Response to Public Submissions

Summary:	Summary Response document on Sea Stacks Foreshore Licence Application Public Submissions.

ESB Wind Development Limited (Ltd), has applied for a foreshore licence to undertake marine site investigations to inform feasibility assessments and design relating to the Sea Stacks Offshore Wind project to the east of County Dublin and County Wicklow. These site investigation (SI) works include Geophysical surveys, Geotechnical surveys, Metocean surveys, Environmental/Ecological and Archaeological surveys.

A public consultation was undertaken as part of the foreshore licensing process between 23rd December 2021 and 30th January 2022 and 18 responses were received from the following organisations and individuals:

- Submission 1: Howth Whelk Fishers
- Submission 2: Irish Whale and Dolphin Group
- Submission 3: Member of Public
- Submission 4: Adela-Hare Centenary Commemoration Committee
- Submission 5: Cllr. Derek Mitchell
- Submission 6: Augustus Cullen Law on behalf of East Coast Fishers
- Submission 7: Irish South and East Fish Producers Organisation
- Submission 8: Ocean Winds
- Submission 9: Dublin Port Company
- Submission 10: Member of Public
- Submission 11: Member of Public
- Submission 12: Member of Public
- Submission 13: Coastal Concern Alliance - Submission 1
- Submission 14: Coastal Concern Alliance - Submission 2
- Submission 15: Member of Public
- Submission 16: Killiney Bay Community Council
- Submission 17: Member of Public
- Submission 18: NIFA and NIFO

ESB Wind Development Ltd (ESB) welcomes all responses received and addresses each one below either alone or collectively depending on the content of the response.

We would like to highlight that the licence application is for site investigation activities only and any subsequent wind farm development and consenting activities are outside the scope of this application.

1 Responses to Submissions Received

Submission 1: Howth Whelk Fishers

ESB notes the points raised in this submission. A response to the comment is provided in the table below.

Submission Comments	ESB Response
Regarding this application for survey I would like to make following submission. This area is a important area for us for whelk fishing and I'm am afraid this survey will have a negative impact for me to keep running my business. We fish whelk on the [redacted] from Howth.	It is ESB's intention to agree an approach for these SI activities with the relevant fishers and other marine users associated with the Sea Stacks Offshore Wind Project in advance of any such works. ESB is committed to working with individual fishers and also with their representative Producer Organisations and Inshore Fisheries Forums with the objective of ensuring that survey activities can be completed safely and without damage to fishing gear, survey equipment or vessels. Additionally, ESB is developing a Fisheries Engagement and Coexistence Plan and has committed to sharing that with the Fish Producer Organisations for review, comment and input with a view to having a Plan in place acceptable to both entities. It will outline how ESB plans to engage with commercial fishers about the Sea Stacks project throughout the project's lifecycle – from initial assessment, through construction, into operation. Fishers are key stakeholders in any offshore wind farm proposal and ESB is keen to ensure there are mutual benefits from the development of this project. Shared understanding will be essential in achieving this and also in the minimisation of risk to both parties. An Offshore Wind Stakeholder Manager and a Fisheries Liaison Officer (FLO) have been appointed to support the Sea Stacks project. Both of these have been actively engaging with the fishing industry on a face-to-face basis and also in written correspondence. ESB intends to continue this engagement with the fishing community throughout the duration of the project. Commencement of survey activities is subject to Foreshore Licence consent and the availability of surveys vessels, equipment and personnel. Once there is certainty on these factors our objective is to work with the fishing industry to develop and implement a survey programme which minimises the risk of any potential losses through effective planning and coordination of the survey activities.

Submission 2: Irish Whale and Dolphin Group

ESB notes the points raised in the submission by the Irish Whale and Dolphin Group. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
1. Page 15 5.2.2.5 – Auditory Injury – "Southall et al. (2019) does not provide SPLs for non-pulsed sounds" see Southall et al. (2019) page 154, Table 6 for a description of threshold levels for nonimpulsive sounds.	The table referred to (Southall et al. (2019) Table 6) provides Sound Exposure Levels (SELs) for non-pulsed sounds not (Sound Pressure Levels (SPLs). Therefore, the text provided in the Risk Assessment for Annex IV Species as submitted with the Foreshore Licence application remains unchanged.
2. Page 18. 7.1.1. "For all surveys, a monitored zone of 500 m will be employed, i.e. if a marine mammal is observed within 500 m of the sound source ". This is not correct for boomers, sparkers and airguns where a 1000m mitigation zone is required. Boomers and sparkers are considered SBPs (Sub-Bottom Profiliers) but the Irish guidelines regard these as seismic sources. Of course UHRS (Ultra High Resolution Seismic) and seismic borehole are unquestionably seismic.	Boomers and sparkers were categorised under UHRS in this instance (to account for the distinction in the Irish guidelines) and mitigated for accordingly. It was considered that 500 m was an adequate mitigation zone for the type of seismic surveys outlined (electromagnetic sources rather than airguns i.e., not full seismic arrays) as UHRS sparker and boomer equipment has high directionality of sound and operates at a closer proximity to the seabed than true seismic equipment.
3. Page 18 7.1.1 "If the marine mammals do not leave the area, the survey vessel may alter its course to ensure that the animals are outside the monitored zone when the soft start commences. " This appears that if animals are in a survey area breeding or feeding the survey vessel need only move further back to commence survey equipment and then proceed through them. While this is permitted by the guidelines it does constitute a deliberate disturbance under the Habitats Directive Article 12 as follows: Article 12(1) of that directive states: 'Member States shall take the requisite measures to establish a system of strict protection for the animal species listed in Annex IV(a) in their natural range, prohibiting: i. all forms of deliberate capture or killing of specimens of these species in the wild; ii. deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration; iii. deliberate destruction or taking of eggs from the wild; iv. deterioration or destruction of breeding sites or resting places.' Additionally it is an offence under the Irish Wildlife Act (1976) to hunt (chase or drive) or willfully interfere with, disturb, or destroy the resting or breeding place of a protected species. Therefore it is suggested that survey vessels should not be allowed to drive animals from their habitat and that a shutdown is in place to prevent this occurring as suggested.	As detailed in the Mitigation Measures provided in Section 7 of the Risk Assessment for Annex IV Species, as submitted with the Foreshore Licence application, the survey will wait until the animals have left the area before starting ramp-up procedure.
4. Page 18 7.1.2 Ramp-up Procedure. "once the ramp-up commences, there is no requirement to halt or discontinue the procedure at night-time, "Survey activity should, where appropriate, terminate at the end of the line and commence again on new line again with a ramp-up where possible. The lack of a meaningful ramp-up for much of this equipment necessitates a shutdown of equipment for marine mammals within the mitigation zone. Continuous shooting without a demonstrated need for data should be avoided and a mitigation system which allows night time starts is required. In the absence of this the DAHG (2014) guidelines require a shut down effectively if the line change to the next line is greater than 40 minutes	Section 7.1.3.4 of the Risk Assessment for Annex IV Species as submitted with the Foreshore Licence application states that "*Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is 165 - 170 dB re 1 µPa @ 1 m or lower."* The sentence referenced in this comment (Page 18, 7.1.2 Ramp-up Procedure) refers to a single standalone ramp-up, where once begun should visibility be impacted (i.e., weather or daylight) then the ramp-up can proceed – procedures for line

Submission Comments	ESB Response
	changes will still be followed but pre-watch monitoring will utilise Passive Acoustic Monitoring (PAM) equipment.
5. Page 19 7.1.2.1 SBP Surveys – as before this depends on the equipment used according to the guidelines (DAHG, 2014). If Boomer, sparker or airguns the soft start time is 40 minutes, if chirper, pinger, muliti-beam or side scan the soft start time is 20 minutes.	We can confirm that by SBP we are only referring to the pinger or chirper whereas UHRS refers to the boomer and sparker. The pinger/chirper will undergo a 20-minute ramp-up procedure whilst the UHRS including sparker and boomers will require a 40-minute ramp-up procedure. Multi-beam and side scan sonar will not require a ramp-up.
6. Page 19 7.1.3.3 Typo "SPB" should be "SBP". But again the type of equipment being used needs to be clarified. Boomers and Sparkers are considered SBP and if halted for more than 10 minutes then a full pre-watch and soft start is required.	As outlined in Table 5.4, Section 5.2 of the Risk Assessment for Annex IV Species, as submitted with the Foreshore Licence application, Boomer/Sparker have been included with the seismic equipment (in line with DAHG guidelines) whilst SBP only refers to the Pinger/Chirp. Therefore, mitigation for the Boomer/ Sparker includes the 10-minute break in equipment requiring a full pre-watch and ramp-up.
7. Page 19 7.1.3.4. UHRS and Seismic borehole surveys. "Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is 165 - 170 dB re 1 µPa @ 1 m or lower." This line is taken from the DAHG (2014) guidelines but is misleading as it is not possible to have a seismic source below 216 dB re 1 µPa @ 1 m, so this option is not available and best ignored.	We agree with this comment and the equipment will undergo a reduction in energy output but not to the SPL quoted in the DAHG guidelines.
8. Page 19 7.2. Drilling. The requirement of mitigation for drilling is questionable and it is recommended that measurement of sound levels should occur during drilling to assess the need for mitigation.	The Risk Assessment for Annex IV Species as submitted with the Foreshore Licence application, concluded that the potential for lethal, physical and auditory injury for all geotechnical surveys (excluding seismic activities) was negligible and potential for disturbance was trivial. As mitigation measures will be implemented in line with NPWS guidelines it negates the need for sound level measurements to be taken.
9. The survey area includes the Rockabill to Dalkey Island SAC which lists Harbour Porpoise as one of two qualifying interests, but this is not mentioned once in the document. This is a huge oversight. Should a Natura Impact assessment be carried out to assess the impacts on this SAC?	Please refer to the Supporting Information: Screening for Appropriate Assessment (SISAA) and Natura Impact Statement (NIS) as submitted with this Foreshore Licence application where Rockabill to Dalkey Island Special Area of Conservation (SAC) and the associated Qualifying Interest (QI) harbour porpoise has been considered. Impacts on harbour porpoise are also addressed in the Annex IV Risk Assessment report.
10. There are a number of foreshore licences currently under application, or having been approved, which may impact on the Rockabill to Dalkey Island SAC but there is no mention of these potential cumulative impacts. This is a large oversight.	We assume that this comment refers to the Risk Assessment for Annex IV Species as submitted with the Foreshore Licence application. Please refer to the SISAA and NIS as submitted with this Foreshore Licence application where potential in combination impacts have been assessed for the Rockabill to Dalkey Island SAC.
As a general observation the distinctions made between different SBP equipment in the guidelines is not reflected in the document. Boomers and sparkers are treated as seismic, while pingers and chirpers are treated like multi-beam and side scan.	This does not affect the outcome and mitigation is still in line with the DAHG guidelines. SBP includes chirpers and pingers whilst the UHRS includes sparkers and boomers.
It is not clear how the measures will prevent disturbance of protected species, simply starting further back to remove animals from the habitat as suggested, causes inconvenience to the survey, but has the same outcome in displacement of marine mammals from habitat. Whether such a disturbance is trivial or not is impossible to say but some attention should be given to the document produced by	Pre-work searches will negate/reduce the potential for auditory injury. Shutting down/reducing output between survey lines/stations will reduce disturbance. The 5 km suggested effective deterrence range from the JNCC 2020 document is in line with the 5 km effective deterrence range used to calculate the zone of impact around the sound source. Following non-project specific correspondence with the NPWS, it was agreed

Submission Comments	ESB Response
the JNCC (2020) with DAERA and Natural England on disturbance, which suggests a disturbance zone for 5km for harbour porpoise. While less impact than a seismic survey it is hardly trivial.	that the JNCC guidelines "The protection of marine European Protected Species from injury and disturbance: Guidance for the marine area in England and Wales and the UK offshore marine area" would be used to supplement the DAHG guidelines. In this guidance document it states that for the activity to be considered non-trivial "the disturbance to marine EPS would need to be likely to at least increase the risk of a certain negative impact on the species' Favourable Conservation Status (FCS)". The Annex IV risk assessment concludes that < 1 % of the percentage of reference populations for the four more common species (harbour porpoise, minke whale, bottlenose dolphin and Risso's dolphin) has the potential to be affected at any one time. There is negligible potential that the surveys will impact: • The long-term maintenance of a population; and • The natural range of the species. • Reduce the habitat to maintain a species population on a long-term basis. Therefore, the conclusions regarding disturbance are considered appropriate.
It is felt that lack of any apparent knowledge that the survey impacts an SAC with Harbour Porpoise as a qualifying interests, which is now to be subjected to repeated human pressure from survey activity and construction activity for a number of years, renders it unsuitable for approval in its present form. Indeed mitigation within and adjoining the SAC needs to be improved if such activity is to permitted to continue.	The potential impact to the Rockabill to Dalkey Island SAC was addressed within the SISAA and NIS as submitted with this Foreshore Licence application

Submission 3: Member of Public

ESB notes the points raised in this submission. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
Reasons for my objection are: − the proposed site investigation is too big, too close to shore and out of line with good international siting practice for a large-scale offshore windfarm − it is inappropriate and premature for site investigation to be carried out on a site selected by ESB Wind Development, rather than the Irish Government properly defining and managing its offshore resources in the interests of the Irish people and the rich foreshore ecology − the need for Geophysical and Geotechnical Surveys, Oceanographic & Metocean surveys, Environmental/Ecological & Archaeological Surveys all require the disturbance of the wide-ranging ecology of the foreshore. Such pre-emptive site investigation in Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) would render the Maritime Area Planning Bill 2021 null and void − any proposal for such a massive industrial development should be within the context of new foreshore legislation being in place and enforceable prior to site investigation licences being issued. And once in place, being put out to Tender in line with government contracts. Failing this, it allows developers to drive the development agenda rather than the Irish Government managing its resources on behalf of the Irish people	It is normal practice in offshore wind project development to undertake first stage SI over a larger development area than ultimately required in order to identify the site conditions within that area that are most optimal for the infrastructure development considering all relevant criteria. As detailed in the Sea Stacks Offshore Wind Site Investigation Accompanying Report the total area ESB are looking to investigate in order to find an optimal location to site a WTG array considering environmental, technical and commercial criteria is approximately 309km^2 (inside and outside the 12nm foreshore limit). Based on the presently estimated export capacity of the project (≈800MW), the final WTG array development area is likely to be in the order of 160km^2 (subject to detailed layout / energy analysis). The Maritime Area Planning Act 2021 makes provision for the continued processing of Foreshore Licence applications under Section 3 of the Foreshore Act 1933 pending the establishment of MARA. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and this application cannot be submitted until such time as a Maritime Area Consent has been granted by MARA in respect of the area of seabed to which the development proposal relates. Future development consent applications in respect of this site are beyond the scope of this application. This Foreshore Licence application relates to proposed SI works only. These works are temporary and short term in nature. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an Environmental Impact Assessment Report (EIAR) and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. This will include consideration of alternative locations as required. A SISAA and a NIS accompany this Foreshore Licence application in support of the Competent Authority in making its determinations under the Appropriate Assessment process. The information presented in the NIS concluded that following application of suitable mitigation measures the Site Investigation works, either alone or in-combination with other plans or projects, would not have an adverse effect on the integrity of any Natura 2000 site. Any future development consent application for the construction and operation of a wind farm project will be subject to independent assessment by the competent authority in accordance with relevant legislation.

Submission 4: Adela-Hare Centenary Commemoration Committee

ESB notes the points raised in the submission by the Adela-Hare Centenary Commemoration Committee. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
Submission - On the behalf of The Adela-Hare Centenary Commemoration Committee, we wish to make the following observations regarding the application submitted by ESB Wind Development Limited to undertake site investigations at 'Sea Stacks Offshore Wind' situated off the coasts of County Dublin and County Wicklow. These sites investigations include geophysical surveys, geotechnical surveys, oceanographic & metocean surveys and environmental/ecological & archaeological surveys. Background/Shipwrecks- The Adela-Hare Centenary Commemoration Committee was established in 2017 to commemorate the loss of life associated with the sinking of two Dublin Bay vessels in December of 1917, the S.S Hare (Dublin Bay) and the S.S Adela (Holyhead, Wales). The S.S. Hare is one of the shipwrecks that lies within the foreshore licence application boundary area. On the 14th of December 1917, the S.S Hare was torpedoed with the loss of twelve lives. Just two weeks later the S.S Adela was torpedoed with the loss of twenty-four lives. The Adela-Hare Centenary Commemoration Committee included family members of those lost, the local Dublin Port community and historians. It worked in conjunction with Dublin City Council to mark the centenary, and forged links with local authorities in Wales and the German Embassy. The actual commemorative events in 2017 were attended by the Lord Mayor of Dublin, the Lord Mayor of Holyhead, and a representative of the German Embassy in Ireland. Our remembrance service was also expanded to include the S.S William Barkley, the first of the iconic Guinness fleet torpedoed on the 12th of October 1917 with the loss of five lives. It too is another shipwreck that lies within the foreshore licence application boundary area. It is important to note that these vessels still lie on the seabed and in most cases the remains of the crew members lost have never being recovered, and for many families represent the final resting place of their relatives. Attached is a PDF copy of a commemorative publication that our committee published to mark the centenary of the sinking of the S.S Hare and S.S Adela and is entitled 'Within the Seat of War'. This foreshore licence application, if given the go ahead, has the potential to impact on several known and unknown wrecks. We have grave concerns about the scale of the geotechnical and geophysical site investigations to be undertaken and the potential impact these investigations will have on the existing marine archaeology. We would like to draw your attention to the attached publication entitled 'Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects' dated July 2021 which addresses the issue of offshore windfarms and marine archaeology and is a guidance document from a United Kingdom perspective. Internationally there is a train of thought regarding legacy shipwrecks with an emerging viewpoint that shipwreck sites offer a potential to be used as memorials and to be recognised as maritime war graves. Shipwreck sites in which there may be human remains need to be treated with dignity and respect. For descendants of those who were lost at sea and went down with the ships to be found in the study area, these shipwreck sites are perceived as grave sites with emotional and psychological connections going	The submission received pertains to concerns in relation to potential impact on the SS Hare shipwreck as it was understood to be located within the Sea Stacks Foreshore Licence boundary. Following review of the National Monuments Service database (Wreck Viewer | National Monuments Service (archaeology.ie) it is noted however that this shipwreck is located approximately 5.5nm to the northeast of the Sea Stacks foreshore licence boundary and is outside the area where it is proposed to undertake SI works. ESB respects and notes the concerns in relation to the potential for the SI activities to impact on known and unknown wrecks. It is planned that a suitably qualified and experienced underwater archaeologist will be appointed to advise on the findings of the Geophysical survey and in relation to the proposed SI works. Geophysical surveys will be employed prior to intrusive works in both the intertidal and marine area to confirm the exact location of shipwrecks (and other seabed objects or debris). Geophysical surveys are non-intrusive but relevant licences will be sought from the National Monuments Service (NMS) of the Department of Housing, Local Government and Heritage under the National Monuments Acts 1930-2014 as required e.g., any dive survey or metal detection survey shall be licenced under the National Monuments acts 1930-2014. Early engagement with NMS on the scope of the geophysical survey will be undertaken. All works will be carried out in line with NMS requirements and relevant conditions of the Foreshore Licence. Archaeological analysis and interpretation of the geophysical surveys will be submitted to NMS. The interpretation and review of all relevant geophysical data shall be undertaken by an archae-geophysicist/archaeologist with due experience in the interpretation of such survey results in advance of the geotechnical works. The exact location of the intrusive investigation is not yet known and will be informed by the geophysical survey. Once final locations of intrusive activities are known, further discussions including consideration of geophysical surveys and other relevant data sources will be undertaken with NMS to identify any requirements for further mitigation. Prior to undertaking intrusive surveys, ESB will engage and consult with the NMS to determine any necessary buffer/exclusion areas around known sites and potential areas of archaeology. All necessary measures will be undertaken to prevent potential negative impacts.

Submission Comments	ESB Response
back generations. For so many families these wreck sites are all that they have in marking the final resting place of a loved one, whether that be a great-grandfather, a grandfather, an uncle, an aunt, etc. We would strongly urge that in conducting any works associated with the geotechnical and geophysical site investigations that full respect is shown for not just these vessels/shipwrecks but all vessels/shipwrecks in a comparable situation and that all necessary measures are taken to fully survey known and unknown shipwrecks and to prevent their disturbance.	
UNESCO Biosphere Status/Tourism- In 1981 and again in 2015, Dublin Bay was named a biosphere reserve by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in recognition of Dublin Bay's unique ecological habitat and biological diversity. According to UNESCO, a biosphere reserve is an area of land which protects ecosystems while encouraging local development through nature conservation. At the time of designation, the then Minister for Jobs, Deputy Richard Bruton T.D., said he hoped that Dublin Bay's new status would "act as a magnet" for tourists to visit the heart of the Dublin City and learn about the Dublin Bay's unique wildlife. Ireland being an island nation has a coastline that attracts both home and oversee visitors to beaches, cliffs, and long-distance paths every year. Distant views out to sea are very much a part of this attraction. Ireland's coastline provides an especially important economic asset for coastal communities that often rely upon it for tourism related activities. The government recognises the need to revitalise coastal communities and the importance of encouraging new and sustainable enterprises. The coastline and sea views help to attract tourist visitors which in turn support these coastal communities and their economies. Not everyone enjoys the sight of industrial machinery, especially offshore wind turbines, in the seascape. Many would prefer to see the natural landscape unblemished and unspoilt. These geotechnical and geophysical site investigations will no doubt in time will assist the follow on offshore wind farm development and thus it is important to question what will be the impact from a tourism, ecological and maritime perspective.	The comments in relation to the Dublin Bay Biosphere seem to pertain to the future development of an OWF. This Foreshore Licence application relates to proposed SI works only. These works are temporary and short term in nature. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this licence application. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application.
Ecological/Biodiversity- It is our committee's concern that the proposed geotechnical and geophysical site investigations and follow on offshore wind farm development have the potential to cause permanent damage to the fragile sand banks and the associated ecology/biodiversity to be found in the Irish Sea. According to ESB Wind Development Limited the eventual 'Sea Stacks Offshore Wind' development will be located 12km offshore from the shoreline. This is far closer than the norm across the EU when it comes to similar offshore windfarm development projects. The visual impact of offshore wind turbines within 12km of the shoreline would be a significant issue from both a visual and tourism perspective. This investigative foreshore licence application for geotechnical and geophysical site investigations would impact negatively on the following Natura 2000 conservation sites: • Howth Head Coast SPA [004113] • South Dublin Bay and River Tolka Estuary SPA [004024] • North Bull Island SPA [004006] • Dalkey Islands SPA [004172] • The Murrough SPA [004186] • Howth Head SAC [000202] • South Dublin Bay SAC [000210] • North Dublin Bay SAC [000206] • Rockabill to Dalkey Island SAC [003000] • Bray Head SAC [000714] • The Murrough Wetlands SAC [002249]	A SISAA and a NIS accompany this Foreshore Licence application in support of the Competent Authority in making its determinations under the Appropriate Assessment process. The information presented in the NIS concluded that following application of suitable mitigation measures the Site Investigation works, either alone or in-combination with other plans or projects, would not have an adverse effect on the integrity of any Natura 2000 site. Note the Murrough Wetlands SAC has not been included in our assessment as it is outside of the Zone of Influence of the SI works and it was determined that there was no potential for the proposed SI works to impact on the Qualifying Interests of this SAC. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an NIS that will accompany any future consent application. Given the nature and scale of the proposed SI works there is no potential for significant impacts to the Kish and Bray Bank sandbank habitats or on the fish spawning in these areas. The indirect effects of the works on bird prey species (fish) in designated sites has been assessed in the SISAA report which will allow the Department to conclude

Submission Comments	ESB Response
The proposed geotechnical and geophysical site investigations and follow on offshore wind farm development have the potential to cause permanent damage to the fragile sand banks off the east coast of Ireland thus impacting on the above Natura 2000 conservation sites and their associated ecology/biodiversity status. the coastline would be under serious threat from loss of the protection that the sand banks offer the coastline. The disturbance of placing turbine foundations so close to sensitive protected conservation sites and species along the coast has potential to create difficulties when it comes to the installation of cables necessary to get the power ashore. The sea bottom preparation for wind turbine foundations and cable laying activities during the eventual construction phase will cause destruction and disturbance of the local benthic fauna and flora. Indeed, we would like to draw your attention to the attached publication entitled 'Problems and Benefits Associated with the Development of Offshore Wind-Farms' OSPAR Commission 2004 and to pages 15 to 18 in which it summarises possible impacts of offshore wind farms on the different parts of the environment including biodiversity are described in general. The proposed geotechnical and geophysical site investigations and the eventual construction and operation of an offshore wind-farm can potentially have an impact on the hydrography and the geomorphology surrounding the offshore windfarm area. An offshore wind farm may change the water flow and the sediment properties in the area. The resistance from the foundations of wind turbines may influence the current and wave conditions in the wind farm area and this may influence the rate of erosion and deposition of sediment in the area which could have a bearing on the surrounding ecosystem and marine archaeology, in particular shipwreck sites. The potential impacts on local hydrography may also affect the coastal morphology in the area, due to changes in current conditions and erosion and deposition of material.	that there is no potential for significant impacts to arise on these habitats and on the fish spawning areas that exist in this area. The comments in relation to the visual impact pertain to the future development of an OWF. This Foreshore Licence application relates to proposed SI works only. These works are temporary and short term in nature. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this licence application. A detailed Seascape, Landscape, Visual Impact Assessment (SLVIA) and Ecological assessments will be undertaken to assess the potential impacts of the future stages of any project. ESB will consult further with members of the public as the project progresses. The reference to the OSPAR report is noted, however this report is considered to be of its time and does not now reflect technological and engineering advances since its publication. The SI works will not impact upon the surrounding hydrography and geomorphology. The total area of seabed removed or disturbed across the proposed survey area is negligible in the context of the overall spatial extent of the proposed survey area, will be highly localised and any disturbed seabed will backfill naturally. Hydrography & Coastal processes studies which will examine the potential impacts of the construction and operation of any OWF will be undertaken as part of any future EIA process. SI surveys proposed under this Foreshore Licence will inform such studies in terms of understanding seabed sediments and bedforms as well as informing design studies for foundations and other seabed infrastructure.
Consultation Process- We do note that prior to submitting the investigative foreshore licence application, ESB Wind Development Limited, have not undertaken any consultation process specifically with any consenting authorities such as planning authorities, Commission for Energy Regulation, etc., in relation to the scope of this foreshore licence application. This seems very particular, and one wonders if their current investigative foreshore licence application is somewhat premature in purpose. Conclusion -In conclusion, we believe this foreshore licence application and as such should be disregarded as ESB Wind Development Limited have not undertaken any consultation process with any consenting authorities such as planning authorities, Commission for Energy Regulation, etc., which is a legal requirement. These geotechnical and geophysical site investigations will impact on very important NATURA 2000 conservation sites and will undermine the importance status of Dublin Bay as a UNESCO Biosphere. We believe also that the proposed development of offshore wind farms at this time is premature given the lack of an up-to-date legal and governmental framework for such development and should be put on hold until such a framework is in place. We would therefore ask that this foreshore licence application be refused accord	ESB has consulted with the FU in advance of submitting this application and is satisfied that all pre-application requirements have been fulfilled. Beyond this, the Foreshore Regulations, 2011 (S.I. No. 353 of 2011) prescribe the bodies which the Minister may seek observations in respect of this Foreshore Licence application and the list of prescribed bodies includes the Commission for Energy Regulation (now CRU) and relevant local authorities. A SISAA and a NIS accompany this Foreshore licence application in support of the Competent Authority in making its determinations under the Appropriate Assessment process. The information presented in the NIS concluded that following application of suitable mitigation measures the Site Investigation works, either alone or in-combination with other plans or projects, would not have an adverse effect on the integrity of any Natura 2000 site. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an NIS that will accompany any future consent application. The Foreshore Licence application has been made in line with all statutory requirements. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application that will be made in line with the requirements of the Maritime Area Planning Act, 2021.

