary of the site investigation licence area.

The MUL application indicates that given the nature of SIs and their location, there will be no effect on aquaculture. The Marine Institute agrees with this conclusion given the location of the 7 potential landfall sites and site investigations likely to occur in such intertidal areas. None of these locations are such that the activities can impact on existing aquaculture sites.

SIs vary in terms of potential effects and spatial footprint. Most aspects of the SI works are relatively routine and are not a major concern. One of the key risks with SI is related to underwater noise created by multibeam/side-scan sonar/sub-bottom profiling/Seismic and geophysical activities like sediment coring.

Some access restrictions, including fishing operations, are likely to result in order for SIs to be undertaken safely. The submission lays out that all necessary notifications of restrictions will be posted as appropriate and necessary. This includes, in relation to fishing activities, Marine notices to be published in advance of the surveys and investigations to warn of the SI activities: where and when, and the vessel call-signs, along with Commissioners of Irish Lights standard navigational safety requirements to positioning, mooring, marking, and lighting of all equipment deployed in the licence area.

Briefing of proposals provided to the national Seafood – ORE liaison group, comprising DECC, ORE offshore industry, Seafood industry including fishing industry representatives, Inshore Fishery Associations and Fish Producer Organisations.

The MUL area – totalling 2,356 km<sup>2</sup> – is listed as including coastal areas from Ringroe, Co. Cork to Ballycrenane Co. Cork, and from west of Bunmahon, Co Waterford to east of Bannow Bay, Co. Wexford. Coastal areas include seven potential landfall zones for the offshore transmission cables listed as:

Landfall Zone	Nearest Townlands	County
A	Ballintra West, Ballintra East, Inch, Lahard	Cork
B	Ballybrangan, Ballycraheen West, Ballyrobin South	Cork
C	Garryvoe Lower, Ballybutler, Ballycrenane	Cork
D	Templeyvrick, Ballynasissala, Bunmahon, Ballynagigla, Knockmahon	Waterford
E	Ramstown, Carnivan	Wexford
F	Bannow	Wexford
G	Haggard, Blackhall, Ballymadder	Wexford

This SI application states that the MUL area is within and adjacent to aquaculture, shellfish, fish spawning and nursery grounds, active fishing grounds and other sensitive fisheries locations. The application states that geophysical and geotechnical investigations may result in some disruption to fishing activities.

As listed in:

- Project Description – Report ref: IE001220-RPS-RP-XX-RP-EN-0001 MUL Project Description
- AIMU – Report ref: IE001220-RPS-RP-XX-RP-EN-0003 MUL AIMU
- Impacts and management measures are described in AIMU Report ref: IE001220-RPS-RP-XX-RP-EN-0003 MUL AIMU.

The application states that an appointed Fisheries Liaison Officer will ensure local fishing organisations are in receipt of Notice to Mariners and aware of proposed SI works ahead of time.

**Table 1.** Summary of site investigations (SI) activities (Table 2.2 in Risk Assessment for Annex IV Species)

Survey Type	Survey Elements	Maximum Quantity (where relevant)
Coastal Geophysical Surveys (land-based below the HWM)	Ground Penetrating Radar (GPR) and/or Seismic Refraction.	n/a
	Topographical surveying techniques including UAS, GPS, GNSS devices	n/a
Marine Geophysical Surveys (undertaken from survey vessel(s))	Multi Beam Echosounder (MBES).	n/a
	Sub-bottom profiler (SBP) including Ultra-High Resolution Seismic (UHRS) survey.	n/a
	Side Scan Sonar (SSS).	n/a
	Magnetometer.	n/a
Coastal Geotechnical Surveys (land-based below the HWM)	Trial Pit Investigations.	42
Marine Geotechnical Surveys (undertaken from survey vessel(s) or jack-up barge; JUB)	Grab sampling (this is the same campaign as the surveys included under the Environmental Surveys).	420 (subtidal)
	Vibrocore testing.	276
	Borehole investigations (including downhole Cone Penetration Testing; CPT and sampling).	21 (inshore) 8 (OSS locations)
	Shallow CPT.	276
Survey Type	Survey Elements	Maximum Quantity (where relevant)
Metocean and Marine Mammal Acoustic Device Deployment (deployed by vessel and moored to seabed)	Deep Drive CPT.	18
	Metocean buoy.	2
	Acoustic Doppler Current Profiler (ADCP).	3
	Marine mammal static acoustic monitoring (SAM)	18 locations (4 SAMS x 4 different locations)
Coastal Environmental Surveys (land-based below the HWM)	Ecological walkover surveys (habitats, bat activity and roose assessment, mammals including otter).	n/a
	Ornithological vantage point surveys.	n/a
	Marine mammal vantage point surveys.	n/a
	Intertidal core sampling survey.	Intertidal cores = 126
Marine Environmental Surveys (undertaken from survey vessel(s))	Drop-down video (DDV) and/or Remotely Operated Vehicles (ROV) survey	n/a
	Grab sampling (this is the same campaign as the surveys included under the Marine Geotechnical Surveys Surveys).	Subtidal = As per geotechnical specification.
	Ornithological surveys (boat-based)	n/a
	Marine mammal surveys (boat-based) including passive acoustic monitoring (PAM).	Monthly surveys for minimum two-year period.
	Water Quality Samples, including Conductivity, Temperature and Depth (CTD) Measurements	n/a
Archaeological Surveys	Intertidal Survey.	n/a
	Marine Geophysical Survey (this is the same campaign as the Marine Geophysical Survey above).	n/a
	Sampling	n/a
	Dive Survey.	n/a
	Wade Survey.	n/a
	Monitoring.	n/a
Other Surveys	Noise Surveys.	n/a
	Shipping & Navigation Survey.	n/a
	Unmanned Aircraft Systems (UAS)/ drone surveys.	n/a
	Aerial Surveys (birds and marine mammals).	n/a

The Natura Impact Statement lists SACs and SPAs and Assessment of Adverse Effects, with no commercially important fish species noted (Atlantic salmon is considered).