Submission 5: Cllr. Derek Mitchell

ESB notes the points raised in the submission by Cllr. Derek Mitchell. Individual responses to each of the comments are provided in the table below.

<table>
<tr><th>Submission Comments</th><th>ESB Response</th></tr>
<tr><td>I support this licence application in principle. The documents are written as if this is off Co Dublin. In fact the main visual impact of the completed wind farm is off Co. Wicklow. The impacts and the approach need to be guided by that fact. Impact on onshore vistas; Greystones 59 degrees Arc of View, Bray 63, Killiney 63, Dun Laoghaire 18, Howth 47. The turbines probable area is closest, 12 km, to Greystones, closer than Howth or any Dublin Area. In addition from Greystones the Arc of View of the Dublin Array proposal is 65 degrees and Codling 48 degrees. In combination this would result in a 113 degree line of turbines off Greystones taking up most of the sea view, the worst visual degradation of any town. See chart below for details. These turbines are likely to be 310m tall, much higher than the main visual feature of the area, Bray Head, which is 240m high. The Foreshore licence needs to insist on a gap of at least a 15 degree Arc of View Gap, viewed from Greystones, between the wind farms to reduce the visual impact.
Other aspects, indicate a Dublin only approach;
•Accompanying Report; 1.1 states located East of Co Dublin.
•Section 4 lists all Sailing/Yacht Clubs, all in Dublin but not mention Greystones. There are also many other marine leisure users here.
•Documents not in Greystones Garda station only Bray. Both Codling & Dublin Array displayed in Greystones.
•No presentation made to Greystones Municipal District unlike the other 2 proposals.
•Bray Head is an area of Outstanding National Beauty, a Special Area of Conservation, a Special Amenity Area Order and a proposed National Heritage Area. It is not mentioned in the application unlike such areas in Dublin.
The Foreshore Licence for the survey should strongly encourage use of Greystones Harbour by under 30m vessels. Both Codling & Dublin Array kept some survey vessels in Greystones. There is a need to establish a connection and a benefit to the town in terms of business, jobs and trade if we have to have the turbines imposed in a prominent part of the vista.
Arc of View of Wind Farms from Towns in degrees.
<table>
<tr><th></th><th>Greystones</th><th>Bray</th><th>Killiney</th><th>Dun Laoghaire</th><th>Howth</th><th>Wicklow Town</th></tr>
<tr><td>Sea Stacks</td><td>59</td><td>63</td><td>63</td><td>18</td><td>47</td><td></td></tr>
<tr><td>Dublin Array</td><td>65</td><td>68</td><td>68</td><td>18</td><td>30</td><td>Plus 16</td></tr>
<tr><td>Codling</td><td>48</td><td>32</td><td>26</td><td>0</td><td>Plus 6</td><td>44</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Combined</td><td>113</td><td>100</td><td>94</td><td>18</td><td>53</td><td>60</td></tr>
</table>
Relationship to Dublin Array.
The visual impact of this is hard to separate from that of Dublin Array in view of it location, it is strange that the State is being asked to issue 2 Foreshore Licences for almost the same location.</td><td>The comments in relation to the visual impact pertain to the future development of an OWF. This Foreshore licence application relates to proposed SI works only. These works are temporary and short term in nature. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this application. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. A detailed SLVIA will be undertaken to assess the potential impacts of the future stages of any project including any potential impacts on areas of Outstanding Natural Beauty and Special Amenity Area Order. ESB will consult further with members of the public as the project progresses.
ESB is committed to undertaking all SI and OWF activities while collaborating with coastal communities and appreciate the submission by Cllr. Mitchell and the opportunity to speak with him in relation to the application and any future OWF.
A meeting was held with Cllr Mitchell in January 2022 at which next steps in relation to future representation at the relevant Municipal Districts was discussed. The documentation that accompanies the application refers to the fact that the Foreshore Licence site is located to the east of County Dublin and County Wicklow. However, though the list of stakeholders in Section 4 of the Accompanying Report is by no means exhaustive, we appreciate the comments of Cllr. Mitchell and will endeavour to include additional relevant Wicklow stakeholders in any future documentation.
Bray Head SAC is designated for two terrestrial habitats, Vegetated Sea cliffs of the Atlantic and Baltic coasts [1230] and European dry heaths [4030] which have no potential to be affected by the proposed SI works and therefore has not been included for assessment in the accompanying reports.
The use of Greystones Harbour (or any other port / harbour) as a base for survey vessels will be determined in agreement with the survey contractor(s) awarded to undertake the works and by the nature of the SI activity to be carried out (i.e., in terms of vessel size and type, etc.). ESB will not be imposing the use of a particular harbour for survey works. The proposed array area of search (AoS) for Sea Stacks OWF is to the east of the Dublin Array project and does not share the same footprint. There is an overlap in the cable corridor area of search for Sea Stacks and Dublin Array.</td></tr>
</table>

Submission Comments	ESB Response
Cable Survey routes. The plan is to survey cable routes into Dublin. The benefit of 'Green power' should be used to help Wicklow in view of so much of the turbines being off Co.Wicklow. At NewtownmountKennedy, by the 230kv ESB line, there is full planning permission for a data centre which probably has no grid connection offer. A route should be surveyed there for the cable. That site could also be planned to have emergency generating facilities. This would provide an economic benefit to the area in compensation for the visual loss. **General.** Windfarms encounter local resistance in very many communities, including loud campaigns against them in Wicklow and other counties. Previous thermal power stations had major local benefits including jobs, trade, substantial rates to provide local services and giving the communities a sense of purpose. This is lacking in offshore wind which will provide few jobs, except where the base is, but will have a large visual effect on a wide area. Communities need to feel connected to it, need to see the benefit locally from the particular wind farm and be persuaded to accept it, even like it. A sense of ownership not imposition is needed. This is best done through local involvement especially in the early stages through the planning and building phases. I represent Greystones, Kilcoole & Newcastle with about 30,000 population, most of whom will see the turbines. About 1,000 people use boats for leisure. 500 or more swim in the sea regularly and 1,000s walk beside it. About 5 people, including skipper & crew, are commercial fishers. The needs of this very small group should not distort the consultation and benefits to be given to the local population. The Sea Stack wind farm is near the centre of demand for electricity and thus economical. Consequently they are near to and will be seen by large numbers of people unlike most on shore ones which are remote. The towns of Greystones & Bray have invested much in creating promenades, boardwalks and harbours, it is very much a central part of their offering. This proposal must not damage that.	Ultimately the connection point to the national grid will be decided by EirGrid and this will depend on the considerations such as the cost of connection, network reinforcements required to accommodate the connection and available network capacity. There are currently Phase 1 offshore wind farms (Arklow Bank & Codling) which are considering connections to the national grid in Co. Wicklow. If these projects proceed to their expected full capacity this would have a significant impact on the available capacity of the grid in the area, without significant network reinforcements. ESB has commenced a stakeholder and community engagement programme as part of our preparation activities associated with any future consent application for an OWF project. During this consultation programme we will be inviting input from interested parties in relation to the design and environmental assessment of the proposed offshore and onshore OWF infrastructure. ESB will work in collaboration with communities to ensure that those most impacted have adequate opportunity to benefit and feed into the delivery approach for any future community benefit fund. Information relating to the proposed Sea Stacks Offshore Wind project will be updated on the project website, at the following address, www.seastacksoffshorewind.ie as the project progresses. Additionally, a virtual public consultation room on the Sea Stacks project was launched on 26th April 2022 and remained open until 6th June 2022. It provided up-to-date information on the project and offered an opportunity for interested parties to provide feedback and register to be informed as the project progresses. This was the first of what will be a series of virtual consultations by ESB on the project.

Submission 6: Augustus Cullen Law on behalf of East Coast Fishers

ESB notes the points raised in the submission by Augustus Cullen Law on behalf of East Coast Fishers. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
Primary Concern -We have been retained by the fishermen whose names and vessels are set out [Above] fishermen primarily from the East coast Sea Stacks, Dublin Array, Kish ,Wicklow, and Arklow area. Our clients are increasingly concerned at the far reaching proposals for wind farms in the Irish Sea. They see major lacunae and neglect in the approach of the sponsoring companies to their opportunity, income and livelihoods in fishing in the Irish Sea. National policy implications The nature and extent of this application and related adjacent applications by other Wind Farm Companies are of such a scale that a comprehensive framework is required if these developments are to proceed in a manner consistent with the interests and constitutional rights of traditional fishermen, navigation and the community generally. The development of wind energy is important strategically and economically. It requires an coherent and joined up approach which gives due regard to the interests not just of wind power developers and the exigencies of energy planning, but also to the impacts on the marine environment, on fishing activity and the livelihoods of the fishermen who have traditionally made their livelihood from fishing in the area. The following issues arise: 1. Nature and extent of the applications 2. Stages of Development: surveys, construction, development and operation. 3. Impact on fishers - fisheries impact assessments 4. Impacts on Environment 5. Exploitation of marine resources. **1. Nature and extent of applications-**The applications for foreshore licences cover substantial areas in the immediate vicinity of the East Coast of Ireland and in particular in this application Sea Stacks, Dublin Array , Bray Banks and Kish. It is also clear that significant areas of the Exclusive economic zone outside the foreshore area may be absorbed or impacted by wind farms. They are included in this geotechnical surveys. If the true impact of these developments is to be assessed, then it should not be done on a piece meal basis, but it should be done in an integrated way. This will involve both the Foreshore Acts 1933 as amended and the Continental Shelf Acts. It appears that some of the proposed development and surveys may extend beyond the Foreshore and into Ireland's exclusive economic zone on the Continental Shelf and require careful statutory processes to avoid an ultra vires situation. It must take into account the MARA Act and National and EU policy documentation and Marine Spatial Plans **2. Stages of Development-**The proposed developments will have different impacts as they progress. It is necessary to distinguish four stages as follows (a) the surveys stage, (b) the physical planning stage, (c) development stage and construction, and (d) the operating stage. It is suggested that a coherent and consistent approach to the each of these stages should be mapped out, so that all those concerned and affected by these major developments are in a position to take an informed view. In what follows below we concentrate on the fisheries and environmental aspects	In terms of the points raised on national policy implications, these points seem to be addressed to the State. **Nature and extent of applications** It is normal practice in offshore wind project development to undertake first stage SI over a larger development area than ultimately required in order to identify the site conditions within that area that are most optimal for the infrastructure development considering all relevant criteria. As outlined in application documents and drawings the foreshore licence has been sought for SI works within the 12nm limit only. The ultimate project area extends beyond the 12nm foreshore limit. If and when additional permissions for investigation works for the area beyond the 12nm limit are required, and a process is in place to seek consent for areas outside the 12nm limit, those will be sought. **Stages of Development** This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. **Impacts on fishers** ESB is committed to working with individual fishers and also with their representative Producer Organisations and Inshore Fisheries Forums with the objective of ensuring that survey activities can be completed safely and without damage to fishing gear, survey equipment or vessels. Additionally, ESB is developing a Fisheries Engagement and Coexistence Plan and has committed to sharing that with the Fish Producer Organisations for review, comment, and input with a view to having a Plan in place acceptable to both entities. It will outline how ESB plans to engage with commercial fishers about the Sea Stacks project throughout the project's lifecycle – from initial assessment, through construction, into operation. Fishers are key stakeholders in any offshore wind farm proposal and ESB is keen to ensure there are mutual benefits from the development of this project. Shared understanding will be essential in achieving this and also in the minimisation of risk to both parties. An Offshore Wind Stakeholder Manager and a FLO have been appointed to support the Sea Stacks project. Both of these have been actively engaging with the fishing industry on a face-

Submission Comments	ESB Response
3. Impacts on fishers. -Of critical concern to us is that the current daily users of the Irish Sea, the fishermen we represent, who use it as a workplace have not been consulted adequately in the process to date. Their concerns relate to the impacts of each of the stages of large-scale development identified in paragraph 2 above. These impacts concern (i) the potential loss of opportunity to fish, (ii) the loss of income and, (iii) ultimately the loss of livelihood. If these developments are to proceed in a manner consistent with established rights of local fishers, it is imperative that the agencies of the state ensure that mechanisms are put in place to vindicate the fisher's rights. We believe that inter alia, this requires an independent assessment of the impacts in paragraph 3 on fishers at each of the stages mentioned at paragraph 2. We believe that to expedite development the most effective means would be to put in place a mediation process to compensate for those losses at each stage. Ideally a national strategy and framework would be negotiated and agreed.**4. Impacts on the environment. -**A major consideration in assessing these applications must be evaluation of the likely impact of developments of this scale on the spawning beds and fishery grounds in the area being assessed for proposed development. It is suggested that the parameters of the exploratory work should be in partnership with the existing users, and not independently of them and their ongoing activities. Our fisher client report to us that they catch since the last RWE survey is down 40% to 70% . This devastating damage to whelk and other fish stocks since the last survey needs to be independently investigated . Our fisher clients firmly believe this reduction is a consequence of the last RWE survey. Our clients are willing to liaise with the evidence of their reduced turnover with an investigation by you. Our client's experience is that after each sonic survey the whelk disappear from the surveyed area for at least 2 years. The loss and damage from construction and operation stage is likely to be far greater. Our clients experience of the existing underwater power cables is that there is no fish life within a half mile of each side of the existing power cables. When Turbines are constructed safety regulations and 4.5 knot tides make it too dangerous for fishermen to operate near or between turbines. Evidence of the decline of fish stocks caused by the surveys is the reduction of the fish factories (Sofimar and Errigal) from 7 days per week to 5 days per week.**5. Exploitation of wind resource. -**The offshore wind resource is a national marine resource in much the same manner as fish or hydrocarbons. It therefore raises issues regarding exploitation and distribution of benefit. Proposal for a way forward. We have identified the following as critical: 1. Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 envisages maritime spatial planning as a cross-cutting policy tool enabling public authorities and stakeholders to apply a coordinated, integrated and trans-boundary approach. At the core should be a national strategy, a National Marine Spatial plan, drawn up in consultation with the competing economic interests, and those effected by the possible or probable Marine development. Members of the public should be afforded the opportunity to input and	to-face basis and also in written correspondence. ESB intends to continue this engagement with the fishing community throughout the duration of the project. Commencement of survey activities is subject to Foreshore Licence consent and the availability of surveys vessels, equipment and personnel. Once there is certainty on these factors our objective is to work with the fishing industry to develop and implement a survey programme which minimises the risk of any potential losses through effective planning and coordination of the survey activities. In terms of the points raised on mechanisms, these points seem to be addressed to the state. **Impacts on the environment** A number of the proposed survey techniques are intrusive in nature, these include, boreholes, vibrocores, cone penetration tests (CPTs), ecological grab samples and buoy deployments. However, the footprint of these activities is limited and in total results in a temporary disturbance of a maximum area of circa 0.011 hectares (ha) across the Foreshore Licence area (30,461 ha). Given the negligible volumes of sediments being extracted and practically zero spilt during sediment sample extraction there will be negligible impacts on shellfish from these activities particularly when natural sediment mobilisation and deposition would be of several magnitudes greater than the sediments disturbed from SI activities. Potential Impacts to whelk arising from the proposed survey work are considered to be negligible. While there is little information on the effect of noise on shellfish species, the absence of gas-filled cavities such as those possessed by marine mammals and some finfish, means that there is no mechanism for them to detect pressure changes associated with sound waves. Studies have however indicated that some shellfish species may be able to perceive noise through particle motion, including species such as whelks, mussels, crab and lobster (Wale, 2017;[1] Edmonds et al., 2016[2;] Myrberg, 2001[3)]. Whelk do not possess any anatomical adaptations to perceive underwater noise in any way other than via particle motion, and there is no evidence to suggest that whelk are in any way sensitive to this impact. There are a number of ecological field studies which compare mortality on a range of invertebrates, including scallop, lobster and clam at sites where seismic survey has occurred which conclude that there is no evidence of increased mortality due to exposure to noise. (Parry et al., 2002[4]; Harrington et al., 2010[5] ; Payne et al., 2007[6] ;

[1] Wale, M, (2017). The Effects of Anthropogenic Noise Playbacks on Marine Invertebrates. PhD Thesis. Edinburgh Napier University, 259 pp.
[2] Edmonds, N.J., Firmin, C., Goldsmith, D., Faulkner, R., Wood, D., (2016). A review of crustacean sensitivity to high amplitude underwater noise: Data needs for effective risk assessment in relation to UK commercial species. Marine Pollution Bulletin. 108, DOI: 10.1016/j.marpolbul.2016.05.006.
[3] Myrberg, A. (2001). The Acoustical Biology of Elasmobranchs. Environmental Biology of Fishes. 60. 31-46. 10.1023/A:1007647021634.
[4] Parry, G., Heislers, S., Werner, F., Asplin, D., Gason, H. (2002). Assessment of environmental effects of seismic testing on scallop fisheries in Bass Strait. Report number: 50. Affiliation: Marine and Freshwater Resources Institute.
[5] Harrington, J.J., McAllister, J., Semmens, J.M., (2010). Assessing the Short-Term Impact of Seismic Surveys on Adult Commercial Scallops (Pecten fumatus) in Bass Strait. Tasmanian Aquaculture and Fisheries Institute, University of Tasmania.
[6] Payne, J., Andrews, C., Fancey, L., Cook, A., Christian, J. (2007). Pilot Study on the Effects of Seismic Air Gun Noise on Lobster (Homarus americanus). Canadian Technical Report of Fisheries and Aquatic Sciences No. 2712.

Submission Comments	ESB Response
comment on any draft plan. The adoption of such approach would be a matter for government, as well as EU level, much as the County Development Plans are a matter for local authorities. Such an approach could consider in a holistic way, not just the distribution of economic benefits, but also environmental impacts, the impacts on fishing communities, impacts on Navigation, the impacts of exclusion zones and so forth. 2. Financial and compensatory arrangements in relation to the short, medium and longer term should be independently assessed and developed to address the loss of opportunity to current economic players , and in particular fishermen for their loss of opportunity during exploratory work, and their loss of income during development, and any loss of livelihood consequent on operation of the wind projects. It is our clients' sincerely held view that their traditional fishing industry, particularly whelks, crabs and lobsters will cease to exist because these fish stocks will be wiped out. Their traditional livelihoods will be ended. The new wind industry will displace and destroy this traditional whelk, crab and lobster fishing industry. Such displacement and destruction is not authorised by Marine Spatial Plan but unless duly considered it will happen by stealth and neglect. Any good wind developer must be asked as part of their survey application be asked to take on board the likely demise of this fishing industry. 3. Appropriate environmental studies should be identified in conjunction with fishers and scientists and concluded before embarking of elements of these projects which might have unassessed impacts. **Conclusion -**It is of concern to our fishing clients that consents are being considered and granted on a piecemeal basis without due consideration for our clients' industry interests as stakeholders in the Irish Sea. The projects now being contemplated involve a major incursion into the Irish Marine area. As such it would be appropriate to agree an overall approach and principles. A collaborative consultative process with the fishers being impacted could be used to guide developments and take proper and timely account of impacts, and avoid the dislocation and delays which failure to involve the affected fishermen will trigger. On behalf of our fishers clients, we would ask to be included in a meaningful process in relation to the impacts on our clients, with a view to a mediated resolution of the income and opportunity issues which these proposed developments raise for our clients. There is a parallel between the manner in which it was necessary to articulate a policy in relation to offshore hydrocarbon exploration. It is pointed out that the environment and economic implications of wind power development could be at least as significant - possibly even more so. This is an opportunity for the relevant Departments to take a leadership role and balance and mediate a pragmatic co-existence relationship and financial framework between the fishermen and the Windfarm developers.	Day et al.,2016[7]; La Bella et al., 1996[8]). In addition, studies of catch rate and abundance of shellfish species between sites where seismic activity has occurred and those where it has not, indicate no differences in catchability (Wardle et al., 2001[9] ; Parry et al., 2002[4]; Christian et al., 2003[10] ; Parry and Gason, 2006[11] ; Courtenay et al., 2009[12]). It should be noted that the surveys proposed as part of this Foreshore Licence application emit sound at a lower magnitude than the seismic surveys studied. The potential for adverse effect as a result of physical disturbance will be similarly limited, particularly when the resilience of this species is considered and that survey activity (such as benthic and geotechnical) impacts will be highly localised and occur over relatively small spatial and temporal scales. Even when considering cumulative effects associated with third party SI's the amount of sediment disturbed for redeposition would be negligible particularly when considering overall sediment transport within western areas of the Irish sea which has been calculated at up to 35% of sediments are mobilised per year[13] As stated above Fishers are key stakeholders and ESB is keen to ensure there are mutual benefits from the development of this project. Shared understanding will be essential in achieving this and also in the minimisation of risk to both parties. **Exploitation of wind resource** The proposals appear to be addressed to the State rather than to ESB. This Foreshore Licence application relates to proposed SI works only. These works are temporary and short term in nature. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this application. Specifically having regard to the request for appropriate environmental studies to be undertaken, the Foreshore Licence application was informed by environmental assessments, Risk Assessment for Annex IV species, SISAA and a NIS. This application will be subject to a comprehensive evaluation undertaken on behalf of the Minister and his Department and therefore is an independent assessment. **Conclusion** The aspects raised in the conclusion have been dealt with in detail above.

[7] Day, R.D., McCauley, R.D., Fitzgibbon, Q.P., Hartmann, K., Semmens, J.M. (2016). Assessing the impact of marine seismic surveys on southeast Australian scallop and lobster fisheries. Fisheries Research and Development Corporation, University of Tasmania, Hobart, FRDC 2012/008.

[8] La Bella, G., Cannata, S., Froglia, C., Modica, A., Ratti, S., Rivas, G. (1996). First Assessment of Effects of Air-Gun Seismic Shooting on Marine Resources in the Central Adriatic Sea. 10.2523/35782-MS. Conference: SPE Health, Safety and Environment in Oil and Gas Exploration and Production Conference, pp227-238.

[9] Wardle, C.S., Carter, T.J., Urquhart, G.G., Johnstone, A.D.F., Ziolkowski, A.M., Hampson, G., Mackie, D. (2001). Effects of seismic air guns on marine fish. Continental Shelf Research, Volume 21, Issues 8–10. pp1005-1027. ISSN 0278-4343. https://doi.org/10.1016/S0278-4343(00)00122-9.

[10] Christian, J.R., Buchanan, R.A., Mathieu, A., White, D., Thomson, D.H. (2003). Effect of seismic energy on snow crab (Chionoecetes opilio). Environmental Research Funds Report No. 144. Calgary. 106 p.

[11] Parry, G.D., Gason, A. (2006). The effect of seismic surveys on catch rates of rock lobsters in western Victoria, Australia. Fisheries Research, Volume 79. Issue 3, pp272-284. ISSN 0165-7836. https://doi.org/10.1016/j.fishres.2006.03.023.

[12] Courtenay, S., Boudreau, M., Lee, K. (2009). Potential Impacts of Seismic Energy on Snow Crab: An Update to the September 2004 Peer Review. Publisher: Environmental Studies Research Funds Report No. 178.

[13] Coughlan, Mark & Guerrini, Marco & Creane, Shauna & O'shea, Michael & Ward, Sophie & Van Landeghem, Katrien J.J. & Murphy, Jimmy & Doherty, Paul. (2021). A new seabed mobility index for the Irish Sea: Modelling seabed shear stress and classifying sediment mobilisation to help predict erosion, deposition, and sediment distribution. Continental Shelf Research. 229. 104574. 10.1016/j.csr.2021.104574.

Submission 7: Irish South and East Fish Producers Organisation

ESB notes the points raised in the submission by Irish South and East Fish Producers Organisation. A response the comments is provided in the table below.

Submission Comments	ESB Response
As a representative of the fishing industry which is by far the most adversely affected sector in the development of offshore wind energy. I am asking you to make as a condition of any foreshore license granted that the fishing industry should be consulted at every stage of the survey and development process.	The comments appear to be addressed to the Department of Housing, Local Government and Heritage rather than to ESB. ESB however notes the points raised in this submission and will endeavour to consult with the fishing industry at every stage of the process.

Submission 8: Ocean Winds

ESB notes the points raised in the submission by Ocean Winds. No specific response is provided by ESB in relation to this submission. ESB are also open and willing to engage with DHLGH, DECC and any other relevant Licence / Leaseholders and others as may be relevant.

Submission 9: Dublin Port Company

ESB notes the points raised in the submission by the Dublin Port Company. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
Introduction This submission from Dublin Port Company (DPC) to the ESB Sea Stacks Foreshore consultation report is intended to positively contribute to maintaining safe and efficient access by vessels to Dublin Port. Dublin Port is the primary route for the movement of goods into and out of Ireland. Dublin Port occupies c. 260 ha. of land in Dublin City and also controls c. 44 ha. of land at St. Margaret's, County Dublin, where the Dublin Inland Port is located. **Significance of Dublin Port** ***Trans-European Network for Transport*** Dublin Port is a core port on the Trans-European Network for Transport (TEN-T) network and a designated node on the North Sea-Mediterranean Core Network Corridor. Development of the TENT is supported by means of grant aid and financing through the European Investment Bank. Infrastructural investments at the port being implemented through inter alia the Alexandra Basin Redevelopment Project (Board Ref. PL 29N.PA0034) and the MP2 Project (Board Ref. PL29N.304888) will help to future-proof the port and provide for increased capacity. These projects are consistent with the objectives of TEN-T for the North Sea-Mediterranean Corridor and the designated role of Dublin Port. ***National Ports Policy*** National Ports Policy 2013 is the statement of national policy underpinning the development and operation of Ireland's ports. Ports are divided into Ports of National Significance (Tier 1), Ports of National Significance (Tier 2) and Ports of Regional Significance. Within the Irish Ports Policy, Dublin Port is a Port of National Significance (Tier 1). Tier 1 ports are designated as such where they are responsible for 15% to 20% of overall tonnage through Irish ports and they have clear potential to lead the development of future port capacity in the medium and long term, when and as required. Three ports are included in the TEN-T core network: Dublin, Cork and Shannon Foynes. These ports are also identified in National Ports Policy as Ports of National Significance (Tier 1). The policy document states: "The continued commercial development of these three Ports of National Significance (Tier 1) is a key objective of National Ports Policy." (page 25) Referring specifically to the Dublin Port Masterplan, National Ports Policy states: "The Government endorses the core principles underpinning the company's Masterplan and the continued commercial development of Dublin Port Company is a key strategic objective of National Ports Policy". (page 25) The planning, financing and development of large scale infrastructure projects, such as major port capacity proposals, requires significant organisational, operational and financial resources. It is important that, in the State commercial ports sector, bodies bringing forward significant port capacity developments have the resources required to ensure that the State's and the public's interest is protected and enhanced. It is the Government's position that those ports considered to be of national significance must be capable of the type of port capacity required to ensure continued access to both regional and global markets for our trading economy. In this regard National Ports Policy states that: "The provision of adequate and efficient capacity into the future is a crucial Government strategic objective." (page 43) The Dublin Port Masterplan 2040 (Reviewed 2018) envisages the capacity of the port being increased to its ultimate level of 77 million gross tonnes per annum over the next 20 years. ***Project Ireland 2040*** Project Ireland 2040 is the government's long-term overarching development strategy for the state. The plan seeks to align investment in public infrastructure with a well-thought-out and defined development strategy. The National Development Plan (NDP) and the National Planning Framework (NPF) combine to form Project Ireland 2040. The NPF sets the vision and strategy for the development to 2040 and the NDP provides enabling investment to implement the strategy. National Strategic Outcome 6 "High-Quality International Connectivity" of the NDP seeks to target continued investment in port and airport connections to the UK, the EU and the rest of the world. Given that Ireland is an island this is considered by the NDP to be integral to underpinning international competitiveness. It is also central to responding to the challenges as well as the opportunities arising from Brexit. It is envisaged by the NDP that investment will strongly support the continued development and improvement in Ireland's ports and State airports by the relevant responsible commercial State Owned Enterprises (SOEs), consistent with sectoral priorities already defined through National Ports Policy and National Aviation Policy. The NDP continues that significant investment in Ireland's	ESB acknowledges the significance of the port and will work with and continue to liaise with Dublin Port Company to ensure the maintenance of safe and efficient access by vessels to Dublin Port. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this licence application. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. Consideration of all relevant national plans and policies such as the National Ports Policy and the Dublin Port Masterplan will be considered in any future development of this project.

Submission Comments	ESB Response
airports and ports will play a major role in safeguarding and enhancing Ireland's international connectivity which is fundamental to Ireland's international competitiveness, trading performance in both goods and services and enhancing its attractiveness to foreign direct investment. The NDP clearly states that the importance of this objective cannot be understated in the context of the UK's exit from the EU in 2019. The NPF highlights that Ireland's port and shipping services play an important role as 'enablers of economic growth' and are critical infrastructure for international trade, with over 90% of our international trade moving by sea. The NPF confirms that as an island nation: "We depend on the quality and efficiency of our ports to a far greater extent than many of our trading partners. To maintain economic growth, we must be capable of delivering additional port capacity in a timely and predictable manner". (page 94) Given Ireland's island nature, infrastructure is based on the effectiveness of airport and port connections. The NPF acknowledges National Ports Policy and the national hierarchy or tiering of ports recognising the long-term international trend in ports and shipping towards increased consolidation of resources in order to achieve optimum efficiencies of scale. This, the NPF notes, has knock-on effects in terms of vessel size, the depths of water required at ports and the type and scale of port hinterland transport connections. The NPF confirms that the role of Tier 1 ports (which include Dublin Port) will be considered in tandem with long-term infrastructural requirements as part of the Regional Spatial and Economic Strategy and Metropolitan Area Strategic Plan processes through National Policy Objective 40 which states: "Ensure that the strategic development requirements of Tier 1 and Tier 2 Ports, ports of regional significance and smaller harbours are addressed as part of Regional Spatial and Economic Strategies, metropolitan area and city/county development plans, to ensure the effective growth and sustainable development of the city regions and regional and rural areas". (page 103) A key objective to enable growth of Dublin and nationally is infrastructure pertaining to Dublin Port looks towards: "Facilitating the growth of Dublin Port through greater efficiency, limited expansion into Dublin Harbour and improved road access, particularly to/ from the southern port area". (page 57&142) ***Regional Spatial and Economic Strategy for the Greater Dublin Area 2019-2031*** The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region including the Metropolitan Area Spatial Plan (MASP) for Dublin was published in June 2019. Prepared in accordance with the NPF, the RSES sets the context for each local authority within the region to develop county and city development plans in a manner that will ensure national, regional and local plans align. With respect to the profile of the region the RSES notes that the Dublin region is the main global gateway to Ireland, with Dublin Airport one of the fastest growing in Europe and continued growth both in the import and export of goods through Dublin Port. The RSES states that as Ireland's only international city of scale, Dublin acts as the global gateway to Ireland and its influence extends well beyond its administrative boundaries. Growth Enablers for Dublin City and Metropolitan Area include: "Protect and improve access to the global gateways of Dublin Airport and Dublin Port for the Region and to serve the Nation, and safeguard and improve regional accessibility and service by rail, road and communication, with a key focus on the Dublin-Belfast Economic Corridor." (page 34) To achieve the vision the MASP identifies a number of Guiding Principles for the sustainable development of the Dublin Metropolitan Area. With respect to Dublin Port these include: "Dublin as a Global Gateway – In recognition of the international role of Dublin, to support and facilitate the continued growth of Dublin Airport and Dublin Port, to protect and improve existing access and support related access improvements." (page 101) The RSES repeats the NPF National Strategic Outcome 40 and recognises the crucial role that the provision of National Strategic Outcome 6 High-Quality International Connectivity has for overall international competitiveness and addressing opportunities and challenges from Brexit through investment in our ports and airports, in line with sectoral priorities already defined through National Ports Policy and National Aviation Policy and signature projects such as the second runway for Dublin Airport and major redevelopment at Dublin Port. The RSES recognises that Dublin Port is one of five major ports classified as Tier 1 / Tier 2 ports in National Port Policy, is categorised as a core port in the EU's TEN-T network, is a critical national facility, is a key economic driver for the region and the nation and is an i ***Dublin Port Masterplan 2040 (Reviewed 2018)*** The Dublin Port Masterplan 2040 (Reviewed 2018) envisages the capacity of the port being increased to its ultimate level of 77 million gross tonnes per annum over the next 20 years. The continued growth in the volume of trade and the limited capacity within Dublin Port lands at waterside mean there is a need to utilise innovative approaches to facilitate port related activities.	

Submission Comments	ESB Response
DPC is delivering a number of significant upgrades to Dublin Port facilities at the c. 260 ha. lands in Dublin City in order to deliver increased capacity in accordance with the Masterplan including: The Alexandra Basin Redevelopment Project - ABR Project - which has been consented and is under construction (Ref. PL29N.PA0034); and The second Masterplan project - MP2 Project - which has been consented with construction works due to commence in 2022 (Ref. ABP-304888-19). The third and final Masterplan – 3FM Plan- the scope of which is set out in the masterplan; 3FM Project - Dublin Port . This involves the development of Port lands on the Poolbeg peninsula and the construction of a new bridge to provide for the southern port access route. This project will enable the provision of the final tranche of Port capacity required to bring Dublin Port to its ultimate capacity of 77m tonnes by 2040. The large scale infrastructural works and other planned works in Dublin Port lands in Dublin City on their own will not deliver 2040 capacity requirements as set out in the Masterplan. DPC also controls c. 44 ha. of land in two holdings in Fingal at St. Margaret's, County Dublin as shown in Figure 1. Permission has been granted for the full development of the western land holding of 22ha of Dublin Inland Port (under Reg. Refs. F16A/04598, F18A0139, FW19A/0101, FW20A/0021 and FW20A/0097). Dublin Inland Port will be utilised primarily to relocate non-core port users from Port lands in Dublin City, making them available for use for freight transit. Construction work is underway for the first phase of this development which will facilitate a new empty container yard. It is envisaged that future developments on DPC lands will provide for check in facilities and laden container yards to ensure greater land usage within Dublin Port. The development of Dublin Port facilities at St. Margaret's, County Dublin is vital to the continued operation of the port in accordance with the Masterplan. **DPC response** Dublin Port volumes continue to grow, and while pandemic related throughput meant no growth in 2020, indications are that the Port will return to positive growth in 2022. Against this backdrop and the policy context outlined above, it is important that any peripheral development adjoining DPC lands must take account of the DPC plans when undertaking assessment. DPC will continue to engage with the developers, as it has continued to do on the maritime issues as they arise. However all proposals must take account of our strategic objectives in continuing to developing Port capacity, to meet Irelands growth needs to 2040. **Shipping and navigation** The area described in Figure 1.1 Project Location of the NIS overlaps the Dublin Port Company jurisdiction and the Dublin Port Pilotage District. Dublin Port facilitates circa 17,000 ship movements per year into and out of the DPC jurisdiction. Approximately 25% of vessels board marine pilots at the extremities of the DPC jurisdiction and with the pilotage district. Investigation vessels will require DPC approval and to work with the Harbour Office to ensure the safety of all vessels. Section 2 of the Schedule of Works details the operation of unmanned vessels should they be approved by the MSO. Within the DPC jurisdiction approval by the Harbour Master will be required for the operation of such craft. Dublin Port is an area of high commercial and leisure traffic density. Dublin Port supports the correct marking and promulgation of offshore projects such that access to and from Dublin Port by shipping is maintained in a safe and sustainable manner. The decisions of ship masters in matters of ship safety and routing to and from the Port should not be negatively affected such that negative outcomes are brought to bear on the wind farm or the vessel concerned. The potential array area lies outside of the DPC jurisdiction. Notwithstanding this, the area outlined provides for a northern border that runs east west and proximate to the most direct line between Dublin and Holyhead used by RORO / passenger ferries operating to and from Dublin Port. The development and existence of the array will impact ship routing particularly during periods of southerly sea and weather conditions. Assuming this potential array t area may become part of the planning proposal the existence of windfarm infrastructure to such an eastern extent and as far north as the entrance to Dublin Bay via the Kish Lighthouse will reduce the decision-making options of ships masters when arriving / departing from Dublin Port. Ships leaving Dublin Port and proceeding south in the Irish Sea will therefore be exposed to rough southerly swell and wind-wave conditions without being able to alleviate the movement of the vessel and its cargo by steaming southeastwards, due to the presence of the windfarm. Additionally the extent of the project area eastwards will require ships sailing northwards in the Irish Sea to route further north before they can alter course towards Dublin Port.	ESB acknowledge that the foreshore licence boundary overlaps with the Dublin Port Company jurisdiction and the Dublin Port Pilotage District and note the concerns raised by the Dublin Port Company. ESB held a meeting with the Dublin Port Company in April 2021 in relation to the overall Project and Foreshore Licence application. ESB will continue to liaise with the Dublin Port company well in advance of any survey work to ensure the required permissions are in place and to ensure there is limited impacts on existing Dublin Port activities. Marine Notices will also be issued prior to any survey works being undertaken. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. A detailed Navigational Risk Assessment will be undertaken as part of this assessment and liaison with Dublin Port Company will be undertaken at all stages of project development in relation to this and to ensure consideration is taken of any concerns of the Dublin Port Company.

Submission 10: Member of Public

ESB notes the points raised in this submission. A response to each of the comments is provided in the table below.

Submission Comments	ESB Response
I am very concerned about proposed site so near the Kish and Bray Banks It will totally ruin. our beautiful seascape a view that everyone here treasures. Not to forget about our fabulous marine life. I am begging you please. don't grant this Licence	This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. A detailed Seascape, Landscape, Visual Impact Assessment (SLVIA) and Ecological assessments will be undertaken to assess the potential impacts of the future stages of any project. ESB will consult further with members of the public as the project progresses.

Submission 11: Member of Public

ESB notes the points raised in this submission. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
I have concerns about how the Baseline Environmental surveys for this project will be conducted over the five year licence period. While establishing an up to date ecological baseline is essential for Site Investigation, this emphasis gets vague later in the application. From page 10 of ESB SI Report • To gather further information on seabed and sub-seabed information. • To provide the project team with baseline information on the environmental conditions at the site, including marine ecology. In the 'Screening for Appropriate Assessment Document' later we are told that the works **may include** ecological surveys. Only 'may', so full reassurance that such surveys will take place needs to be provided. This suggests that the expected level of "survey" may not be undertaken at all and undermines the stated aims in the Site Investigation Document preamble. It appears to be inconsistent. With the pace of applications for foreshore licences and Climate Change impacts up to date information is vital for planning and data from even a decade ago may no longer represent the true picture or provide a realistic baseline. A professional standard of updated survey needs to be one of the terms and conditions applied to the granting of this licence. (from "Supporting Information: Screening for Appropriate Assessment", page 10): The works may include the following: Benthic sampling, Static acoustic monitoring, walkover surveys, Ornithology surveys*, Marine mammal surveys*, Fisheries, fish and shellfish surveys*, Shipping and navigation surveys*, Archaeological survey • Outside scope of Foreshore Investigation Application but included for completeness Along with the impacts of Climate Change, and particularly the increase in the strength of storms in Dublin Bay there are cumulative pressures from other surveys and projects in the Site Investigation Area predicted and referenced below, in addition to the regular Dublin Port dredging works and problems due to the overloaded Ringsend Wastewater Treatment Plant with well documented incidents of sewage spillage at times. Other onshore projects such as the building of a Dublin Port pontoon will also be in progress. (From "ESB SI Report", section 3.3.6) ESB are aware of a number of other determined Foreshore Licence(s) / Lease (s) in the vicinity of the proposed application area as well as a number of other third party applications currently either in the "Application" or "Consultation" phase. The question of the scale of proposed windfarm developments for the bay is not included in this foreshore application but will have long term implications when more turbines are layered further east and probably beyond the 12 mile nautical limit, in addition to any construction of those proposed already for the Kish and East Codling sandbanks (Dublin Array and East Codling) This will bring a concentration of cable link routes from different companies into the already congested Poolbeg area. **Proposed Cable Link Routes and Cable Link landfall site at Poolbeg.** The area of Shelley Banks and the intertidal mudflats and sands will be included in this survey. 'Walkover' assessment is essential along with a review mechanism thoughout the five year period of the survey in order to take into account any shoreline changes after the Baseline is established. While much of the proposed licence includes survey by planes (which had to be switched to a Denmark base post Brexit I understand) or by boat, there is a need for 'ground truth' and not just a reliance on aerial surveys, photographs or deskstop studies. Onshore observation will be especially importance in the monitoring and control of Treadrd Vehicles on shore and intertidal areas. The shoreline area is question is not very extensive, so this can easily be managed. 'Walkover' assessments are required to provide up to date seasonal information on the annual drift line vegetation, shifting embryonic	The SISAA sets out in Table 2.1 a summary of the proposed site investigation and baseline survey work at Sea Stacks Offshore Wind. Within this table it lists the environmental/ecological surveys. Under details it states 'The works may include the following: Benthic sampling, Static acoustic monitoring, Walkover surveys, Ornithology surveys*, Marine mammal surveys*, Fisheries, fish and shellfish surveys*, Shipping and navigation surveys* Archaeological survey'. The * refers to surveys that are outside the scope of Foreshore Investigation Application but is included for completeness. As stated in Section 2.4 of the Site Investigation, Schedule of Works document the need for some surveys that are outside the scope of the Foreshore Licence will be determined following consultation with the relevant stakeholders and assessment requirements. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm and any onshore infrastructure will be addressed in an EIAR and NIS that will accompany any future consent application and will include details of additional onshore surveys and assessments as appropriate. **Proposed Cable Link Routes and Cable Link landfall site at Poolbeg.** As stated in Section 2.4 of the Site Investigation, Schedule of Works document the works may include walkover surveys as appropriate. Ornithology surveys are outside the scope of Foreshore Investigation application but included for completeness in Table 2.1 of the SISAA as submitted as part of the Foreshore Licence application. Ornithological surveys are ongoing, and liaison will be undertaken with Birdwatch Ireland and local authorities as part of the EIA process that will be undertaken to assess the impacts of the construction and operational stages of any proposed OWF and any associated onshore infrastructure. An EIAR and NIS will accompany any future consent application. In terms of the points raised in relation to independent supervision and monitoring these seem to be directed towards the State rather than ESB. If granted a foreshore licence, ESB will comply with all licence conditions. A SISAA and a NIS accompany this Foreshore Licence application in support of the Competent Authority in making its determinations under the Appropriate Assessment process. The information presented in the NIS concluded that

Submission Comments	ESB Response
sand-dunes, and impacts of erosion and pollution. At Poolbeg it is known that blanket seaweed cover can sometimes obscure the presence of onshore biota. Vibration impacts on benthic organisms can cause them the retreat of the mobile species or the 'inward retreat' of tubal biota which may reduce their feeding feeding patterns. With forthcoming changes in shoreline governance the local authorities will be tasked with some of the enforcement of protection measures and this raises the issue of resources so this can be done consistently. While some stakeholders have already been consulted in advance of this application I could see no reference to local authorities or relevant NGO's especially Birdwatch Ireland who have extensive experience of surveying Dublin Bay seabird populations. There is no reference to the Dublin Bay Biosphere. While a Fisheries Liaison Officer is available for the ESB along with an onshore clerk of works and a community liaison officer for the course of the work, extra (and independent) supervision may be required for a project of this size. The foreshore licence application acknowledges that the survey area cuts through the Rockabill to Dalkey Island SAC which protects the harbour porpoise. This needs to be highlighted. Porpoise along with many of the marine species can be impacted by both under and over water sound levels. Expecting them to keep shifting out the way to facilitate a number of simultaneous survey and seabed construction projects at an accelerated pace over the next eight years (up to and after 2030) is bound to have an impact on the well being of the species and diminish the viability of established habitats. There is a danger of fragmentation of eco systems which may ultimately reduce the food chains and reduce Biodiversity. The Precautionary Principle needs to be applied to conserve the existing ecological baseline. More detailed Environmental Impact Statements at a later stage in this project, especially in regard to migratory species, fish spawning grounds, fish nursery areas etc will no doubt be required. (The Poolbeg Planning Scheme EIS from 2009 is helpful in this regard, but would require updating) Frequently we are told in the application that recovery times for impacts from survey processes on biota will be rapid, which may not be the case when there is little opportunity for respite before further interference and disturbance over sustained periods. Borehold tests for instance, may last for a number of hours. Extra siltation as a result of seabed disturbance, along with that of predicted storm forces will increase marine pressures. In the Poolbeg area there is also the question of possible disturbance of contaminated sediments or dump leakage through rock armour due to coastal erosion. The application acknowledges Information Gaps (especially in the foraging range of seals, mammals and some of the bird populations) but tends to assume that mitagation measures will compensate for any lack of long term resiliance. Connectivity of protected marine sites is mentioned but there are also transitional zones that must be taken into consideration. The sensitive bed of Zostera seagrass in the South Dublin SPA needs to be prioritised along with embryonic dunes and Salicornia at Merrion and the Booterstown Marsh Conservation Area. The Dollymount shore end of Bull Island and inner Bull estuary will be extra vulnerable. Auditory impacts on marine species are mentioned along with the danger of collision with working vessels, with the assumption that the project vessels will be working at slower speeds so posing less of a threat. A highspeed survey vessel was visible to shore users during a period of windfarm developer survey work in the Killiney Bay area in 2021, which criss-crossed the waters both repeatedly and rapidly. What authority will monitor speed limits, and	following application of suitable mitigation measures the Site Investigation works, either alone or in-combination with other plans or projects, would not have an adverse effect on the integrity of any Natura 2000 site. A Risk Assessment for Annex IV Species accompany this Foreshore Licence application which concludes that the surveys will not significantly affect the FCS of any marine Annex IV species as defined in the Habitats Directive and corresponding European Communities (Birds and Natural Habitats) Regulations 2011 – 2021. A number of the proposed survey techniques are intrusive in nature, these include, boreholes, vibrocores, cone penetration tests (CPTs), ecological grab samples and buoy deployments. However, the footprint of these activities is limited and in total results in a temporary disturbance of circa 0.011 ha across the Foreshore Licence area (30,461 ha). In terms of the points raised in relation to monitoring these seem to be directed towards the enforcement authority rather than ESB. If granted a foreshore licence, ESB will comply with all relevant licence conditions prior to any survey works being undertaken. ESB has commenced a comprehensive stakeholder and community engagement programme as part of our preparation activities associated with any future consent application for an OWF project. During this consultation programme we will be inviting input from interested parties in relation to the design and environmental assessment of the proposed offshore and onshore OWF infrastructure. ESB will work in collaboration with communities to ensure that those most impacted have adequate opportunity to benefit and feed into the delivery approach for any future community benefit fund. Information relating to the proposed Sea Stacks Offshore Wind project will be updated on the project website, at the following address, www.seastacksoffshorewind.ie as the project progresses. Additionally, a virtual public consultation room on the Sea Stacks project was launched on 26th April 2022 and remained open until 6th June 2022. It provided up-to-date information on the project and offered an opportunity for interested parties to provide feedback and register to be informed as the project progresses. This was the first of what will be a series of virtual consultations by ESB on the project.