Levels and anticipated impacts of noise from acoustic survey techniques, including effects on fish, are described in the **Subsea Noise Technical Report**.

One of the key risks with acoustic survey techniques such as multibeam/side-scan sonar/seismics and geophysical activities like sediment coring is the level of the underwater noise. Responses of animals to underwater noise vary with the distance from source, dose and response, the nature of the sound (i.e. sound pressure and particle motion) and the sensitivity of the receptor fish and shellfish species. There is a continuum of possible responses from death, physical and physiological effects, impaired hearing, masking biologically important sounds, to behavioural responses (Hawkins & Popper, 2017). In general, there are substantial knowledge gaps regarding both the bioacoustics and the responses of animals to sounds associated with pre-construction, construction, and operations of offshore wind (OSW) energy development (Popper, 2022).

It is advised that any similar geophysical/geotechnical surveys that may have been carried out in the vicinity are identified, ensuring that they not coincide with this survey. Furthermore, in light of the intensive nature of the methodologies proposed, it would be important to consider the cumulative effects of these activities in light of the location and timing of similar activities along the southeast coast (and other sites more further afield) and consider the likely longer term effects on commercial and non-commercial fish and shellfish species, other biota and the broader marine ecosystem, if any, and how these effect might be measured?

The Survey areas are in close proximity to the south coast DMAP Area A, for which interactions with commercial fish and fishing activities have been previously reviewed and to minimise such. It is anticipated that the non-terrestrial or close inshore elements of these SIs do have potential to interact with fish and fishing activities. With regard to fishing activities, interference may be kept to a minimum through prior notification of planned survey activities and open communications with fishing industry. Concerning impacts on fish, these may be expected to minimal owing to the short survey periods and surveying practices. It is advisable that acoustic surveys avoid spawning periods to minimise impacts.

### Cumulative Effects

The application does consider aspects of a Cumulative Effects Assessment (CEA) approach following MARA's stepwise approach for to assessing interactions and impacts.

Cumulative impacts from multiple projects were considered. Projects were identified largely from licencing and planning documents.

While noting that CEA is a developing field, there is insufficient evidence to ascertain whether cumulative effects, due to this proposed development, are significant or not.

The Marine Institute recommends that, for this and other such applications, evaluations are reviewed in a wider context of marine planning for Irish waters. Such planning should be supported by predefined CEA – potentially state-led – reviewing all relevant pressures and ecosystem components (sea and land-based). The Marine Institute does not provide an outline here of how this may be done, but is available for further consultation on design of such a programme of work.

It is the view of the MI that during assessment of likely effects, that the licencing body consider the in-combination effects on mobile species (fishes, marine mammals and birds, in particular) that the proposed surveying activities may have with other similar activities likely to occur in the vicinity and beyond. Furthermore, we would consider that wider effects on habitats (outside of licenced area) also be assessed. In particular, it is the view of the MI that such ORE data gathering surveys be carried out in a co-ordinated fashion in order to avoid redundancy of effort and minimise disturbance while also broadening the baseline

of information on habitats and species. In addition, this baseline data will facilitate future assessment of impacts of OREs beyond the footprint of licence/lease areas.

Given the fluid nature of aquaculture licencing it is advised that the licencing body (MARA) confirm the exact location of licenced aquacultures sites prior to making a determination by referring to the Aquaculture viewer at <https://dafm-maps.marine.ie/aquaculture-viewer/>

In relation to cumulative effects with other activities, we draw MARA's attention to Natura assessments, to consider interactions between Natura qualifying interests and aquaculture operations (existing and proposed) that have been carried out nationally and more specifically, in areas adjacent to the proposed application area. These reports can be found at the following link and give an indication of likely aquaculture activities occurring in the general area.

#### [Cork and Waterford Aquaculture AA reports pre-2020](#)

Furthermore, we draw the MARAs attention to fishery risk assessments relating to Natura Qualifying interests that have been carried out nationally and more specifically, on the south and west coasts. These reports can be found at the following link and give an indication of likely fisheries activities occurring in the area in question.

<http://www.fishingnet.ie/sea-fisheriesinnaturaareas/concludedassessments/southandwestcoasts/>

#### References

- Hawkins, A.D., Popper A.N. 2017. A sound approach to assessing the impact of underwater noise on marine fishes and invertebrates, ICES Journal of Marine Science, Volume 74, Issue 3, Pages 635–651, <https://doi.org/10.1093/icesjms/fsw205>
- Popper, A.N., Hawkins, A.D., Thomsen F. 2020. Taking the Animals' Perspective Regarding Anthropogenic Underwater Sound. Trends in Ecology & Evolution, Volume 35, Issue 9, Pages 787-794, ISSN 0169-5347, <https://doi.org/10.1016/j.tree.2020.05.002>