Submission Comments	ESB Response
will there be a 7 day hotline to an appropriate enforcement authority for anyone with concerns? Provision of reliable information to the public will encourage interest and engagement. Wide stakeholder and public consultation will be essential at an early stage in this project, especially with the expanding demands for coastal water activities, shoreline demands for recreational space, and the long acclaimed visitor attractions of our capital city. Public discussion and debate has been suppressed due to pandemic restrictions for two years but will help bring a consensus, provided that accurate information is made available. In order to meet the urgent ORE targets of our country by the end of this decade, east coast windfarm development is being fast tracked. This can still be achieved with minimum loss of biodiversity and in a sustainable manner. As the ESB are already familiar with the Poolbeg area, they can offer key knowledge and expertise that would be an advantage in the development of wind energy resources. I hope you will take my concerns into account.	

Submission 12: Member of Public

ESB notes the points raised in this submission. A response to the comments is provided in the table below.

Submission Comments	ESB Response
I wish to make a submission in relation to the proposed application being made by the ESB for Offshore Wind Licence. I am not opposed to renewable energy but believe that such major industrial development as is proposed in the near-shore zone (6-13Km from shore) all along the east coast from Dundalk Bay to Carnsore Point is out of line with best practice in the EU and internationally, and risks damaging the very environment it purports to protect. The proposed site is just east of the Kish and Bray banks and close to the Codling Bank, on which other wind farm developments are proposed together with the cumulative effects of these proposed developments would inevitably have major impacts on Dublin and Killiney Bays, Bray Head, Howth Head etc. I am opposed to this application and due to its size and the negative impact on the environment.	This Foreshore License application is the initial stage in the overall development process and is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm and cumulative impacts with any other OWF project will be addressed in an EIAR and NIS that will accompany any future consent application.

Submission 13: Coastal Concern Alliance - Submission 1

ESB notes the points raised in the submission by the Coastal Concern Alliance. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
The EIA Directive - Consideration of alternatives - Article IV of the EIA Directive as amended by Directive 2014/52/EU states that information provided in an Environmental Impact Assessment Report (EIAR) should include a description of the reasonable alternatives studied by the developer which are relevant to the project and its specific characteristics and an indication of the main reasons for the option chosen, taking into account the environmental effects. The consideration of alternatives typically refers to alternative design, technology, location, size and scale. The primary obligation under Article 5(1)(d) of the EIA Directive is upon the developer to provide a description of the 'reasonable alternatives' considered in the course of the application process. In this regard, the Directive states as follows: (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment; **Site selection/Location -**In their Foreshore Licence application, ESB state that they have 'identified a number of preferred projects which they will now seek to take to the next stage in the process; the undertaking of more detailed investigations, surveying and consultation in order assist in making a decision on whether a feasible development opportunity exists. One such project is Sea Stacks Offshore Wind, the subject of this Foreshore Licence application. Sea Stacks Offshore Wind is not dependent on any other suitable site, functionally, legally or otherwise'. Their Natura Impact Statement states 'The suitability criteria considered in identifying this potential development site included available area, water depth, seabed slope, designated nature conservation sites, planning/environmental constraints, access to the national grid, port facilities, navigation channels and cable landing locations.' There is no reference to the consideration of alternatives. ESB are required, inter alia, to consider alternative sites demonstrating that, with regard to the site selected, alternatives sites have been considered. As it is emphasised that this site is not dependant on any other and there is no reference to alternatives considered, it is apparent that this requirement has not been met. **Other alternatives -**Neither does the current Licence Application appear to consider technological alternatives, although alternative technologies are available or to explore options in relation to size and scale. **Other alternatives -**Neither does the current Licence Application appear to consider technological alternatives, although alternative technologies are available or to explore options in relation to size and scale. 1. 'There is an important role for route and site selection at all phases of planning and development to avoid environmental impacts.' (NMPF, page 10) This is a watered-down version of the strong emphasis on site selection contained in the Strategic Environmental Assessment of the draft NMPF, which stated ''There is potential for negative impacts for all environmental receptors where ORE infrastructure has not had the benefit of a robust site selection process which explicitly includes consideration of benthic habitats, marine mammals, birds and visual receptors as a minimum'. The watered-down phrase is regrettable but it is, nonetheless, an assertion that route and site selection are important considerations in avoiding environmental impacts. 2. 'Routing and site selection are important tools in ensuring that impacts on seascape and landscape are minimised and mitigated. This should be a factor in early stages of plan or policy development or before beginning formal application / permitting as appropriate. Response to this policy should include reference to any material matters set out in relevant land-based plans such as coastal county development plans, e.g. coastal views and prospects.' (NMPF, page 97). It is clear that this current application is 'in early stages of plan	This particular Foreshore Licence application relates to proposed SI works only, which are proposed to be temporary and short term in nature. There is no requirement to demonstrate alternatives within this Foreshore Licence application. As stated in the application documents ESB undertook an extensive site selection process where they assessed the entire coast of the Republic of Ireland (RoI), in order to identify potentially suitable sites for the development of offshore wind farms. That process involved preliminary assessments of both environmental and technical aspects of a potential development, with consideration for the various stakeholders and marine users who could be impacted by both SI works and the ultimate development (the wind farm itself). As an outcome to that process ESB has identified a number of preferred projects which includes Sea Stacks Offshore wind which they now seek to take to the next stage in the process; the undertaking of more detailed investigations, surveying and consultation in order to assist in making a decision on whether a feasible development opportunity exists. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this particular Foreshore Licence application being consulted upon. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. This will include consideration of alternative design, technology, location, size and scale as required. Comments made in relation to the OREDP seem to be directed towards to the Department of the Environment, Climate and Communications and to any future OWF development rather than to ESB and the proposed SI which is the subject of this foreshore licence application.

Submission Comments	ESB Response
or policy development'. However, there is no evidence of independent oversight of site selection, nor does it appear that environmental impacts of a future windfarm development on this site have been addressed, with consideration of impacts on protected (and non-protected) habitats and species or on seascape and landscape, in what is one of the most widely used areas of the Irish coastline. The proposed site crosses two bays, Dublin Bay and Killiney Bay and runs close to shore along the coastline of Wicklow, the totality of which is designated Coastal Area of Outstanding Natural Beauty in Wicklow County Development Plan 2016-2022. 3. Robust site selection and relevant appropriate environmental assessment (such as Appropriate Assessment, Environmental Impact Assessment and/or Ecological Impact Assessment (EcIA) should be used to inform decisions on land-based infrastructure that facilitates marine activity. (NMPF page 83). The current ESB licence application proposes to bring cables ashore through the Rockabill to Dalkey SAC, the most important location for harbour porpoise in Ireland, and through the Poolbeg intertidal area, an area that is already subject to multiple environmental pressures. The critical importance of site selection is also acknowledged internationally as THE KEY to avoiding environmental impacts of both wind and solar developments (International Union for the Conservation of Nature, 2021), yet in Ireland to date government has taken no role in managing site selection, as is evident in the current Foreshore Licence proposal. It is clear that this Foreshore Licence application fails to meet the requirements specified in the NMPF, adopted only last year and ignores international best practice with regard to site selection and environmental protection. **Offshore Renewable Energy Development Plan (OREDP) -** The Accompanying Report also quotes the 2014 Offshore Renewable Energy Development Plan (OREDP) as justification for this Foreshore Licence application. The Strategic Environmental Assessment (SEA) of the draft OREDP (2010) acknowledged the numerous data and knowledge gaps that were inherent in the plan. These serious shortcomings were also highlighted by both statutory (e.g. An Taisce) and non-statutory consultees (e.g. Coastal Concern Alliance) prior to the adoption of the Plan. As is stated in their Foreshore Licence application by ESB, an Interim Review of the OREDP was undertaken in 2017 and published in 2018. What is not stated is that the Interim Review was to be followed by a Full Review of both the Plan and its accompanying SEA, due to be completed in 2020. In spite of numerous enquiries as to the status of this required Full Review, no information has been provided as to when they will be completed and focus appears to have moved to OREDP II. **OREDP II appears to focus only on the Exclusive Economic Zone, i.e. outside the 12nm limit, and therefore is not addressing the fact that the 2014 OREDP is now outdated and a new Plan and SEA are two years overdue**. The relevance of this failure to update the OREDP relates to the following facts: (a) A wide range of data and knowledge gaps undermined the original OREDP and this Plan is certainly not now fit-for-purpose (b) Major advances in technology, e.g. floating wind, provide new opportunities in the offshore environment, opportunities that did not exist ten years ago. (c) Significantly increased awareness of value of the marine environment itself in helping to mitigate the impacts of climate change need to be prioritised. (d) The adoption by the Irish government in May 2019 of a climate and biodiversity emergency, placing biodiversity protection and restoration on a par with climate for consideration in Ireland. (e) Acknowledgement that with regard to protection of our marine environment, only 2% of the required 30% required by 2030 is currently designated for protection, an issue that needs to be urgently addressed. With regard to Effects on Seascape from Offshore Developments, the OREDP 2014 states the following: • Consideration should be given to locating devices at a maximum distance from the shore/coast (within technological constraints) • Wind farms should not be sited where they appear to block or close the entrance to bays/loughs/narrows/sounds or where they separate a bay from the open sea. • Wind farms should not be sited where they have the potential to fill a bay. The open, expansive nature of the water surface	

Submission Comments	ESB Response
area should be allowed to continue to dominate • Wind farms should be avoided where they conflict with the scale and subtleties of complex, indented coastal forms • Consideration should be given to locating devices in already industrialised and developed seascapes. Clearly, with reference to the current application these requirements have not been met.	
Project splitting - Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (EIA Directive), as amended by Council Directive No 97/11/EC of 3 March 1997 and Directive No 2003/35/EC, provides that Member States must ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to an assessment of their environmental effects. These projects are defined in Article 4 which refers to Annex I and II of the Directive. The Commission considers that the abovementioned objective of the EIA directive should not be circumvented. In particular, projects which are likely to have significant effects on the environment, and that would require an EIA under the directive, should not be split into sub-projects so that each of them, taken individually, is determined not to have significant environmental effects and thus escapes the obligations set out by the directive. This practice is in breach of the EIA Directive. The ESB seek in their Foreshore Licence application to split the environmental impacts of the site investigation work from the environmental impacts of the whole development. This is in breach of the EIA Directive as outlined above. In the Glossary to their document Screening for Appropriate Assessment they explain that Export Cable Corridors means 'Area within which the export cables will lie' and WTG array area as 'Area within which the wind turbine generators will lie'. These definitions demonstrate that far from being related 'to proposed Site Investigation (SI) works only' and being 'temporary and short term in nature' the proposed site investigation works are an integral part of a plan to develop an 800MW wind farm with fixed bottom turbines 12Km from the Irish Coast in an area that has numerous Natura 2000 designations to protect habitats and species. In addition, the Foreshore Licence is submitted under a planning regime that is long acknowledged by all political parties to be outdated and unfit-for-purpose. We observe that this Foreshore Licence application was submitted on the same day on which the President signed the new Maritime Area Planning Act into law, 23rd December 2021. This application refers to a portion of a whole development and is therefore 'project splitting', given that NO consideration at all has been given to potential impacts of the project as a whole.	Each stage of the project is subject to separate application and consent processes. The grant of a foreshore licence which gives permission to undertake surveys and SI to inform the feasibility and design of the potential wind farm or to collect data for monitoring purposes is made on terms which are expressly without prejudice to the subsequent mandatory future development consent application. Moreover, the future development consent application cannot be submitted until such time as a Maritime Area Consent has been granted by MARA in respect of the area of seabed to which the development proposal relates. While the findings of these investigations will form part of the basis for the environmental assessments to be submitted as part of the planning application for the substantive development proposal, should the project be awarded a Maritime Area Consent by MARA once established, the site investigation works are not inextricably linked to or dependent upon the future construction and operation of the project itself, as the former can occur without the latter and the development and operation of a wind farm is not a necessary consequence of granting a foreshore licence application for site investigations. This is standard practice with terrestrial, coastal and marine developments, whereby the initial investigative stages require planning permission, foreshore or marine licences first, then the results of these activities feed into the evidence base for assessing the next stage of activities, usually the project itself, which will then be the subject of a full consent application in its own right, in due course. This is not a way of trying to 'get round' the EIA Directive but rather these actions are being taken to ensure that the project has all necessary environmental data to hand to enable it to fulfil the requirements of the EIA Directive by carrying out a robust assessment of the environmental impacts of the substantive development proposal, while also ensuring that the impacts of conducting those surveys are also properly assessed. it is customary and accepted practice which seeks to ensure each stage of the development is both consented and lawful.

Submission Comments	ESB Response
Impacts of the whole project alone and in combination with other proposed developments. No Screening, comprehensive environmental assessment or Natura Impact Assessment has been carried out to assess, for example, impacts on cetaceans in general and harbour porpoise in Clearly, with reference to the current application these requirements have not been met. This application refers to a portion of a whole development and is therefore 'project splitting', given that NO consideration at all has been given to potential impacts of the project as a whole. particular, of the noise from the pile driving that is proposed as a means of erecting the fixedbottom turbines. No assessment has been made of the potential cumulative impacts on birds that would result from construction of the proposed turbines in combination with those proposed in adjacent locations, Kish and Bray Banks, Codling Bank, Arklow Bank and the numerous proposals to the north of Dublin stretching to the north of Dundalk Bay. No assessment has been made to assess the visual impact on adjoining coastlines around the whole of Dublin Bay of the proposed turbines either with or without consideration of cumulative impacts. No assessment of extensive cumulative environmental, visual, heritage, archaeological has been undertaken, either in relation to the investigative activities or of the whole proposed development with regard to numerous other applications for development in this general area.	Please refer to the SISAA and NIS as submitted with this Foreshore Licence application where in combination impacts have been assessed. This Foreshore licence application relates to proposed SI works only. These works are temporary and short term in nature. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this application. Specifically having regard to appropriate environmental assessments, the Foreshore Licence application includes environmental assessments, a Risk Assessment for Annex IV species, SISAA and a NIS.
Impacts of proposed site investigation works-Marine Mammals - The NPWS Site Conservation Objectives for the Rockabill to Dalkey Island SAC, designated for harbour porpoise and reefs states: 'Individual porpoises of all ages use sound as their primary sensory tool in order to navigate, communicate, avoid predators, or locate and facilitate the capture of prey under water. Group sizes tend to be small (i.e. in single figures, more commonly 2 to 3 individuals) although larger aggregations may occasionally be recorded, particularly in the summer months. Harbour porpoise breed annually in Ireland, predominantly during the months of May to September. The principal calving period in Irish waters is thought to occur in the months of May and June, although it may extend throughout the summer months and into early autumn. Newborn calves are weaned before they are one year old. Mating commonly occurs several weeks after the calving season.' This designated area along the east coast of Ireland is the most important location for harbour porpoise in Ireland although the range of the species clearly extends beyond the boundaries of the SAC. With the vast areas now being targeted for site investigation for wind farms, all proposing noise-generating surveys within the SAC, the multiple sources that would contribute to the noise generated and the critical importance of sound to the survival of the harbour porpoise and other marine mammals, the conclusion drawn those impacts can be mitigated, is at the very least questionable. It is striking that this week there has been an outcry in Ireland in relation to the potential impacts on fish and marine mammals that would be generated by military exercises 240Km from shore in Ireland's EEZ. Objections raised by the Minister and fishers have led to the moving of the operation to outside of Ireland's territorial water. This is in stark contrast to the apparent tolerance for noise pollution and seabed disturbance that is proposed 0-17Km from shore along the Dublin and Wicklow coastline.	Mitigation measures have been applied in the Annex IV Risk Assessment (Section 7) and NIS (Section 3.2) for the protection of harbour porpoise and relevant designated sites in line with NPWS guidance regarding the S.I. activities proposed in this Foreshore Licence application.
Birds - All species of wild bird that occur naturally in Ireland are fully protected at all times by the Wildlife Act and relevant amending legislation. Similarly, all birds naturally occurring in the wild state are protected by the EU Birds Directive. Numerous seabirds, many of which are on the IUCN red and amber lists of threatened species, frequent the area in the vicinity of the Kish and Bray Banks and, on that basis, earlier scientific investigation of birds concluded that the area is unsuitable for the location of wind turbines.	The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this particular Foreshore Licence application being consulted upon.
Impacts of the site investigation works proposed in the current Foreshore Licence application have screened out numerous bird species that we contend should have been screened in. (Details in associated submission).	The rationale for screening is presented in Section 4.1.1 of the SISAA submitted with this Foreshore Licence application. This rationale is

Submission Comments	ESB Response
	considered to be sufficiently robust and proportional to inform assessment of proposed SI works.
The availability of food source has significant measurable impacts on a species' ability to survive and reproduce successfully. All tern species are known to rely heavily on sandeels, sprat and juvenile herring. In a study by Newton and Crowe, 2000, sandeels were found to provide between 60 and 95% of the diet of terns. Sandeels are a predominant species associated with east coast sandbanks and the Kish and Bray Banks are a breeding and spawning ground for herring. However, the Annexe IV assessment in the current application states that 'environmental and ecological surveys to be carried out 'may include' fisheries, fish and shellfish surveys' suggesting that these surveys are not seen as mandatory.	The exact suite of fisheries surveys to be undertaken will be determined through consultation with relevant bodies, and as such a range of survey types are included in the assessments to ensure robustness. This includes assessment of the impacts of proposed SI works upon seabird prey species (considered in relation to tern species in Table 4.8 of the SISAA submitted with this Foreshore Licence application for example). In relation to prey species, given the nature of proposed SI works, the potential for displacement of prey species of these Special Conservation Interest (SCIs) is considered limited. Furthermore, as proposed works are localised and would take place only for short durations in any particular location, should any displacement of SCI prey species occur as a result of proposed works, any such impacts would be spatially and temporally very limited. At any given time during the course of proposed works, the vast majority of SCI prey species would experience no impacts in association with the works ensuring no change to food supply availability for these SCIs within their foraging areas. Any impacts upon prey species would therefore be negligible and not lead to LSE.
Given the proposals to carry out geophysical, geotechnical, bore hole, vibrocore and grab sampling, core penetration tests, down the hole testing, benthic sampling etc, all in the vicinity of the Kish and Bray Bank it seems that the risk of significant impacts from these activities on the Annexe 1 sandbank habitat (Kish and Bray Banks) and on the fish spawning ground associated with this habitat cannot be optional, but must be mandatory.	Given the nature and scale of the proposed S.I. works there is no potential for significant impacts to the Kish and Bray Bank sandbank habitats or on the fish spawning in these areas. The indirect effects of the works on bird prey species (fish) in designated sites has been assessed in the SISAA report which will allow the Department to conclude that there is no potential for significant effects on these habitats and on the fish spawning areas that exist in this area.
With reference to the feeding habits of terns, a further consequence of such narrow habitat and environmental preferences, combined with a limited dispersal propensity of adults, is that sandeels are unlikely to be able to relocate in response to changing conditions, making it critical to protect the food sources of these protected species. Detailed submission in relation to the impacts relating to birds and environmental impacts around the proposed Poolbeg landfall site are provided in separate submissions.	In relation to prey species, given the nature of proposed SI works, the potential for displacement of prey species of these SCIs is considered limited. Furthermore, as proposed works are localised and would take place only for short durations in any particular location, should any displacement of SCI prey species occur as a result of proposed works, any such impacts would be spatially and temporally very limited.
Methane release and geogenic reefs. - The Codling Fault Zone, (Habitat 1180), is an area of methane-derived authigenic carbonate (MDAC) in the Irish Sea, within which it acknowledged that site investigation will take place. Methane generated in sub-seabed sediments is only able to migrate towards the seabed if there is a suitable migration pathway. Three potential pathways are recognised in the Irish Sea and include faults as is found in the Codling Zone. Oil industry data have indicated the presence of gas around some Irish Sea faults and, in particular, in association with the Codling	Natural processes in relation to the QI features of the Codling Fault Zone SAC and any submarine structures formed by leaking gasses as described are considered suitably mitigated by the measures proposed. ESB can confirm that there is no requirement to undertake intrusive SIs within Codling Fault Zone SAC.

Submission Comments	ESB Response
Fault Zone However, in the ESB Natura Impact Statement it is stated that 'to ensure no adverse effects on the conservation objective of the SAC, mitigation will be put in place to ensure that no extractive survey methods (or placement of anchors or jack up legs) cause damage to these QIs. This will be achieved by using geophysical survey data to identify the locations of potential Annex I habitat. Any areas of potential reef will be avoided through micro-siting of equipment or survey location'. Gas that is contained within this area of reef is predominantly methane. The impact of the atmospheric concentration of this gas, generated from ruminants, is a major reason why the farming industry in Ireland is under sustained pressure to adapt and reduce emissions. It seems inexplicable that ANY risk would be acceptable in this SAC where the potential exists for release of significant methane into the atmosphere. On this basis we propose that no site investigation that has the potential to impact on the reefs of the Codling Fault Zone should be permitted. In addition, the micro-siting of equipment in an offshore mobile environment cannot be relied upon as a reliable mitigation. **Conclusion-**On the basis of the information contained in this and associated submissions, CCA propose that this application for a Foreshore Licence should be refused.	

Submission 14: Coastal Concern Alliance - Submission 2

ESB notes the points raised in the submission by the Coastal Concern Alliance. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
General Comments: The FS007134 license application states that "extensive site selection process where they assessed the entire coast of the Republic of Ireland (RoI), in order to identify potentially suitable sites for the development". For the purposes of public transparency and to allow accurate, informed interpretation of the environmental data within this application the developer should have outlined the reasons for selection of this particularly environmentally sensitive site. The license application should include some depth on ecological factors governing site selection; in particular the applicant indicates that it is considering sites suitable for both fixed and floating foundation wind turbine technology. Further information would be most welcome on the reasons for the current site selection and would better inform the public as to the benefits as well as the deficits of the selected site. Site selection is the most critical factor in preventing ecological damage and cannot be ignored. Geophysical data for the proposed area has already been documented by INFORMAR and carried out for multiple other projects in the area. There is no justification presented for this further investigation.	The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this particular Foreshore Licence application being consulted upon. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. This will include details on site selection. INFOMAR data is available, but the level of information provided is not at a standard that is adequate for EIA or infrastructure design as it lacks required data such as SSS, Mag, High Res MBES, High Res SBP, etc.). It does not include site specific metocean data (wave, wind or tidal) or intrusive data. Data acquired by other developers is also not available to ESB
1. Remaining Risks/Lack of Robust Scientific Data: Granting of this license would contravene article 6(3) of Directive 92/43/EEC ('the Habitats Directive') by failing to contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works. • Fish (particularly non-commercial variety), bird species and cetaceans in and around the site location and impact on the same has not been adequately assessed. This may result in a contravention of the Birds Directive (Directive 2009/147/EC) as well as the habitats directive (92/43/EEC).	The Foreshore Licence application is accompanied by a SISAA and NIS addressing the requirements of Article 6(3) of the Habitats Directive.
• It is not an appropriate or accurate finding that at stage 1 AA, no LSE on marine mammals (auditory injury, disturbance and collision) exist.	The conclusions of why no LSE can be reached are clearly presented in the SISAA submitted with this Foreshore Licence application.
• "FS007134 Risk Assessment for Annex IV Species" (p. 15) states that "Instantaneous, rather than cumulative, PTS was considered because information on SPLs, rather than SELs, was available from equipment manufacturers". This is inadequate and onsite or analogous assessment of the sound source should be carried out to appropriately assess the risk of these sound sources to marine mammals.	SEL's or SPL's are both equally justifiable ways for assessing effects of underwater noise. The use of SPLs for the assessment of noise effects from SI work is considered robust and is a verified method for determining effects on receptors from such noise sources. SPL's are considered more suitable for mobile survey activities where both the source and receptor are likely to be moving relative to each other (Popper *et al.,* 2014)[14], or survey activities where the noise emissions are variable in timing, and thus determination of SEL's would be impossible with any accuracy. As such the SPL assessment allows the effects to be determined without reasonable scientific doubt.
• "FS007134 Risk Assessment for Annex IV Species" (p. 15) compares the geotechnical survey proposed to pin pile drilling at another location, in (generally speaking) deeper water (see chart license	The comparison is for borehole drilling (highest SPL) during the geotechnical work and pin pile drilling - not geophysical surveys, where USBL, UHRS and MBES are used. The

[14] Arthur N. Popper · Anthony D. Hawkins · Richard R. Fay David A. Mann · Soraya Bartol · Thomas J. Carlson Sheryl Coombs · William T. Ellison · Roger L. Gentry Michele B. Halvorsen · Svein Løkkeborg · Peter H. Rogers Brandon L. Southall · David G. Zeddies · William N. Tavolga 2014. Sound Exposure Guidelines for Fishes and Sea Turtle

Submission Comments	ESB Response
application p.22). This is not an adequate comparison to the noise sources which pose a risk in this license application (e.g. USBL, UHRS and MBES). Therefore, these comparisons should be struck from the assessment. Sufficient analytical and simulation approaches exist to assess the transmission loss of sound sources and should be implemented here to examine the LSE and to provide an appropriate assessment.	geophysical survey assessment is in Section 5.2.1 of the Risk Assessment for Annex IV species as submitted with this Foreshore Licence application.
Within the Supporting Information: Screening for Appropriate Assessment (p.13), the applicant states in relation to hearing damage thresholds for marine mammals: "SPL thresholds have been used because information on SPLs, rather than SELs, was available (both in the 'Site Investigation – Schedule of Works' document and from equipment manufacturers)" The arguments presented here are unacceptable for the use of SPL assessment of noise levels over the use of the current gold standards, SEL. The recent license application on Arklow Bank (FS007339) successfully calculated noise levels using SEL technique and there is no technical reason why this could not also be adopted by this developer. The availability of 'easy calculate figures' in the literature does not represent a reasonable excuse for not developing figures where they are lacking. This does not represent an appropriate assessment.	SEL's or SPL's are both equally justifiable ways for assessing effects of underwater noise. The use of SPLs for the assessment of noise effects from SI work is considered robust and is a verified method for determining effects on receptors from such noise sources. SPL's are considered more suitable for mobile survey activities where both the source and receptor are likely to be moving relative to each other (Popper *et al.,* 2014)[15], or survey activities where the noise emissions are variable in timing, and thus determination of SEL's would be impossible with any accuracy. As such the SPL assessment allows the effects to be determined without reasonable scientific doubt.
• "FS007134 Risk Assessment for Annex IV Species" (p. 10) states that: "Lethal effects may occur where peak to peak levels exceed 240 dB re 1 µPa, and physical injury may occur where peak to peak levels exceed 220 dB re 1 µPa (Parvin et al., 2007)". This source is outdated. The most up-to-date scientific data should be regarded in the assessment of LSE on European Protected Species (EPS).	Appropriate Assessment is required to assess the LSE on SACs, whilst the Annex IV risk assessment has been prepared to ensure the strict protection of marine Annex IV species. Furthermore, outside of low frequency naval sonar (Parsons, 2017) and underwater explosives (Danil and St. Leger, 2011), there is little supporting evidence of anthropogenic underwater noise causing lethal effects or physical injury in marine mammals. The only empirical evidence which provide broad, rough criteria for these effects are from Parvin *et al*. (2007) which states that lethal effects may occur where SPLs exceed $240_{peak\text{-}peak}$ dB re 1 µPa, and physical injury where SPLs exceed $220_{peak\text{-}peak}$ dB re 1 µPa. Certain lethal effects, such as gas and fat emboli, similar to decompression sickness, stem from the change of behaviour in deep diving species such as beaked whales (D'Amico *et al.,* 2009; Filadelfo *et al*., 2009; Parson, 2017) rather than physical impact from the source. The relatively shallow water depths (12 - 67 m) and maximum distance of 32 km from the coast of Ireland reduces the potential for deep diving species in the area. The presence of the survey vessels in the area are likely to lead to small-scale temporary displacement of cetaceans, resulting in them keeping a distance from the survey equipment. Therefore, the potential for lethal effects and physical injury from increased anthropogenic noise from either geophysical survey and positioning equipment or geotechnical survey work has not been considered further. For assessing potential for auditory damage Southall *et al.* (2019) has been used which is considered the most up to date scientific data available.

[15] Arthur N. Popper · Anthony D. Hawkins · Richard R. Fay David A. Mann · Soraya Bartol · Thomas J. Carlson Sheryl Coombs · William T. Ellison · Roger L. Gentry Michele B. Halvorsen · Svein Løkkeborg · Peter H. Rogers Brandon L. Southall · David G. Zeddies · William N. Tavolga 2014. Sound Exposure Guidelines for Fishes and Sea Turtle

Submission Comments	ESB Response
• "FS007134 Risk Assessment for Annex IV Species" (p. 12) states that: "The threshold for lethal effects resulting in the death of an individual is 240 dB re 1 µPa (Parvin et al., 2007). The SPLs identified for the proposed equipment for the geophysical surveys (Table 5.4) are all lower than this lethal threshold. As the proposed geophysical surveys do not reach high enough SPLs, no lethal effects are anticipated." However, Table 5.4 outlines the maximum SPL for Ultra-high Resolution Seismic (UHRS) – Boomer/Sparker to occur at up to 226dB re 1 µPa at 300 Hz – 5 kHz, which is within the audible range of the harbour porpoise, Minke whale and bottlenose dolphin and would cause PTS to the harbour porpoise at 202dB re 1µPa (Southall et al. 2019). As harbour porpoises use hearing for navigation and feeding purposes, they cannot survive without hearing and would equate to death. Therefore, the lethal threshold for this species should be considered to be 202dB re 1µPa.	Southall criteria, considered the most scientifically robust criteria, was used to assess auditory injury to marine mammal species (Table 5.2 and Section 5.2.1.2 of the Annex IV risk assessment). 202dB re 1µPa was used for harbour porpoises. In general, geophysical equipment such as SBP and UHRS are highly directional, with low horizontal sound propagation (JNCC 2020 guidance for harbour porpoises). In addition, higher frequencies tend to attenuate quicker than lower frequency equipment resulting in reduced impact zones (JNCC, 2010; JNCC, 2017).
"FS007134 Risk Assessment for Annex IV Species" (p. 12) states that: "standard mitigation measures, as detailed by "Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters (DAHG, 2014)… will be implemented". Therefore, the potential for physical injury as a result of the SBP and UHRS equipment is considered to be negligible." This does not comprise an adequate two-stage Appropriate Assessment. Similar statements are presented in "5.2.1.2. Auditory Injury" (p13), which are equally invalid, and risks have not been adequately assessed with mitigation measures in place.	The impacts without mitigation measures in place are assessed in the SISAA (See Section 4.2.2.3 Step 3: Project alone Assessment) as submitted with this Foreshore Licence application. The Annex IV risk assessment has been undertaken to ensure the strict protection of marine Annex IV species.
"FS007134 Risk Assessment for Annex IV Species" (p. 13) references Thompson et al. (2013), who observed "harbour porpoise responses to geophysical (seismic) survey vessels in the Moray Firth were observed over ranges of 5 to 10 km" and then goes on to say "for the purposes of this assessment, an impact range of 5 km is considered appropriate to represent the worst-case for UHRS and SBP systems." However, no quantitative reasoning for this halving of the observations of Thompson et al. (2013) is presented and therefore the assessment does not contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	The JNCC guidance which was published in 2020 and based on up-to-date scientific literature (Crocker & Fratantonio[16] 2016, Crocker[17] *et al.* 2019) recommends using an effective deterrence range of 5 km for geophysical surveys[18]. JNCC considers that this effective deterrence range is likely to be conservative.
"FS007134 Risk Assessment for Annex IV Species" Table 5.5 (p. 13) attempts to quantify the percentage population which has the potential to be affected by a temporary displacement due to noise produced during the proposed works. However, exactly what population the "reference population" (apparently 63,077 porpoises) refers to is not outlined and so cannot be scrutinised. Regardless, this 1% rule has no legal basis, as shown in Sweetman vs An Board Pleanála (case C-258/11, CJEU judgement, 11 April 2013).	Reference population is taken from the Inter-Agency Marine Mammal Working Group 2021 which can be viewed here https://hub.jncc.gov.uk/assets/3a401204-aa46-43c8-85b8-5ae42cdd7ff3 The Management Units where the reference populations have been taken are based on current understanding of ecological/biological and spatial differences within populations of the seven most commonly sighted species around the UK and Ireland. Reference populations are calculated using data from dedicated surveys and reviewed every 5 years to ensure they're still relevant. This work is done by the Inter-Agency Marine Mammal Working Group (IAMMWG) and published through JNCC Reports. This legal case which has been referred to, stated a permanent loss of 1.47 ha out of 270ha and related to

[16] Crocker, S.E. and Fratantonio, F.D. 2016. Characteristics of high-frequency sounds emitted during high-resolution geophysical surveys. OCS Study, BOEM 2016-44, NUWC-NPT Technical Report 12, 203pp

[17] Crocker, S.E., Fratantonio, F.D., Hart, P.E., Foster, D.S., O'Brien. T,F. and Labak, S. 2019. Measurement of Sounds Emitted by Certain High-Resolution Geophysical Survey Systems. IEEE Journal of Oceanic Engineering 44: 796-813, doi.org/10.1109/JOE.2018.2829958.

[18] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/889842/SACNoiseGuidanceJune2020.pdf

Submission Comments	ESB Response
	Appropriate Assessment, not the need for a derogation Licence for Annex IV species. This temporary displacement of animals will not impact the conservation status of any of the species in their natural range or have any lasting effects.
"FS007134 Risk Assessment for Annex IV Species" Table 5.5 (p. 13) takes the abundance of Harbour porpoises as "greatest animal density estimates found in Hammond et al. (2021) and Rogan et al. (2018)", which appears to be based on ~1.04 Harbour porpoises/km2, however, the worst-case scenario should be taken in which the density within the Rockabill to Dalkey Island SAC was estimated as 1.87 Harbour porpoises per km2 (O'Brien and Berrow, 2016).	The assessment relates to Annex IV species within and outside SAC areas, and as such the density estimate used is considered to be appropriate. For information, using the 1.87 worst-case density estimate presented by the consultee, then the difference is 147 (previously 82) individuals in the area and 0.23% (previously 0.13%) of the population has the potential to be impacted. The conclusions of the assessment would therefore not change.
"FS007134 Risk Assessment for Annex IV Species" (p. 15) states that "There is no potential for lethal effects or physical injury (for which the thresholds are 240 dB re 1 µPa and 220 dB re 1 µPa respectively; see section 5.1) from any of the equipment used for geotechnical surveys (see Table 5.6)" as well as "The maximum source pressure levels of all equipment (Table 5.6) do not have the potential to induce the onset of PTS even at very close range" However, during these operations, either a jack-up vessel or a vessel containing Ultra-short baseline (USBL) acoustic positioning system will be required, which is a pulsed sound source. If a vessel containing Ultra-short baseline (USBL) acoustic positioning system may be used for these Geotechnical surveys then the risk associate with them should be included here. As outlined in the "FS007134 Schedule of Works" (Table 2: Summary of noise sources Noise Source) USBL operates at 18-30 kHz and 170 – 220 dB, which is both within the audible range of marine mammals and operates at an amplitude exceeding the PTS threshold of 202dB re 1 µPa. This risk is not sufficiently assessed.	As footnote 8 in the Risk Assessment for Annex IV species states "Any other audible sound emitting equipment used in the survey which has the potential to cause physical or auditory injury will also be included in the mitigation measures". Therefore, if a USBL is used, which has an SPL which has the potential to cause injury, mitigation measures will be implemented. It is therefore considered that the use of the USBL is suitably assessed, and that the project has put measures in place to ensure adherence to the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations, 2011-2021.
"FS007134 Risk Assessment for Annex IV Species" (p. 15) section "5.3 Increased Collision Risk" states: "Marine mammals occur at relatively low abundance in the area of the Project". Given the fact that the proposed license intersects with the Rockabill to Dalkey Island SAC, where qualifying interest is the Harbour Porpoise, at an abundance of 1.87/km2 (O'Brien & Berrow, 2016), this seems like a very inappropriate comment. Within the same "Increased Collision Risk" assessment there is no attempt to quantify the risk of induced Temporary Threshold Shift (TTS) by the proposed license on Harbour Porpoises which reside within the Rockabill to Dalkey Island SAC, which also encompasses a busy (Dublin Port) shipping lane. TTS, a temporary audible deficit, results in marine mammals, such as porpoises being unable to adequately navigate and poses a likely significant risk of collision. As a 5km radius of TTS is proposed by the developer this would result in a significant number of porpoises at risk.	The comment suggests that the developer has suggested a TTS range of up to 5 km from the sound source. This is incorrect, the 5 km range suggested as the effective deterrence range for harbour porpoises from geophysical surveys, i.e., behavioural effects only (JNCC, 2020). TTS onset is, by definition, a temporary effect that may marginally affect the hearing sensitivity over a certain range of an individual for a few minutes, hours or days only and is not considered to affect survivability. Studies show that harbour porpoises show behavioural avoidance to impulsive sound (Tougaard[19] *et al.*, 2003; Lucke[20] *et al.*, 2009) Nevertheless, where TTS from impulsive noises is occur, they are found to affect a narrow frequency range for harbour porpoise (Finneran[21], 2015) therefore it would not reduce hearing frequency to levels which would

[19] Tougaard, J., Carstensen, J., Henriksen, O. D., Skov, H., and Teilmann, J. 2003. "Short-term effects of the construction of wind turbines on harbour porpoises at Horns Reef," Technical Report No. HME/362-02662, TechWise A/S, Hedeselskabet, Roskilde. 34

[20] Lucke, Klaus & Siebert, Ursula & Lepper, Paul & Blanchet, Marie-Anne. 2009. Temporary shift in masked hearing thresholds in a harbor porpoise (Phocoena phocoena) after exposure to seismic airgun stimuli. The Journal of the Acoustical Society of America. 125. 4060-70. 10.1121/1.3117443.

[21] Finneran, J. J. 2015. Noise-induced hearing loss in marine mammals: A review of temporary threshold shift studies from 1996 to 2015. The Journal of the Acoustical Society of America 138:1702-1726.

Submission Comments	ESB Response
	detrimentally affect navigation and increase collision risk from broadband noise sources such as vessel noise (Mckenna *et al.,* 2012[22]). For other marine mammal species studies conducted by Kastelein[23] *et al.* 2013 showed TTS in harbour seals, also found in the licence area, did not result in changed behaviour
Regardless of the % of Annex II species (harbour porpoises, Minke whale, Bottlenose dolphin, Risso's dolphin) experiencing a LSE, it appears that a LSE remains on both the Annex II species within the license area, as well as a LSE on the Qualifying Interest (QI) of Rockabill to Dalkey Island SAC (harbour porpoises). As such a derogation license would be required for the proposed survey.	LSE is determined for SACs within the SISAA submitted with this Foreshore Licence application and rationale for such is outlined therein. The Annex IV risk assessment considers the % of Annex IV species affected to enable the competent authority to determine whether a derogation Licence is required.
"FS007134 Risk Assessment for Annex IV Species" (p. 21, conclusion) states that: "Therefore, the surveys will not significantly affect the FCS of any marine Annex IV species as defined in the Habitats Directive and corresponding European Communities (Birds and Natural Habitats) Regulations 2011 - 2021, and it is considered that a derogation licence is not required for the surveys described." However, this is contradictory to the legal requirements outlined on page 5 of the same document, which states that Favourable Conservation Status (FCS) is only assessed whereby a derogation license is required. Favourable Conservation Status (FCS) has not been assessed in this document to this point and as such this is a false conclusion. The purpose of this assessment is to determine if there is a Likely Significant Effect (LSE) on any European Protected Species (EPS).	The purpose of the Risk Assessment for Annex IV Species assessment is to ensure the strict protection of marine Annex IV species.
Assessment of LSE contains no quantitative or semi-quantitative estimates and statements such as "the level of noise expected from survey activities above and below water is not considered to be significantly greater than existing vessel noise" are akin to saying "ah it'll be grand"; this is not the level of quality of assessment that is appropriate, given the ecologically sensitive nature of the area of the proposed site and is not what is expected under Article 6(3) of the Habitats Directive. Background noise at Dublin Port has been estimated to be approximately 113dB (Beck et al. (2013), McKeown (2014)), this is considerably below the 226dB in the proposed surveys (at 0.3 – 5kHz, i.e. within the peak audible range of sea birds). As such this statement has no validity and has not provided complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works. As all the findings of no LSE on bird colonies and SPAs in relation to noise in the NIS revolve around this statement, it can only be concluded that in the NIS presented that a LSE remains for all bird colonies and SPAs in the vicinity of the license area. This statement holds true for both over and underwater noise. A more in-depth assessment of transmission loss would be required in order to provided complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	The assessment that above and below water noise, resultant from vessel activity, will not be significantly greater than background levels of activity, is based on the very low level of vessel activity associated with the proposed SI works (at most several vessels active at any one time), compared to the moderate to very high levels of vessel activity throughout the application area (many daily movements of many vessels, including very large cargo ships and ferries). The assessment is not comparing the sound produced by the survey equipment to background noise in this case as the comment implies, rather it is the background noise emitted from the vessels themselves that is the point of comparison and as such it is completely relevant to say that the additional few vessels represents a negligible change in the baseline of vessel activity in the area and that no scientific doubt can be said to remain in this assessment's conclusion. Regarding the comment relating to impacts on bird colonies, the source levels from the survey equipment the comment references relate to underwater noise values 1 m from the source and as such the statement does not hold true for in-air noise as the two effects do not overlap.

[22] McKenna, M., Ross, D., Wiggins, S., and Hildebrand, J. 2012. Underwater radiated noise from modern commercial ships. The Journal of the Acoustical Society of America.
[23] Kastelein, R. A., R. Gransier, and L. Hoek. 2013a. Comparative temporary threshold shifts in a harbor porpoise and harbor seal, and severe shift in a seal (L). Journal of the Acoustical Society of America 134:13-16.

Submission Comments	ESB Response
	The applicant agrees that LSE could not be ruled out for all sites screened into the NIS in relation to in air and underwater noise where a route to impact existed, and as such they were progressed to the NIS (LSE are considered in the SISAA report). The assessment of potential adverse effects on the integrity of the relevant Natura sites are presented in the NIS. The NIS assesses the potential effects against the relevant conservation objectives and uses information on the location of each SPA to determine baseline levels of disturbance experienced and whether any effects from the proposed activities will adversely affect the conservation objectives through additional disturbance of the SCIs in question, and thus the integrity of the site. Therefore, it can be considered that the level of information provided is adequate for the Department to reach a conclusion where no reasonable scientific doubt remains in relation to the effects on the site.
NIS statements such as "A restriction to works within 1 km of South Dublin Bay and River Tolka Estuary SPA and North Bull Island SPA between the months of September March inclusive will eliminate the effect of noise or visual disturbance and prevent a pathway occurring that may result in a potential adverse effect to the wintering bird assemblages at this SPA" (p21-22) lack complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	Restriction of works to occur only beyond 1km of those SPAs during the period in which they are occupied by the non-breeding aggregations of SCIs for which they are designated is considered to be a conservative mitigation approach and sufficiently robust. References relating to SCI disturbance sensitivities are included in the assessment for these features, and these references for the basis of advised exclusion zones. For example, Cutts et al. 2013 - The Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning and Construction Projects, provides advice in relation to distances at within which consideration of noise and visual disturbance effects should be given for a range of wader and waterfowl species. In all cases these are much less than 1km.
Sampling within the boundary of SACs, the NIS provides statements, such as: "The footprint of the jack up and associated samples will however be negligible and not affect the overall sediment budget for the area which will be one of general accretion, and considering the very small and localised footprint of such activities (expected to be c. 2 no. within the SAC), it will have no effect on the quality, condition, or extent of habitats present." "In the intertidal a tracked vehicle may also be required to access the shore for construction of trial pits. Trial pits shall be machine dug using an excavator (either from a boat or from land depending on access) up to 5 metres depth. All material will be reinstated following completion of the tests at each trial pit. Following reinstatement, the community structure and function will return and no adverse effects on the integrity of the SAC will result." These statements provide no quantification of this disturbance and, as such, fail to provide complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	It can objectively be seen, without quantification, that the area of effect of the proposed impacts (for which the number of activities that might occur in the SAC is provided in the Application) will be negligible in the context of the large areas of habitat within the SACs which may be affected by the works. However, in order to provide some more context and to address the comment with as much information as possible, quantification of the areas has been provided below to show the negligibly small areas affected. The footprint of the jack up vessel and tracked vehicle trial pits, will only have the potential to impact the mudflats and sandflats not covered by seawater at low tide [1140] QI habitat type that occur below MHWS. Using a worse-case scenario of 2 jack up vessels in South Dublin Bay SAC, the estimated area of impact is < 0.01% of the mudflats and sandflats QI area within South Dublin Bay SAC. Should an intertidal tracked vehicle be used for trial pits, a worse -case scenario of 10 trail pits within South Dublin Bay SAC would potentially impact <0.002% if the QI area within the SAC. The Foreshore Licence application area covers circa 15% of North Dublin Bay SAC. A worse-case scenario of 1 jack up has been used to estimate the potential area of impact to the mudflats and sandflats QI area of <0.01% of that QI area within North Dublin Bay SAC. The estimated area of impact using a worse-case scenario of 4 trial pits within the mudflats and sandflats QI area of North Dublin Bay SAC is <0.002% of that habitat type within the SAC.

Submission Comments	ESB Response
Within the Supporting Information: Screening for Appropriate Assessment (p.13), the applicant states in relation to hearing damage thresholds for marine mammals: "Although these thresholds have since been updated (by Southall et al. (2019) and NOAA (2018)), it is the Southall et al. (2007) thresholds, upon which the 2014 DAHG (now DHLGH) guidance (on managing the risk to marine mammals from man-made sound sources in Irish waters) is based, which have been used to undertake this assessment." The NPWS (2014) guidelines "Guidance to manage the risk to marine mammals from manmade sound sources in Irish waters" is, as stated, a guidance document and in this case an outdated one. Regardless of the guidelines followed, it is on the onus of the Notice Party to carry out an Appropriate Assessment in compliance with the Habitats Directive and ensure that where a likely significant effect exists due to the proposed operations, that mitigation measures are put in place to eliminate that likely significant effect. If, after the application of mitigation measures a likely significant effect remains, as in this case, then the competent authority must reject the application. Therefore, it on the onus of the applicant to use the most up-to-date and accurate available at the time of the assessment. Table 3.3 provides outdated data in relation to auditory thresholds. The most up-to-date figures would estimate PTS for the Harbour porpoise at 202dB re 1µPa @1m (Southall et al., 2019).	The AA screening process concluded that there was nil or negligible likelihood of significant effects on marine mammals from the proposed SI works. However, with due regard to guidance on the strict protection of Annex IV species which occur in Irish waters (cetaceans (whales, dolphins, porpoises) and marine turtles), risk minimisation measures will be implemented in order to eliminate the potential for auditory injury and minimise potential behavioural effects and as such all designated sites considered were screened in accordingly and mitigation measures applied in the NIS. In all cases, application of the mitigation presented in the NIS will ensure that there is no adverse effect on the integrity of any Natura 2000 site where marine mammal species are a QI. The measures proposed will also be applied to seals and basking sharks (not Annex II). In addition, both sets of thresholds are presented in the Annex IV Risk Assessment report, along with an assessment against the Southall 2019 thresholds. In the event that a comparison against the 2019 thresholds is required all information is available to the Department in the application documents, though in summary the differences between 2007 and 2019 auditory injury SPLs are as follows: All three hearing groups' SPL threshold for PTS in the Southall 2007 are the same at 230 dB but are varied in the 2019 criteria (Low frequency: 219 and very high frequency: 202 with the high frequency cetacean threshold being the same as in 2007: 230).
Within the Supporting Information: Screening for Appropriate Assessment (p.14, footnote), the applicant assumes a potential impact range (TTS) for harbour porpoise of 5 km, based off Thompson et al. (2013) but no quantitative assessment is provided as to the reason for halving this distance. As such this assessment does not provide complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	The 5km impact range is only considered in relation to behavioural responses (not TTS) based upon JNCC 2020. The potential for TTS was also considered, and where there was potential for that effect it was mitigated (after screening in all sites and QI's in the SISAA to the NIS) in order to remove the potential pathway. The JNCC guidance which was published in 2020 is based on up-to-date scientific literature (Crocker & Fratantonio 2016, Crocker et al. 2019) and recommends using an effective deterrence range (i.e., behavioural effects) of 5 km for geophysical surveys.
The proposed survey is carrying out surveys within the Rockabill to Dalkey Island SAC, which has a qualifying interest of Harbour porpoises, using noise creating equipment (UHRS – Boomer/Sparker: 0.3–5kHz @ 226 dB, SBP – Pinger/Chirp: 500Hz to 16 kHz @225 dB) within the audible range of these species (100Hz-180kHz), which will exceed the PTS threshold of these porpoises (202dB, Southall et al., 2019) and they have screened them out (Supporting Information: Screening for Appropriate, p. 47). This decision to screen out the LSE of noise on harbour porpoises seems to be based on the statement: "the presence of the survey vessel is likely to lead to small-scale temporary displacement of animals resulting in them being a sufficient distance from the survey equipment so as not to be susceptible to the onset of either PTS or TTS". Either this is considered a mitigation measure in which it is incorrectly being assessed at stage 1 Appropriate Assessment or it is an incorrect finding and should be screened in. The probability of porpoises being present within the survey area at the time of onset of audible emission remains high and a LSE remains.	Potential for PTS was recognised in the assessment. However, the highly directional noise that is emitted from such survey equipment ensures that zones of effect are relatively small and are focussed beneath the survey equipment. The presence of animals within the survey area (i.e., Application Area) at the time of equipment activation does not constitute LSE as stated in the comment, as the level of effect (if any) will be variable depending upon the animal's proximity to the source. In Harbour Porpoise there is a documented response to vessel activity where animals start to move away from survey vessels, at distances of 800m from the vessel (Palka and Hammond (2001)[24]) which, when considering highly directional sources such as boomers and sparkers, is sufficient to ensure no PTS or TTS would arise. This displacement effect is not mitigation, but a case of one effect of the proposed activities influencing the way a second effect is received by the receptor (in this case as the animal has already been affected by displacement, it is considered to have no potential to receive

[24] Palka, D.L. and Hammond, P.S. (2001). Accounting for responsive movement in line transect estimates of abundance. Canadian Journal of Fisheries and Aquatic Sciences, vol. 58, pp. 777-787

Submission Comments	ESB Response
	the levels of noise required to induce PTS/TTS). Displacement is temporary and reversible (Thompson *et al* (2013)[25]) with suitable local habitat available. With PTS or TTS not considered to arise, and negligible effects of displacement, no LSE was concluded. Nevertheless, in recognition of the DAHG guidance, sites were subsequently screened in to the NIS in order that the DAHG guidance could be applied.
Supporting Information: Screening for Appropriate, p. 47 states that: "Using information on animal density (Table 4.2), and the equation πr2 (where r = 5 km as per Thompson et al., 2013) to calculate the area of the zone of potential effect, it has been estimated that there is potential for disturbance of a very small number of individuals of some species (less than 1% of their reference populations). Furthermore, any effects are likely to be temporary and reversible (animals are likely to return to affected sites within a few hours as documented by Thompson et al., 2013) with suitable alternative local habitat being available in the meantime." Taking a worst case scenario (Rockabill to Dalkey Island SAC), the density of harbour porpoises within that SAC is 1.87/km2 (O'Brien & Berrow, 2016), therefore the LSE on the SAC of TTS effects should be taken in relation to this density, therefore, given the area of considered effect (5km radius, 78.5km2) along with the area of the SAC (273km2), one would expect an impact on ~28% of the Rockabill to Dalkey Island SAC qualifying interest, i.e. the Harbour Porpoise. This certainly constitutes a LSE and as such contravenes the Habitats Directive.	This comment is referring to two separate assessments, 1. the potential for TTS, and 2. behavioural response. The 5 km range is only considered in relation to behavioural responses and is based upon guidance provided by JNCC (2020) as referenced in Section 4.1.2 of the SISAA report. The potential for TTS was considered and assessed accordingly in Section 4.2.2 of the SISAA report. Following the assessment presented within the SISAA, and in recognition of the DAHG guidance, all sites and QI's were screened in order that mitigation could be applied. With regards to the behavioural response assessment, even were the assessment to use the 1.87 animals / km ^{2} density estimate (JNCC (2020)), 147 individuals in the area, or 0.23% of the reference population, have the potential to be affected by behavioural effects to some degree within the 5 km range. As such, the conclusions of the assessment, based on <1% of the population being affected, remain.
Within the Supporting Information: Screening for Appropriate Assessment (p.48), the applicant screens out the LSE on collision for marine mammals by the statement: "Vessel strikes are a known cause of mortality and physical injury (with potential for subsequent infection) in marine mammals, particularly large whales. The species under consideration are considered to be more agile than the large whales and have been shown to avoid ships" As the onset of TTS is likely for a considerable population of the Rockabill to Dalkey Island SAC's QI (Harbour Porpoise, referred to previously), this is likely to cause a significant level of deterioration of the Harbour Porpoise navigation potential, essentially temporarily deafening them, as these species use auditory signals to navigate and feed. As the busy shipping lane of Dublin Port lies within the Rockabill to Dalkey Island SAC, this inhibition of the Harbour Porpoise's ability to navigate will inevitably result an increased collision risk and it is incorrect to screen it out at this point in the Appropriate Assessment	Both impacts of underwater noise and collision risk are considered to be assessed fully in the SISAA. TTS onset is, by definition, a temporary effect that may marginally affect the hearing sensitivity over a certain range of an individual for a few minutes, hours or days only. It should be noted that the potential for TTS to arise on any marine mammal is considered negligible through application of mitigation that the Applicant has committed to within the NIS. Nevertheless, even it were to occur, TTS from impulsive noises are found to only affect a narrow frequency range for harbour porpoise (Finneran[26], 2015) therefore not reducing hearing frequency to levels which would detrimentally affect navigation and increase collision risk from broadband noise sources such as vessel noise. Studies also show that harbour porpoises show behavioural avoidance to impulsive sound (Tougaard[27] *et al*., 2003; Lucke[28] *et al.*, 2009). For other marine mammal species studies conducted by Kastelein[29] *et al.* 2013 showed TTS in harbour seals, also found in the Application area, did not result in changed behaviour.

[25] Thompson, P.M., Brookes, K.L., Graham, I.M., Barton, T.R., Needham, K., Bradbury, G. and Merchant, N.D. (2013). Short-term disturbance by a commercial two-dimensional seismic survey does not lead to long-term displacement of harbour porpoises. Proceedings of the Royal Society B 280: 20132001

[26] Finneran, J. J. 2015. Noise-induced hearing loss in marine mammals: A review of temporary threshold shift studies from 1996 to 2015. The Journal of the Acoustical Society of America 138:1702-1726.

[27] Tougaard, J., Carstensen, J., Henriksen, O. D., Skov, H., and Teilmann, J. 2003. "Short-term effects of the construction of wind turbines on harbour porpoises at Horns Reef," Technical Report No. HME/362-02662, TechWise A/S, Hedeselskabet, Roskilde. 38

[28] Lucke, Klaus & Siebert, Ursula & Lepper, Paul & Blanchet, Marie-Anne. 2009. Temporary shift in masked hearing thresholds in a harbor porpoise (Phocoena phocoena) after exposure to seismic airgun stimuli. The Journal of the Acoustical Society of America. 125. 4060-70. 10.1121/1.3117443.

[29] Kastelein, R. A., R. Gransier, and L. Hoek. 2013a. Comparative temporary threshold shifts in a harbor porpoise and harbor seal, and severe shift in a seal (L). Journal of the Acoustical Society of America 134:13-16.

Submission Comments	ESB Response
Whelk is abundant in the license area, which is evidenced by the it being the primary commercial fishing activity. Whelk spawn here and are an important source of nutrition for local seabird colonies. Though it is accepted that many areas of the proposed license area the sediment is course (not all areas) and sediment will not remain suspended for long, the proposed activities will result in significant depth of local smothering of whelk and other benthic communities. No assessment or quantification of this aspect of the plan has been presented in the appropriate assessment. A development of the proposed size, combined with the cumulative impacts of previous and current developments, would result in a prolonged recovery period for the whelk, as there is no planktonic dispersal stage.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Whelks are not a species of QI within any of the Designated Sites/Annex I Habitats covered by the NIS and SISAA. Nevertheless, for the purposes of responding to the comment, it can be noted that impacts from suspended sediments and associated deposition on whelk and other shellfish species were not included within the accompanying report as it was deemed that this impact from SI activities will have a negligible effect on shellfish species as foreshore licence activities will result in negligible disturbances of sediment through collection of small quantities of sediment samples (approximately 0.011 ha of seabed will be disturbed within a licence area of 30,461 ha) for biological, chemical and physical analyses and some disturbance likely from the movement of mooring chains associated with metocean buoys for collection of metocean data. Given the negligible volumes of sediments being extracted and practically zero spilt during sediment sample extraction there will be negligible impacts on shellfish from these activities particularly when natural sediment mobilisation and deposition would be of several magnitudes greater than the sediments disturbed from SI activities. Even when considering cumulative effects associated with third party SI's the amount of sediment disturbed for redeposition would be negligible particularly when considering overall sediment transport within western areas of the Irish sea which has been calculated at up to 35% of sediments are mobilised per year.[30]
No assessment of the indirect effects of this smothering on Annex I habitats within SACs or birds from local SPAs has been carried out by the developer.	The NIS did fully consider the direct effects of increased Suspended Sediment Concentrations (SSC) and smothering from geotechnical, benthic and Metocean/acoustic surveys on Annex I habitat QIs, in addition to indirect effects that may arise as a result of elevated SSC. Bird SCIs are not subject to smothering impacts directly, however, impacts on prey species that may be affected by such indirect effects is fully assessed in the application documents including benthic food resource and fish prey species potentially affected.
The AA does not adequately assess or quantify the effect of the proposed development on the Annex IV family of Phocidae (Grey seals) at Lambay Island SAC, using figures and seal populations relevant to the SAC.	Lambay Island SAC is 8 km from the 5km effective deterrence range of the geophysical equipment (this will be a lot smaller for geotechnical works) for marine mammals therefore the information presented in the SISAA is considered to adequately assess the potential for Likely Significant Effects on theLambay Island SAC grey seal population.
The AA does not adequately assess or quantify the effect of the proposed development on Risso's dolphin or leatherback turtle, which have been recorded in the area (Arklow Bank Dumping at Sea EPA License). These European cetacean species are listed on Annex IV of the EU Habitats Directive (92/43) as species requiring strict protection.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites

[30] Coughlan, Mark & Guerrini, Marco & Creane, Shauna & O'Shea, Michael & Ward, Sophie & Van Landeghem, Katrien J.J. & Murphy, Jimmy & Doherty, Paul. (2021). A new seabed mobility index for the Irish Sea: Modelling seabed shear stress and classifying sediment mobilisation to help predict erosion, deposition, and sediment distribution. Continental Shelf Research. 229. 104574. 10.1016/j.csr.2021.104574.

Submission Comments	ESB Response
	concerned. Neither Risso's dolphin or leatherback turtle, are a species of QI within any of the Designated Sites covered by the NIS and SISAA. Both species have been correctly assessed in the Risk Assessment for Annex IV Species.
The AA does not adequately assess or quantify the effect of the proposed development on Tope shark (Galeorhinus galeus), which is of particular importance as the proposed development area is a known Tope shark nursery area (Ellis et al. (2012). Their long-life span and low birth rate make them particularly susceptible to species decline. Threats to the tope shark include habitat degradation in nursery areas, which makes the proposed license particularly precarious to them. Tope shark is listed under the IUCN Red List status as "vulnerable" and is protected under the Northern Ireland Priority Species List. The tope shark's range is large and are known to migrate to Strangford and Carlingford Loughs	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Tope sharks are not Annex II species and therefore a are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, for the purpose of responding to the comment, it can be noted that owing to the nature and scale of the proposed S.I. works the impact on fish habitats within the licence area will be negligible as the area which will be disturbed by SI activities will amount to approximately 0.011 ha from a licence area of 30,461 ha.
The AA does not adequately assess or quantify the effect of the proposed development on how seabed vibrations affect bottom dwelling fish or the hearing capabilities of sharks, rays and skates and invertebrates. Disturbance to the seabed equates to habitat loss for the angel shark (Squatina squatina) is a bottom-dwelling shark that spends most of the day buried in the sand. The angel shark has been declared extinct in the North Sea and locally extinct over part of its former range in the Irish Sea. Threats to the angel shark include being killed as bycatch and habitat degradation. The angel shark's long life span and low birth rate make it particularly susceptible to species decline. The angel shark is protected by the Northern Ireland Priority Species List, is listed on the Irish Red Data Book as critically endangered. The angel shark is also recognized by the IUCN and OSPAR in Ireland.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Sharks, ray and skates are not Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, for the purpose of responding to the comment, it can be noted that the only seabed vibrations associated with proposed activities would be from certain vibrocore and borehole drilling during collection of sediment samples. The vibrations created by this type of sampling would be highly localised with noise levels below adopted threshold for behavioural effects (they do not exceed injury threshold levels presented above for fish) within 20 m of the source[31]. The noise levels for remaining SI equipment (geophysical) and associated effects on elasmobranchs (sharks and rays) of which angel shark are associated do not have a swim bladder and therefore are only sensitive to particle motion across a small range of frequencies 250-1500 Hz[32]. Given the noise frequencies associated with geophysical survey equipment are predicted at frequencies above 1500hz injury and behavioural impacts to are unlikely as these fish species are not able to detect the noise associated with this equipment with the exception of UHRS sparker and boomer equipment, which are similar to seismic survey equipment used to detect oil and gas resources but with a much lower energy profile. However, impacts

[31] Erbe, Christine & Mcpherson, Craig. (2017). Underwater noise from geotechnical drilling and standard penetration testing. The Journal of the Acoustical Society of America. 142. 10.1121/1.5003328.
32 Popper et al. – 'Anthropogenic Sound: Effects on the Behavior and Physiology of Fishes', 2004

Submission Comments	ESB Response
	are highly unlikely given that there have been numerous studies that have shown there are no physical impacts associated with the higher energy seismic surveys[33][34]. In addition, the soft start procedure employed when using this equipment will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effects observed (fleeing) would be short term and temporary and therefore would not impact on the population of angel shark within the licence area. For invertebrates(shellfish) decapods are believed to be physiologically resilient to noise as they lack gas filled spaces within their bodies[35]. To date no lethal effects of underwater noise have been described for edible crab, European lobster or Norway Lobster however sub-lethal effects have been previously observed in shellfish including bruised hepatopancreas and ovaries in snow crabs and increase in respiration in brown shrimp and metabolic changes to edible crab[36][37]. There would be a negligible impact on fish habitats within the licence area as the area which will be disturbed by SI activities will amount to approximately 0.011 ha from a licence area of 30,461 ha.
The AA does not adequately assess or quantify the effect of the proposed development on the undulate ray (Raja undulata), which is a member of the skate and ray family. The flat, bottom dwelling fish is found throughout the Irish Sea. The undulate ray is listed on the IUCN Red List as endangered, recognised by the IUCN in Ireland, listed as UK Priority Species and protected under the Northern Ireland Priority Species List. The undulate ray is particularly sensitive to habitat degradation from human activity.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Undulate rays are not Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, owing to the nature and scale of the proposed S.I. works the impact on fish habitats within the licence area will be negligible There will be a negligible impact on fish habitats within the licence area as the area which will be disturbed by SI activities will amount to approximately 0.011 ha [a] from a licence area of 30,461 ha.
The application area is a nursery ground for spotted ray, thornback ray and the AA does not adequately assess or quantify the effect of the proposed development.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites. Spotted

[33] Australian Institute of Marine Science. "Seismic surveys have no significant impact on commercially valuable fish in NW Australia, study suggests." ScienceDaily. ScienceDaily, 19 July 2021. <www.sciencedaily.com/releases/2021/07/210719153511.htm>

[34] A.G. Carroll, R. Przeslawski, A. Duncan, M. Gunning, B. Bruce, A critical review of the potential impacts of marine seismic surveys on fish & invertebrates, Marine Pollution Bulletin, Volume 114, Issue 1, 2017, Pages 9-24,

[35] Popper, A., Salmon, M. & Horch, K. 2001. Acoustic detection and communication by decapod crustaceans. J Comp Physiol A 187, 83–89. https://doi.org/10.1007/s003590100184

[36] Payne, J.F., Andrews, C.A., Fancey, L.L., Cook, A.L. and Christian, J.R. 2007. Pilot Study on the Effect of Seismic Air Gun Noise on Lobster (Homarus Americanus)

[37] Solan, M., Hauton, C., Godbold, J. A., Wood, C. L., Leighton, T. G., & White, P. (2016). Anthropogenic sources of underwater sound can modify how sediment-dwelling invertebrates mediate ecosystem properties. Scientific reports, 6, 20540. https://doi.org/10.1038/srep20540

Submission Comments	ESB Response
	ray and thornback ray are not Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, for the purpose of responding to the comment, it can be noted that the only seabed vibrations associated with proposed activities would be from certain vibrocore and borehole drilling during collection of sediment samples. The vibrations created by this type of sampling would be highly localised with noise levels below adopted threshold for behavioural effects (they do not exceed injury threshold levels presented above for fish) within 20 m of the source[38]. The noise levels for remaining SI equipment (geophysical) and associated effects on elasmobranchs (sharks and rays) of which spotted ray, thornback ray are associated do not have a swim bladder and therefore are only sensitive to particle motion across a small range of frequencies 250-1500 Hz[39]. Given the noise frequencies associated with geophysical survey equipment are predicted at frequencies above 1500hz injury and behavioural impacts to are unlikely as these fish species are not able to detect the noise associated with this equipment. with the exception of UHRS sparker and boomer equipment, which are similar to seismic survey equipment used to detect oil and gas resources but with a much lower energy profile. However, impacts are highly unlikely given that there have been numerous studies that have shown there are no physical impacts associated with the higher energy seismic surveys[4041]. In addition, the soft start procedure employed when using this equipment will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effects observed (fleeing) would be short term and temporary and therefore would not impact on the population of spotted ray and thornback ray within the licence area. There will be a negligible impact on fish habitats within the licence area as the area which will be disturbed by SI activities will amount to approximately 0.011 ha from a licence area of 30,461 ha.
The AA does not adequately assess or quantify the effect of the proposed development on the Sandeel. Sandeel are an exceptionally important source of nutrition for local seabird colonies. Though it is accepted that many areas of the proposed license area the sediment is course (not all areas) and sediment will not remain suspended for long, the proposed activities will result in significant depth of local smothering of sandeel and other benthic communities. No assessment or quantification of this	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Sandeels are not Annex II species and therefore are not a species of QI within

[38] Erbe, Christine & Mcpherson, Craig. (2017). Underwater noise from geotechnical drilling and standard penetration testing. The Journal of the Acoustical Society of America. 142. 10.1121/1.5003328.

39 Popper et al. – 'Anthropogenic Sound: Effects on the Behavior and Physiology of Fishes', 2004

[40] Australian Institute of Marine Science. "Seismic surveys have no significant impact on commercially valuable fish in NW Australia, study suggests." ScienceDaily. ScienceDaily, 19 July 2021. <www.sciencedaily.com/releases/2021/07/210719153511.htm>

[41] A.G. Carroll, R. Przeslawski, A. Duncan, M. Gunning, B. Bruce, A critical review of the potential impacts of marine seismic surveys on fish & invertebrates, Marine Pollution Bulletin, Volume 114, Issue 1, 2017, Pages 9-24,

Submission Comments	ESB Response
aspect of the plan has been presented in the appropriate assessment. A development of the proposed size, combined with the cumulative impacts of previous and current developments, would result in a prolonged recovery period for the sandeel, as the license area is a known spawning ground for sandeel (Ellis et al. 2012). Sandeels live on the seabed in this area and the proposed development represents a real threat to the sandeel and their predators. Sandeels are keystone species and sandeel abundance have been shown to have direct effect on some seabird population and the breeding success of kittiwakes (red listed), terns (amber), fulmars (amber listed) and shags (amber listed). Sandeels are part of many food webs for other fish species and seabirds. No assessment of the indirect effects of this smothering on Annex I habitats within SACs or birds from local SPAs has been carried out by the developer. Sandeel are listed on the IUCN red list as a threatened species, it is on the UK BAP priority species list and the Northern Ireland priority species list.	any of the Designated Sites covered by the NIS and SISAA. However, the impact of the proposed works on fish prey species for birds is fully assessed in the SISAA, which determined that the footprint and nature of works mean prey related impacts were negligible and no LSE had the potential to arise. The SISAA and NIS documents provide an assessment on comparative habitats which will allow the Department to conclude that there is no potential for significant impacts to arise on these habitats and on any fish species that these habitats support.
The AA does not adequately assess or quantify the effect of the proposed development on the European eel (Anguilla Anguilla). It is expected that the proposed activities will result in significant depth of local smothering of European eel and other benthic communities. No assessment or quantification of this aspect of the plan has been presented in the appropriate assessment. A development of the proposed size, combined with the cumulative impacts of previous and current developments, would result in a prolonged recovery period for the European eel, as the license area is a known spawning ground for European eels. European eels live and spawn on the seabed in this area and the proposed development represents a real threat to the European eels and their predators. European eels feed off molluscs and crustaceans which will be in decline as the seabed will have been disturbed. European eel is critically endangered and the numbers of juvenile eels reaching the coast have declined in recent years due to barriers to migration and habitat loss. This proposed development will add to the habitat loss and migration barriers of this endangered species and prevent them from reproducing. They are sensitive to sound and vibration. They also have swim bladders and underwater sound pollution significantly affects the behaviour of juvenile eels in as they become disorientated and fall subject to prey, thus reducing the number of their population. European eels are listed on the Irish Red Data Book listed as critically endangered and recognised by the IUCN and OSPAR in Ireland.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. European eel is not an Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. This also applies to other benthic communities which are not designated Annex I habitats within SAC's. Nevertheless, for the purpose of responding to the comment, it can be noted that the proposed activities will not result in significant smothering of benthic species (see assessment of this effect in relation to Annex I habitats presented in SISAA). The low volumes of sediment that will be removed for analysis will result in negligible volumes of suspended sediment being released and will immediately become deposited onto the seabed. Eel are mobile fish species and therefore will not be impacted by deposition of sediments. Eels spawn in the Sargassos Sea (west Atlantic Ocean) so impacts from the SI activities on spawning will not occur as European eel does not spawn within the licence area[42]
The AA does not adequately assess or quantify the effect of the proposed development on the Basking Sharks (Cetorhinus maximus). Sightings data collected by the Marine Conservation Society (Bloomfield and Solandt, 2008) suggests that the waters in the vicinity of Kish Bank is an area of regular sightings and activity for Basking Sharks. Basking Sharks are endangered and recognised by the IUCN and OSPAR in Ireland. Their slow growth and reproductive rates make them particularly vulnerable to population decline and threats include collision with boats and habitat disturbance.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Basking Shark is not an Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, for the purpose of responding on a non-statutory basis basking sharks will not be impacted by the proposed S.I. works. The risk of vessel collision is considered minor given the slow vessel

[42] Miller, M.J., Westerberg, H., Sparholt, H., Wysujack, K., Sørensen, S.R., Marohn, L., Jacobsen, M.W., Freese, M., Ayala, D.J., Pohlmann, J.D., Svendsen, J.C., Watanabe, S., Andersen, L.F., Møller, P.R., Tsukamoto, K., Munk, P., & Hanel, R. 2019) Spawning by the European eel across 2000 km of the Sargasso Sea. Biology Letters, 15.

Submission Comments	ESB Response
	speed associated with the SI vessels, low numbers of vessels that will be used compared with existing baseline which represents much higher vessel movements. Marine mammal observers will also be on board the survey vessels so will be able to detect basking sharks in the vicinity of the vessel.
The AA does not adequately assess or quantify the effect of the proposed development on Herring (clupeiformes) are listed in the Habitats Directive Annex II. In Kish sprat were the most abundant fish in terms of numbers caught followed by herring and poor cod. Annex II Herring are hearing specialist species of highly sensitive with mechanisms that couple the swim bladder in inner ear. Seabed removal and suspended sediment would lead to loss of habitat preventing the development of juveniles. Noise vibration can affect juveniles, particularly noise sensitive species such as herring and noise generalists such as cod and cause physiological stress. The current application area is a nursery and a spawning ground for cod. The proposed development would have a negative impact on the development of juveniles of cod.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Herring and Cod are not Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, impacts to hearing specialists such as herring are considered to be negligible. While herring can be considered more sensitive (a threshold level of 203 SPL pk dB re 1 uPa for temporary injury and 207 SPL pk dB re 1 uPa for mortal injury for range of frequencies[43]) the range in which underwater noise levels will be above this threshold level will likely be <10 m from the noise source for sidescan sonar and sub bottom profiling[44], some behaviour effects are likely within <100m of the noise source[45]. The injury distance ranges presented are for the maximum noise level emitted from the SI equipment but the risk to fish injury will be considerably lower as the expected fleeing behaviour of fish from the area when exposed to higher levels of noise and the soft start procedure employed will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will further mitigate any impact predicted and will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effects observed (fleeing) would be short term and temporary and therefore would not impact on the population of herring within the licence area. There would be a negligible impact on fish habitats within the licence area as the area which will be disturbed by SI activities will amount to approximately 0.011 ha from a licence area of 30,461 ha.
Nursery grounds are sites where juveniles occur at higher densities, have reduced rates of predation and have faster growth rates than in other habitats. Seabed disturbance is anticipated to have a potential impact on the nursery grounds where seabed removal and the suspended sediment plume can potentially lead to a loss of habitat, preventing the development of juveniles. Noise and vibration	The area of seabed disturbance that could impact on benthic spawning species such as herring is considered negligible (approximately 0.011 ha within a licence area of 30,461ha). Impacts to cod from noise impacts associated with SI activities are considered to be negligible particularly as cod do not have swim bladders that are connected to the ear and

[43] Popper, Arthur & Hawkins, Anthony & Fay, Richard & Mann, David & Bartol, Soraya & Carlson, Thomas & Coombs, Sheryl & Ellison, William & Gentry, Roger & Halvorsen, Michele & Løkkeborg, Svein & Rogers, Peter & Southall, Brandon & Zeddies, David & Tavolga, William. (2014). Sound Exposure Guidelines. 10.1007/978-3-319-06659-2_7

[44] Zykov, Mikhail et al. 2013. South Stream Pipeline – Turkish Sector – Underwater noise Analysis. JASCO Document 00699, Version 1.0. Technical Report by JASCO Applied Sciences for South Stream Transport B.V.

[45] Gall, Yves Le. "Acoustic impact assessment of sub-bottom profilers on marine mammals." (2016)

Submission Comments	ESB Response
caused by seabed disturbance can also potentially affect juveniles within the localised area, particularly noise sensitive species such as cod (vulnerable), potentially causing physiological stress.	therefore are only sensitive to particle motion across a small range of frequencies 250-1500 Hz[46]. Given the noise frequencies associated with geophysical survey equipment are predicted at frequencies above 1500hz injury and behavioural impacts are unlikely as these fish species are not able to detect the noise associated with this equipment with the exception of UHRS sparker and boomer equipment, which are similar to seismic survey equipment used to detect oil and gas resources but with a much lower energy profile. However, impacts are highly unlikely given that there have been numerous studies that have shown there are no physical impacts associated with the higher energy seismic surveys[47][48]. In addition, the soft start procedure employed when using this equipment will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effect observed (fleeing) will be short term and temporary and therefore will not impact on the nursery grounds within the licence area.
The applicant's "Supporting Information: Screening for Appropriate Assessment" states (p.16): "Not all of the Annex II diadromous fish QIs are suspectable to underwater noise. Fish species are either hearing specialists where intricate connections from the swim bladder to the inner ear allow the perception of underwater noise; or hearing generalists where there is no connection with the swim bladder and therefore little or no perception of underwater noise. It is considered that only hearing specialist species are sensitive to underwater noise, and that no route to impact exists for hearing generalists." This is clearly false and incorrect for cod which are hearing generalists where the proposed development is the cod (Gadus morhua) is a member of the gadoid fish family. The cod is protected under the Northern Ireland Priority Species List because it meets the following criteria: o IUCN Red List status is "vulnerable;" o Listed as a UK priority species; o Declining population. o The cod is also recognized by OSPAR in Ireland.	Cod are not Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Impacts to cod from noise impacts associated with SI activities are considered to be negligible particularly as cod do not have swim bladders that are connected to the ear and therefore are only sensitive to particle motion across a small range of frequencies 250-1500 Hz[49]. Given the noise frequencies associated with geophysical survey equipment are predicted at frequencies above 1500hz injury and behavioural impacts to are unlikely as these fish species are not able to detect the noise associated with this equipment with the exception of UHRS sparker and boomer equipment, which are similar to seismic survey equipment used to detect oil and gas resources but with a much lower energy profile. However, impacts are highly unlikely given that there have been numerous studies that have shown there are no physical impacts associated with the higher energy seismic surveys[50][51]. In addition, the soft start procedure employed when using this equipment will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed

46 Popper et al. – 'Anthropogenic Sound: Effects on the Behavior and Physiology of Fishes', 2004

47 Australian Institute of Marine Science. "Seismic surveys have no significant impact on commercially valuable fish in NW Australia, study suggests." ScienceDaily. ScienceDaily, 19 July 2021. <www.sciencedaily.com/releases/2021/07/210719153511.htm>

48 A.G. Carroll, R. Przeslawski, A. Duncan, M. Gunning, B. Bruce, A critical review of the potential impacts of marine seismic surveys on fish & invertebrates, Marine Pollution Bulletin, Volume 114, Issue 1, 2017, Pages 9-24,

49 Popper et al. – 'Anthropogenic Sound: Effects on the Behavior and Physiology of Fishes', 2004

50 Australian Institute of Marine Science. "Seismic surveys have no significant impact on commercially valuable fish in NW Australia, study suggests." ScienceDaily. ScienceDaily, 19 July 2021. <www.sciencedaily.com/releases/2021/07/210719153511.htm>

51 A.G. Carroll, R. Przeslawski, A. Duncan, M. Gunning, B. Bruce, A critical review of the potential impacts of marine seismic surveys on fish & invertebrates, Marine Pollution Bulletin, Volume 114, Issue 1, 2017, Pages 9-24,

Submission Comments	ESB Response
	will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effect observed (fleeing) will be short term and temporary and therefore will not impact on the population of cod within the licence area.
The AA does not adequately assess or quantify the effect of the proposed development Spawning grounds which are recorded within the vicinity of the application area for the key commercial species; spawning grounds are located for the following species: i. Cod; ii. Sandeel; iii. Whiting; iv. Plaice; v. Sole; vi. Ling; and vii. Mackerel.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Spawning grounds for Cod, Sandeel, Whiting, Plaice, Sole, Ling and Mackerel are not Annex I Habitats and these fish species are not Annex II species and therefore the species as well as their spawning grounds are not a species or habitat of QI within any of the Designated Sites covered by the NIS and SISAA. Of the species spawning grounds that are particularly sensitive to development are Sandeel. Sandeel lay their eggs on the seabed and therefore disturbance to seabed habitats in which sandeel spawn could be impacted. However, there will be a negligible impact on sandeel spawning habitats within the licence area as the area which will be disturbed by SI activities will amount to approximately 0.011 ha from a licence area of 30,461 ha. The remaining species (Cod, Whiting, Plaice, Sole, Ling and Mackerel) are unlikely to be impacted as they are considered pelagic spawners, in that they spawn in the water column, and therefore exposure / risk of impact from SI activities is very small. There is potential exposure of fish eggs and larvae to underwater noise levels generated by geophysical survey equipment however the extent of impact is likely to be highly localised particularly given the wideranging extent of the spawning grounds identified within Irish waters and therefore the impact would be negligible.
The AA does not adequately assess or quantify the effect of the proposed development nursery grounds which are located withing the application area for species such as cod, anglerfish, tope shark, spotted ray and whiting.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Nursery grounds for Cod, Anglerfish, Tope Shark, Spotted Ray and Whiting are not Annex I Habitats and these fish are not Annex II species and therefore are not a species or habitat of QI within any of the Designated Sites covered by the NIS and SISAA. Nevertheless, for the purpose of responding to the comment, it can be noted that the only seabed vibrations associated with proposed activities would be from certain vibrocore[52]. Impacts to these fish species from noise impacts associated with SI activities are considered to be negligible particularly as these species do not have a connection between the ear and the swimbladder or lack a swimbladder entirely (tope shark and spotted ray) that are

[52] Erbe, Christine & Mcpherson, Craig. (2017). Underwater noise from geotechnical drilling and standard penetration testing. The Journal of the Acoustical Society of America. 142. 10.1121/1.5003328.

Submission Comments	ESB Response
	connected to the ear and therefore are only sensitive to particle motion across a small range of frequencies 250-1500 Hz[53]. Given the noise frequencies associated with geophysical survey equipment are predicted at frequencies above 1500hz injury and behavioural impacts to are unlikely as these fish species are not able to detect the noise associated with this equipment with the exception of UHRS sparker and boomer equipment, which are similar to seismic survey equipment used to detect oil and gas resources but with a much lower energy profile. However, impacts are highly unlikely given that there have been numerous studies that have shown there are no physical impacts associated with the higher energy seismic surveys[5455]. In addition, the soft start procedure employed when using this equipment will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effects observed (Fleeing) behaviour would be short term and temporary and therefore would not impact on the population of fish within the licence area. There would be a negligible impact on habitats associated with fish nursery grounds within the licence area as the area which will be disturbed by SI activities will amount to 0.011 ha from a licence area of 30,461 ha.
The AA does not adequately assess or quantify the effect of the proposed development on Annex IV Animals and plant species of community interest in need of strict protection (from Habitat Directive) Sturgeons Annex IV of Habitat Directive (sturgeons are bony fish) and the last sturgeon was identified in the application area and the marlin mapped it in the application area also (here).	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Sturgeons are protected by Annex IV of the European Habitats Directive, under Schedule 2: European Protected Species (EPS) of Animals. However, they are not listed on Annex II and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. Sturgeons are not considered to be present in UK or Irish waters (the record shown on Marlin is cited as 1966, however no written record of that catch exists). Due to this lack of presence, they are not considered in the Annex IV Risk Assessment.
AA does not adequately assess or quantify the effect of the proposed development as a spawning ground for plaice sole; ling; mackerel all which are will be affected.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the sites concerned. Spawning grounds for Sole, Ling and Mackerel are not Annex I Habitats, and

53 Popper et al. – 'Anthropogenic Sound: Effects on the Behavior and Physiology of Fishes', 2004

54 Australian Institute of Marine Science. "Seismic surveys have no significant impact on commercially valuable fish in NW Australia, study suggests." ScienceDaily. ScienceDaily, 19 July 2021. <www.sciencedaily.com/releases/2021/07/210719153511.htm>

55 A.G. Carroll, R. Przeslawski, A. Duncan, M. Gunning, B. Bruce, A critical review of the potential impacts of marine seismic surveys on fish & invertebrates, Marine Pollution Bulletin, Volume 114, Issue 1, 2017, Pages 9-24,

Submission Comments	ESB Response
	these fish are not Annex II species and therefore their spawning grounds are not a species or habitat of QI within any of the Designated Sites covered by the NIS and SISAA. All the species mentioned in the comment are considered pelagic spawners in that they spawn in the water column. Therefore, the risk of exposure to SI activities is very small. There is potential exposure of fish eggs and larvae to underwater noise levels generated by geophysical survey equipment however the extent of impact is likely to be highly localised particularly given the wide-ranging extent of the spawning grounds identified within Irish waters and therefore the impact is predicted to be negligible.
A number of migratory fish are also known to utilise the rivers and the coastal waters of the east coast of Ireland and hence have the potential to migrate through the general area of the application. These species include Atlantic salmon (Salmo salar), trout (Salmo trutta), European eel (Anguilla anguilla), sea lamprey (Petromyzon marinus), European sturgeon (Acipenser sturio), twaite shad (Alosa fallax) and allis shad (Alosa alosa). AA does not adequately assess or quantify the effect of the proposed development on the Atlantic salmon (Salmon salar), which is a member of the Salmonidae family. Threats to the Atlantic salmon are habitat degradation and the creation of barriers to migration which will most likely result from this proposed development. The Atlantic salmon is protected under the Northern Ireland Priority Species List because it meets the following criteria: o Declining population; o Listed in Annexes II and V of the Habitats Directive	SACs designated for migratory fish with potential connectivity to the Application Area have been assessed in the SISAA report Section 4.1.4 and 4.2.4.8. All potential effects on migratory fish QIs from the works are considered. Additional effects such as those described in the comment are not applicable to the SI works proposed under this Foreshore Licence application, however any application for future development would consider them if deemed relevant. There will be a negligible impact on habitats associated with fish nursery grounds within the licence area as the area which will be disturbed by SI activities will amount to 0.011 ha from a licence area of 30,461 ha. In terms of SI activities causing barrier effects the extent of noise signature of propose geophysical survey equipment is highly directional and therefore will be localised ensuring this will not present a barrier to migratory fish species within the licence area.
The potential effects of the proposed disturbance to the seabed are likely to interact with spawning grounds to generate a significant impact due to suspended sediment and seabed disturbance. Therefore, the potential effects of the proposed seabed disturbance are likely to interact with nursery grounds to generate a significant impact.	The proposed S.I. works will have a negligible impact on habitats associated with fish spawning and nursery grounds within the licence area as the area which will be disturbed by SI activities will amount to 0.011 ha from a licence area of 30,461 ha.
AA does not adequately assess or quantify the effect of the proposed development potential impacts associated with fisheries relate to habitat removal caused by seabed disturbance and the associated release of the suspended sediment plume, potentially leading to displacement of fish in the vicinity of the sediment plume area. Noise and vibration caused by seabed levelling is also anticipated to impact upon fish species in the localised area, particularly noise specialists such as cod and herring, which are relatively sensitive to sound.	There would be a negligible impact on fish habitats within the licence area as the area which will be disturbed by SI activities will amount to approximately 0.011 ha from a licence area of 30,461 ha. Seabed levelling is not an activity proposed in this Foreshore Licence application.
AA does not adequately assess or quantify the effect of the proposed development the food chain.	It should be noted that the SISAA and NIS submitted with this Foreshore Licence application relates only to proposed SI works and not any proposed development works. Also note that impacts of proposed SI works upon seabird prey species are considered in Table 4.8 of the SISAA. Furthermore, as proposed works are localised and would take place only for short durations in any particular location, should any displacement of prey species occur as a result of proposed works, any such impacts would be spatially and temporally very limited. At any given time during the course of proposed works the vast majority of prey species would experience no impacts in association with the works. Any impacts upon prey species would therefore be negligible and no LSE is concluded accordingly.

Submission Comments	ESB Response
Benthic flora and fauna are anticipated to be directly impacted by seabed disturbance. Habitat removal will result in the loss of benthic communities within the application area including the removal of both infauna and epifauna. Potential impacts on benthic communities will also have secondary impacts on species which prey upon benthic invertebrates further up the food chain such as eels.	Impacts on benthic flora and fauna within European designates sites has been presented in the SISSA and NIS. Owing to the nature and scale of the proposed S.I. works any direct or indirect impact on benthic flora and fauna will be negligible.
Sandeels are keystone species found on codling sand bank and sandeel abundance have been shown to have direct effect on some seabird population and the breeding success of kittiwakes (red listed), terns (amber), fulmars (amber listed) and shags (amber listed). Sandeels are part of many food webs for other fish species and seabird	Even though Sandeels are not Annex II species or a QI of any designated sites, the impact on bird prey species was assessed, which determined that the footprint and nature of works mean prey related impacts will be negligible, as the proposed SI works are localised and would take place only for short durations in any particular location. However, should any displacement of prey species occur as a result of the proposed SI works, any such impacts would be spatially and temporally very limited. At any given time, during the course of the proposed SI works, the vast majority of prey species would experience no impacts in association with the works. We consider that a fully adequate assessment has been undertaken in relation to this.
AA does not adequately assess or quantify the effect of the proposed development on the Annex IV atheriniformes Ray finned fish atherina presbyter sand smelt (bony fish) listed in the Habitat Directive and goby fish listed in Annex II of habitats directive.	Annex IV fish, such as Ray finned fish and smelt are not Annex II species and therefore are not a species of QI within any of the Designated Sites covered by the NIS and SISAA. There will be a negligible impact on fish habitats within the licence area as the area which will be disturbed by SI activities will amount to 0.011 ha from a licence area of 30,461 ha. The Goby species listed on Annex II are either freshwater species or species only present in the Mediterranean region and as such no connectivity exists with these QI's and therefore no assessment was required.
A does not adequately assess or quantify the effect of the proposed development the emission of methane gas as a result of working or being in the vicinity of the application area due to the known kish bank reserves in the application area.	Effects on designated sites are all described and assessed within the SISAA/NIS. Effects on natural processes outwith designated sites (or those not connected to the designated features of the designated sites)) are not part of the AA process.
The Habitats Directive and OSPAR are intended to protect species that are at risk of Extinction; they protect the habitat in which they exist. The application area is the habitat of threatened, endangered and critically endangered species and the AA does not adequately assess this. This proposed development should be prevented under the Wildlife (Ireland) Acts, 1976 & 2000 as "wilful interferences with the breeding place of a protected species." In order to fulfil Ireland's obligations under the Habitats Directive, OSPAR, and its own laws, the proposed development should be declined as it's AA does not adequately assess or quantify the effect of the proposed development.	The information presented in support of the departments requirements to undertake their Appropriate Assessment under the Habitats Directive is considered adequate and covers all potentially affected Natura 2000 sites. The scope of the Foreshore Licence application relates to proposed SI works only.
The AA does not adequately assess or quantify the effect of the proposed development on the Allis shad (Alosa alosa) is a member of the herring family. The fish lives in coastal waters and estuaries for most of its life but migrates into rivers to spawn. Threats to the Allis shad include the construction in their migratory paths, habitat degradation and water pollution, all of which will result from this proposed development. The Allis shad is listed under the Northern Ireland Priority List because it meets the following criteria: o Listed as a UK priority species; o Irish Red Data Book classified as vulnerable o The Allis shad is also recognized by the Habitats Directive and OSPAR. o The twaite shad (scientific name: Alosa fallax) is a member of the herring family, o similar in appearance to the Allis	Migratory fish QI's (and thus relevant SAC's) with connectivity to the Application Area are considered to be sufficiently assessed. No potential connectivity with any Natura 2000 Site where Allis Shad is listed as a qualifying feature were identified. The scope of the Foreshore Licence application relates to proposed SI works only and not construction. Impacts to hearing specialists such as herring of which shad are a member are considered to be negligible. While herring can be considered more sensitive to noise (a threshold level of 203 SPL pk dB re 1 uPa (Popper et al 2014)) the range in which underwater noise levels will be above this threshold level will likely be a maximum of <10 m from the noise source

Submission Comments	ESB Response
shad. Spending most of its life in coastal waters, the o fish migrates upstream in the spring to spawn. Like the Allis shad, threats to the twaite o shad include disruption to the seabed and other migratory route obstructions, habitat degradation, o pollution all of which will result from the proposed development. The twaite shad is also recognized by the Habitats Directive and IUCN in Ireland. The twaite shad is protected under the Northern Ireland Priority Species List • because it meets the following criteria: • Listed as a UK priority species • Irish Red Data Book classified as vulnerable	for sidescan sonar and sub bottom profiling some behaviour effects are likely within <100m of the noise source[56][57]. The injury distance ranges presented are for the maximum noise level emitted from the SI equipment but the risk to fish injury will be considerably lower as the expected fleeing behaviour of fish from the area when exposed to higher levels of noise and the soft start procedure employed will ensure that fish will not be exposed to levels that could cause injury. The soft start procedure proposed will be implemented both on a day-to-day basis and on the re-start after any stoppages in activity. This will further mitigate any impact predicted and will ensure that fish have sufficient time to vacate the areas where injury may occur prior to noise levels reaching that level. The behavioural effects observed (Fleeing) would be short term and temporary and therefore would not impact on the population of Allis shad within the licence area.
2. Insufficient Evidence or Mitigation Measures: There is insufficient evidence that the proposed works, individually, or in combination with other plans or projects, is unlikely to have a significant effect on any European Site/s subject to specific mitigation measures. AA screening information in relation to matters including the bird species studied, the impact of underwater noise on bird species, a lack of clarity in relation to the proximity criteria and zone of influence used in screening sites and a failure to present evidence to support conclusions in relation to in combination effects.	Effects of underwater noise on ornithological SCIs are considered in the SISAA (see Section 3.1 and Section 4.2.1). Section 4.1 of the SISAA sets out the rationale for including various European sites for assessment. In Combination effects are addressed within Section 4.2 of the SISAA report for all relevant plan/projects (As identified in Appendix C of the SISAA Report) and Section 3 of the NIS. Mitigation measures are addressed in the NIS and deemed sufficiently robust to eliminate adverse effects on site integrity.
Likely significant effects in combination with other plans or projects were not assessed, including combined effects of past investigations in the area.	An in-combination assessment was undertaken within Section 4.2 of the SISAA report for all relevant plan/projects (see Appendix C of the SISAA Report) in the vicinity of the proposed works and included works which were considered to overlap spatially and/or temporally.
Granting of benthic grabs/trawls, without preceding drop down camera, ROV or SCUBA dives of the site is poor international practice and may result in the damage to sensitive habitats.	Mitigation in relation to sensitive habitats and direct disturbance are included within each SAC assessment in Section 3.3 of the NIS.
The license application states, regarding Codling Fault Zone SAC that: "In order to ensure no adverse effects on the conservation objective of the SAC, mitigation will be put in place to ensure that no extractive survey methods (or placement of anchors or jack up legs) cause damage to these qualifying interests. This will be achieved by using geophysical survey data to identify the locations of potential Annex I habitat. Any areas of potential reef will be avoided through micrositing of equipment or survey location." The exact methods used and features which the development company considers to be inclusive of an Annex I habitat in this regard and clear go/no-go features should be outlined. Without this, the mitigation measures do not contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	The mechanisms for identifying reef habitat and avoiding it as presented in Section 3.3 are standardly applied mitigation measures for offshore projects. ESB can confirm that there is no requirement to undertake intrusive SIs within Codling Fault Zone SAC.
"FS007134 Risk Assessment for Annex IV Species" (p. 18) states that: "It is considered that standard mitigation measures, as detailed in the 2014 Department of Arts, Heritage and Gaeltacht (DAHG) Guidance and outlined below such as pre-start monitoring and ramp-up ("soft-start"), will prevent	This appears to be a statement only.

[56] Zykov, Mikhail et al. 2013. South Stream Pipeline – Turkish Sector – Underwater noise Analysis. JASCO Document 00699, Version 1.0. Technical Report by JASCO Applied Sciences for South Stream Transport B.V.
[57] Gall, Yves Le. "Acoustic impact assessment of sub-bottom profilers on marine mammals." (2016).

Submission Comments	ESB Response
individual animals from having the potential to be exposed to the risks outlined in Section 5." The mitigation measures outlined in the outdated 2014 Department of Arts, Heritage and Gaeltacht (DAHG) Guidance are adequate to avoid LSE on marine mammals.	
"FS007134 Risk Assessment for Annex IV Species" section "7.1 Mitigation Measures for Geophysical Equipment" states that 'soft start-up' and other mitigation measures will only be implemented "where the equipment has the capacity", therefore, a worst-case scenario should be adapted and, given that assessments in previous sections of this document rely on these mitigation measures to determine no LSE, this indicates that a LSE remains.	The Annex IV risk assessment is used to ensure the strict protection of Annex IV species. As such, conclusions around LSE do not apply here. Nevertheless, the uncertain capacity for soft start (and thus the worst case of no potential for that soft start) is considered in the conclusions of the Annex IV Assessment. The application of other mitigation committed to (such as pre-start monitoring) is not affected by the ability of equipment to soft start and will be applied as stated.
"FS007134 Risk Assessment for Annex IV Species" (p. 18) states that: "If there is a break in sound output from the SPB (or other audible source with source level above the threshold for auditory injury) for a period greater than 30 minutes (e.g. due to equipment failure, shut-down, survey line/station change) then all presurvey monitoring measures and ramp-up (where this is possible) will recommence prior to re-starting" However, no quantifiable justification for the 30 minute duration is presented and therefore the mitigation measure does not contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	The standard mitigation measures, as detailed in the 2014 Department of Arts, Heritage and Gaeltacht (DAHG) Guidance provide this 30 minute duration for breaks in sound output. It is at the discretion of the regulatory body to adopt a shorter break limit (as outlined in the mitigation guidelines).
"FS007134 Risk Assessment for Annex IV Species" (p. 18) states that "Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is 165 - 170 dB re 1 µPa @ 1 m or lower"…." Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is 165 - 170 dB re 1 µPa @ 1 m or lower." However, no quantifiable justification for the 40 minute duration is presented and therefore the mitigation measure does not contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	This is the standard mitigation measure, as detailed in the 2014 Department of Arts, Heritage and Gaeltacht (DAHG) Guidance.
Natura Impact Statement, Table 2.1 indicates that Geophysical surveys "may also incorporate visual surveys (e.g. drop-down video, ROV, etc.)" however, no inclusion of visual surveys are mentioned in under Geotechnical surveys. Visual surveys should precede Geotechnical surveys and relevant Environmental/Ecological surveys in every case, or at minimum where reef structures exist in the vicinity of the geotechnical survey. If this is not consistently the case, then a LSE on reef structures remains.	The mechanisms for identifying reef habitat and avoiding it as presented in Section 3.3 of the NIS are standardly applied mitigation measures for offshore projects.
In relation to mitigation measures in place to avoid disturbance of Mytilus edulis beds, it is stated (Natura Impact Statement, p.24) that: "All work undertaken in the intertidal by tracked vehicles will avoid the area of Mytilus edulis (plus a suitable buffer to ensure their structural integrity), the boundary of which will be delineated through a survey of the area prior to such work commencing"	As stated in the NIS, avoidance of the area of the *Mytilus* beds is a clearly defined commitment and will avoid any direct effect on the habitat. As such, it can be concluded that no adverse effects on the integrity of the site will arise as a result of effects on the *Mytilus* bed.

Submission Comments	ESB Response
This mitigation measure is not sufficiently defined to eliminate a LSE on the Mytilus edulis reef. Therefore, a conclusion of no LSE could not be accurately determined within this NIS as stated.	
In relation to mitigation measures in place to avoid disturbance of Ammophila arenaria, it is stated (Natura Impact Statement, p.26) that: "Access tracks will avoid areas of Shifting dunes along the shoreline with Ammophila arenaria (white dunes) wherever possible" This mitigation measure is not sufficiently defined to eliminate a LSE on the Ammophila arenaria. Therefore, a conclusion of no LSE could not be accurately determined within this NIS as stated.	The comment does not reflect the full assessment text (see Section 3.3 of the NIS report). Mitigation to protect sensitive features is included in the NIS which rules out potential for adverse effects on site integrity alone or in-combination. The full suite of mitigation committed to in relation to this assessment is as follows: • All work undertaken in the intertidal by tracked vehicles will avoid the area of shifting dunes along the shoreline with Ammophila arenaria (white dunes) (plus a suitable buffer to ensure their structural integrity), the boundary of which will be delineated through a survey of the area prior to such work commencing; • Movement of tracked vehicles in the intertidal will be restricted to the minimum number of access tracks necessary to achieve the sampling. • Access tracks will avoid areas of Shifting dunes along the shoreline with Ammophila arenaria (white dunes) wherever possible; and • Works on the intertidal using a tracked vehicle will be overseen by an Ecological Clerk of Works to ensure adherence to the above measures. With the proposed mitigation measures (which are considered to be sufficiently detailed or absolute to allow determination of effectiveness), no potential adverse effects to any conservation objectives will arise for this QI from the proposed activities alone or in combination with other plans and projects and there will therefore be no adverse effects upon site integrity [alone or in combination] associated with the proposed site investigation works.
In relation to mitigation measures in place to avoid disturbance of Fixed coastal dunes with herbaceous vegetation (grey dunes), it is stated (Natura Impact Statement, p.27) that: "Access tracks will avoid areas of Fixed coastal dunes with herbaceous vegetation (grey dunes) wherever possible" This mitigation measure is not sufficiently defined to eliminate a LSE on the Fixed coastal dunes with herbaceous vegetation (grey dunes). Therefore, a conclusion of no LSE could not be accurately determined within this NIS as stated.	The comment does not reflect the full assessment. Mitigation to protect sensitive features is included in the NIS which rules out potential for adverse effects on site integrity. The full suite of mitigation committed to is as follows: All work undertaken in the intertidal by tracked vehicles will avoid the area of Fixed coastal dunes with herbaceous vegetation (grey dunes) (plus a suitable buffer to ensure their structural integrity), the boundary of which will be delineated through a survey of the area prior to such work commencing; • Movement of tracked vehicles in the intertidal will be restricted to the minimum number of access tracks necessary to achieve the sampling. Access tracks will avoid areas of Fixed coastal dunes with herbaceous vegetation (grey dunes) wherever possible; and • Works on the intertidal using a tracked vehicle will be overseen by an Ecological Clerk of Works to ensure adherence to the above measures. With the proposed mitigation measures, no potential adverse effects to any conservation objectives are identified for this QI from the project work alone or in combination with other

Submission Comments	ESB Response
	plans and projects and there will therefore be no adverse effects upon site integrity associated with the proposed site investigation works.
In relation to mitigation measures in place to avoid disturbance of Humid dune, it is stated (Natura Impact Statement, p.28) that: "Access tracks will avoid areas of humid dune slacks wherever possible" This mitigation measure is not sufficiently defined to eliminate a LSE on the Humid dune. Therefore, a conclusion of no LSE could not be accurately determined within this NIS as stated.	The comment does not reflect the full assessment. Mitigation to protect sensitive features is included in the NIS which rules out potential for adverse effects on site integrity. The full suite of mitigation committed to is as follows: Tracked vehicles can cause considerable surface disturbance, especially for sensitive marine habitats. Mitigation measures will be put in place to ensure no potential adverse impacts to any conservation objectives. Mitigation will entail: • All work undertaken in the intertidal by tracked vehicles will avoid the area of humid dune slacks (plus a suitable buffer to ensure their structural integrity), the boundary of which will be delineated through a survey of the area prior to such work commencing; • Movement of tracked vehicles in the intertidal will be restricted to the minimum number of access tracks necessary to achieve the sampling. Access tracks will avoid areas of humid dune slacks wherever possible; and • Works on the intertidal using a tracked vehicle will be overseen by an Ecological Clerk of Works to ensure adherence to the above measures. With the proposed mitigation measures, no potential adverse effects to any conservation objectives are identified for this QI from the project work alone or in combination with other plans and projects and there will therefore be no adverse effects upon site integrity associated with the proposed site investigation works.
In relation to mitigation measures in place to avoid disturbance of Petalophyllum ralfsii (Petalwort), it is stated (Natura Impact Statement, p.29) that: "Access tracks will avoid areas of Petalophyllum ralfsii (Petalwort) wherever possible;" This mitigation measure is not sufficiently defined to eliminate a LSE on the Petalophyllum ralfsii (Petalwort). Therefore, a conclusion of no LSE could not be accurately determined within this NIS as stated.	The comment does not reflect the full assessment. Mitigation to protect sensitive features is included in the NIS which rules out potential for adverse effects on site integrity. The full suite of mitigation committed to is as follows: • All work undertaken in the intertidal by tracked vehicles will avoid Petalophyllum ralfsii (Petalwort) where possible, the location of which will be identified through a survey of the area prior to such work commencing; • Movement of tracked vehicles in the intertidal will be restricted to the minimum number of access tracks necessary to achieve the sampling. Access tracks will avoid areas of Petalophyllum ralfsii (Petalwort) wherever possible; and • Works on the intertidal using a tracked vehicle will be overseen by an Ecological Clerk of Works to ensure adherence to the above measures. With the proposed mitigation measures, no potential adverse effects to any conservation objectives are identified for this QI from the project work alone or in combination with other plans and projects and there will therefore be no adverse effects upon site integrity associated with the proposed site investigation works.
In relation to assessment of effects on [1140] Mudflats and sandflats not covered by seawater at low tide and particularly in relation to Zostera habitats within South Dublin Bay SAC, the NIS provided states (p.29-30): "Offshore borehole sampling from a jack up barge may be required. This activity does have a greater footprint than the remote sampling described above, however is also only likely to be	LSE cannot be ruled out through use of mitigation. Mitigation to protect sensitive features is included in the NIS which rules out potential for adverse effects on site integrity.

Submission Comments	ESB Response
viable in the more offshore regions of the SAC due to water depths and so will avoid the more sensitive habitats such as the Zostera community located towards the upper shore." This statement does not constitute a mitigation measure and a clear statement of depth/area in which borehole sampling from a jack up barge will be carried out should be outlined and a specific statement outlining whether or not such investigations will occur within the area where Zostera habitats have been observed. Without this a conclusion of no LSE could not be accurately determined within this NIS as stated.	Nevertheless, no jack up work is possible in the area of the defined Zostera bed. The commitment that the surveys 'will avoid the more sensitive habitats such as the Zostera community located towards the upper shore' is absolute and therefore effective and clear.
In relation to mitigation measures in place to avoid disturbance of [1180] Submarine structures made by leaking gases, it is stated (Natura Impact Statement, p.32) that: "In order to ensure no adverse effects on the conservation objective of the SAC, mitigation will be put in place to ensure that no extractive survey methods (or placement of anchors or jack up legs) cause damage to these QIs. This will be achieved by using geophysical survey data to identify the locations of potential Annex I habitat. Any areas of potential reef will be avoided through micrositing of equipment or survey location." This mitigation measure is not sufficiently defined to eliminate a LSE on the [1180] Submarine structures made by leaking gases. Therefore, a conclusion of no LSE could not be accurately determined within this NIS as stated. Which exact geophysical survey data will be reviewed in this respect? Will this include drop-down video/ROV surveys? How likely is the proposed geophysical survey data to proved a false negative with regard to the presence of [1180] Submarine structures made by leaking gases? What features specifically do the potential licensees consider to be indicative of a [1180] Submarine structures made by leaking gases feature? This mitigation measure does not provide complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	The mechanisms for identifying reef habitat and avoiding it as presented in Section 3.3 are standardly applied mitigation measures for offshore projects. ESB can confirm that there is no requirement to undertake intrusive SIs within Codling Fault Zone SAC.
According to the Natura 2000 statement, "the Conservation Objectives to maintain the favourable conservation condition of Harbour Porpoise (Phocoena phocoena) [1351] within the Rockabill to Dalkey Island SAC, are defined by the following list of attributes and targets: o Species range within the site should not be restricted by artificial barriers to site use; and o Human activities should occur at levels that do not adversely affect the harbour porpoise community at the site." Both of these site targets would be contravened as a result of the granting of this license application.	No justification for this statement is provided here by the consultee. The Applicants assessment of effects on Rockabill to Dalkey Island SAC, in light of the conservation objectives, is presented within Section 4.2.2 of the SISAA, and Section 3.2 of the NIS which sets out the mitigation measures in place for this QI which will ensure no adverse effects on any conservation objective and thus no adverse effects on site integrity.
3. Unregulated Development Environment: Granting of this license would contravene article 6(3) of the Habitats Directive by granting a consent to a project which leaves the developer free to determine subsequently certain parameters without first having made certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site. • The development consent, if granted, should establish conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site. This is not evident from this application • Choice of benthic grab methods is not clear and is of utmost importance in attaining correct data for the next stage of the appropriate assessment of the proposed wind park. Biological trawls are considerably more beneficial in some instances and a clear indication of what will and will not be discovered by these methods should be outlined.	The Schedule of works submitted specifies all surveys to the required degree to enable the Competent Authority to undertake Appropriate Assessment.

Submission Comments	ESB Response
4. Cumulative Impact: The current license application appropriate assessment fails to take into account properly or at all the cumulation of the impact of the project with the impact of other existing and/or approved projects contrary to article 4(3) and Annex III. Granting of this license would be a breach of article 4(4) by failing to ensure that the project was properly described in terms of cumulation of impacts. • The cumulative impact of the granting of multiple licenses in the area for surveys such as these will have a cumulative impact which has not been appropriately assessed. As such, granting of this license would constitute a breach of the habitats directive.	An in-combination assessment was undertaken within Section 4.2 of the SISAA report and Section 3 of the NIS report for all relevant plan/projects (see Appendix C of the SISAA Report / Appendix B of the NIS) in the vicinity of the proposed works and included works which were considered to overlap spatially and/or temporally.
• No cumulative assessment has been made of the very real possibility that two developers could be conducting similar site survey work including boreholes and cone penetration tests in the same area at the same time.	An in-combination assessment was undertaken within Section 4.2 of the SISAA report and Section 3 of the NIS report for all relevant plan/projects (see Appendix C of the SISAA Report / Appendix B of the NIS) in the vicinity of the proposed works and included works which were considered to overlap spatially and/or temporally.
• In combination effects the applicant only considers synchronous events and synchronous licenses/leases and do not give any consideration to prolonged repetitive surveying, dredging and noise in the area, impacted by past licenses/surveys, such as their own previous surveys as recently as 2019. In fact, it is not made clear in the application why repeated benthic grabs/trawls is required and may cause significant impact to benthic communities.	An in-combination assessment was undertaken within Section 4.2 of the SISAA report and Section 3 of the NIS report for all relevant plan/projects (see Appendix C of the SISAA Report / Appendix B of the NIS) in the vicinity of the proposed works and included works which were considered to overlap spatially and/or temporally. ESB have not previously undertaken surveys in this area and assume comments in relation to surveys undertaken in 2019 apply to another developer.
The NIS admits that "it is concluded that there may be a small ex-situ in-combination displacement impact to this SCI as a consequence of proposed works" (p.20) however fails to quantify this effect. Additionally, no temporal in-combination effects have been considered in relation to past and proposed future projects. As such, the NIS has failed to provide complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	Determination of in-combination effects, considering the conservation objectives of the site, are presented in the NIS (Section 3.1). The distance between the Application Area and the SPA that this statement relates to is over 10 km. Any such 'small ex-situ' in combination effect that might arise from the proposed activities will not have any potential to lead to adverse effects on site integrity in view of the conservation objectives of the site. The proposed activities are fully described within this Application, as they are in the applications of other plans or projects relevant to the in-combination assessment.
• Though the proposed surveys, considered in combination with various works around Dublin port, undertaken by Dublin Port Company, (e.g. Natura Impact Statement, p. 25, 31) are considered to have the potential to lead to in combination effects on North Dublin Bay SAC, there is considered to be no LSE as a result of each project being "small in spatial scale, and short in temporal scale". This does not constitute an appropriate assessment and fails to provide complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the proposed works.	Likely Significant Effects for this effect was not ruled out, and it was progressed to the NIS. The full sentence commented on here actually reads: 'small in spatial scale, and short in temporal scale, and with the mitigations in place, no adverse effects…' With the application of mitigation (and considering the small spatial and temporal scale of all activities), it is considered that the conclusion of no adverse effects on site integrity can be reached with no reasonable scientific doubt remaining.
• The in-combination effects are inadequately addressed and do not include recent license applications such as FS007188, as is required under Article 6(3) of the Habitats Directive. **Conclusion** - Based on the extensive scientific analyses presented here it must be concluded that the current Foreshore Licence application does not provide information that would justify granting this licence and the application should be refused.	The In-Combination assessment presented in the SISAA and NIS considered all relevant potential in-combination plans or projects, including Foreshore Licence applications that were published on the gov.ie website at the time of writing. This included site investigation work at the proposed location of the Dublin Array Offshore Wind Farm which may be undertaken under any existing or future Foreshore Licence. As such all potential in-combination effects are considered in the assessment (see Appendix B of the NIS report).

Submission 15: Member of Public

ESB notes the points raised in this submission. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
The cumulative impact of repeated geotechnical and geophysical site investigations There have already been significant site investigations carried out in this area and there is currently another licence application by another developer being processed. The cumulative impact of repeated geotechnical and geophysical site investigations on our fragile marine environment along this small stretch of coastline must be considered. All cause disturbance to marine life and habitats. In the absence of designated marine protected areas we can not permit repeated disturbance and damage. **Public Consultation -** To date no meaningful effort has been made by Government to inform the public in a balanced way of both the pros and cons associated with such large scale near shore marine windfarms. It would appear from what has been happening so far that there is an alliance between the Government and developers and a biased drive to facilitate developers to progress their near shore windfarm businesses. Political will has been promoting and supporting offshore windfarm development but has failed to inform the public, based on unbiased scientific evidence, of the environmental impact that may accrue from such large scale near shore investigations and development. Rather than depend on developers to do it, our Government must take responsibility for facilitating public consultation and open meaningful public debate. During the Pandemic public consultation is more challenging and extra efforts are required to target audiences in a user friendly way. No special efforts seem to have been made by Government over the last 2 years to engage with citizens by producing accessible, unbiased information about proposed projects and the alternatives. As a citizen I consider myself disenfranchised by the lack of unbiased public information and consultation relating to proposals for such massive permanent alteration to our precious marine environment and coastal landscape. **Consideration of alternatives -**In the rush to meet climate targets it seems that all alternatives regarding site selection and turbine type have not been given due consideration. Although great progress has been made with the development of floating turbines, for example off the Scottish Coast, they seem to have been dismissed as a possibility for the Irish East Coast. It is said repeatedly that the technology is not yet sufficiently advanced and that the Irish Sea is too deep but there is also much information available that suggests they can be used effectively in similarly adverse conditions elsewhere. There have been recent reports of Scottish Projects. It is crucial that all alternatives are given full unbiased consideration before we progress any particular projects. **Failure to designate Marine Protected Areas-** In the interests of preserving the biodiversity of our fragile marine environment absolutely no disturbance to our coastal waters by developers should be permitted before we designate Marine Protected Areas. It is shameful that as an island nation we have designated a mere 2% of our marine environment for protection. Without the designation of MPAs there can be no safe site selection and applications for site investigations are premature. **Legacy Projects -**It is absolutely unacceptable that projects that submitted applications under outdated legislation, before we had the kind of environmental awareness we have now, are given special status of any kind. All proposed projects should start from scratch under the new legislation and be subject to full scrutiny	A SISAA and a NIS accompany this Foreshore licence application in support of the Competent Authority in making its determinations under the Appropriate Assessment process. The information presented in the NIS concluded that following application of suitable mitigation measures the Site Investigation works, either alone or in-combination with other plans or projects, would not have an adverse effect on the integrity of any Natura 2000 site. In terms of the points raised in relation to public consultation and consideration of alternatives these seem to be directed towards the State and the development of OWF projects rather than ESB and the scope of this foreshore licence application. The ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this particular Foreshore Licence Application being consulted upon. This Foreshore License Application is the initial stage in the overall development process and is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. This will include consideration of alternative design, technology, location, size and scale as required. The designation of Marine Protected Areas is a matter for the Department of Housing, Local Government and Heritage. This foreshore licence application does not relate to any legacy project. This application has been submitted in line with all relevant current legislation. This application is for ecological monitoring and SI works required to inform the engineering and design of a potential OWF in the area, the cable route to shore and associated infrastructure. The information that such surveys provide will allow ESB to bring forward the most favourable project, whilst minimising the environmental effects of any OWF proposal. In terms of the points raised in relation to monitoring of compliance and standards for EIA these seem to be directed towards the state rather than ESB. If granted a foreshore licence, ESB will comply with all licence conditions, and the mitigation measures/monitoring set out in this application.

Submission Comments	ESB Response
in accordance with up to date best international standards for windfarm development and site selection. There should be no preferential standing based on an outdated application process in the absence of the designation of Marine Protected Areas based on best independent scientific evidence. **Site selection** -It is absolutely unacceptable that developers have been permitted to select sites without adequate environmental constraints. Based on best independent expertise, sites should be selected by Government and developers should only be offered opportunities to propose projects within suitable designated zones. We rely on our elected representatives to safeguard our long term interests by setting boundaries and controlling development. Such blatant allegiance to, and preferential positioning for, legacy projects demonstrates clearly that this is not happening. **Monitoring of Compliance** Given the enormity of what is at stake it is crucial that provision is made for completely independent expert monitoring of any disturbance to our marine environment caused by investigations should a licence be granted. **Highest Standards for Environmental Impact Assessments** It is crucial that the Government engages independent expertise of the highest calibre to ensure that Environmental Impact Assessments are broad enough and conducted in accordance with current highest international standards.	

Submission 16: Killiney Bay Community Council

ESB notes the points raised in the submission by the Killiney Bay Community Council. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
REQUEST FOR A COST BENEFIT ANALYSIS RE. THE INSTALLATION OF TURBINES WITHIN THE KILLINEY BAY AREA Costings are an essential condition for a public appraisal and evaluation of the profit and loss balances deriving from the installation of multiple wind turbines within and near to the Pristine Killiney Bay area. We request a valuation of the natural capital inherent in our local biogeography. We request the measurement of the capital value of our Killiney Bay maritime environment, via a system of accounting based on data evidence of present and future financial value gain or loss. Economic metrics make it possible to integrate ecosystems into economic price ratios compatible with market finance. Consistent with this measurement of eco-value, we request an appraisal of 'ghost death' from damage to the sea floor and dependent sea stock. We seek the inclusion of national capital accounting impact assessment as follows: 1. Factor the monetary value of, offset by the damage to, the benthic ecosystem proximate to the Dublin Bay Biosphere and proximate SAC. In particular, cost the value of the Kish and Bray sandbanks as spawning grounds for fish and molluscs, and feeding grounds for sea birds. Focus on the proximity of this area to the Special Area of Conservation, Rockabill to Dalkey. 2. Define predicted costs due to coastal erosion on Killiney Beach and Cliffs. Note 1. 3. Examine the installation of wind turbines adjacent to Dublin Bay Biosphere and Dalkey to Rockabill SAC in terms of injury to porpoises. **Note 1: COASTAL EROSION CONSIDERATIONS** : Under future greenhouse-induced climate scenarios (Houghton et al., 2001), adjustment in both the rate of sea-level rise and wind-wave energy are envisaged (Watson et al., 2001) although a present it is not possible to say with certainty the degree of change or the threshold tolerances of these banks. Anthropogenic interference in littoral processes could also affect this balance although current management philosophy prohibits significant removal of the bank sediment or southerly sediment supply areas (personal communication). Future uses of the banks for offshore wind farms are currently under evaluation although there are no current plans to license large scale offshore aggregate extraction (personal communication). Offshore aggregate extraction is subject to ongoing policy development although it is unlikely, at this stage, that extraction could occur with the 20m isobath due to coastal erosion considerations (personal communication). Seabed mapping and seafloor processes in the Kish, Burford, Bray and Fraser Banks area, SouthWestern Irish Sea, Irish Geography, January, 2001. Source: Andrew James Wheeler, University College, Galway Gerry D. Sutton, University College, Cork.	It is unclear if the points raised in relation to cost benefit analysis and coastal erosion are directed towards the state or ESB, however these relate to the installation of turbines and OWF development which is outside the scope of this foreshore licence application.

Submission 17: Member of Public

ESB notes the points raised in this submission. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
These are some of the grounds for objection which I wish you to take into consideration, primarily, Oversights: In conjunction with two other developers as part of a consortium, an ESB offshore wind subsidiary (Hibernian Wind?) commissioned a 2002 baseline study on bird habitats in relation to a site area immediately adjacent to and surrounded by the current ESB Wind Development Limited proposed survey investigation area. This 2002 bird study found significant concentrations of protected bird species using the proposed site area and around for foraging, breeding, listed the presence of migratory bird species and mapped concentrations of flight patterns of protected species in and around the area to the North, North-West and North East of the 2002 proposed site area which is by and large the subject site area of the current site investigation foreshore Licence Application (FLA) FS007134. It is striking that the current developer did not take the findings of this thorough 2002 baseline bird study (including expert flight mapping) into consideration in their assessment of the suitability of the selection of FS007134's proposed site and that it was not taken into account in their site selection process, or in their current NIS, in the Screening for Appropriate Assessment, or in Annex IV species reports, or geotechnical and geophysical reports given that ESB Wind Development as it stands now would surely have been aware of the important findings on avifauna habitats and species in and around this area before ESB then wind energy subsidiary pulled out of consortium to develop the proposed project area in 2005[1]. What concerns me is that an objective assessment at site selection stage, or at the site investigation submission stage where, if all applicable habitats and birds directives criteria were knowledgeably applied, should clearly have ruled out the proposed site area in relation to both cetaceans (as protected species as are their habitats and their status as component species of adjacent SACs) and avifauna (as protected species as are their habitats and their status as component species of adjacent SPAs) and sandbanks habitat and species, reef building polychaetes habitats, and migratory fish and critical fish spawning grounds.	These comments refer to a 2002 baseline study on bird habitats. This baseline study is considered to be outdated and more contemporary data is better referenced. The ultimate project, the potential wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this particular Foreshore Licence application being consulted upon. This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm will be addressed in an EIAR and NIS that will accompany any future consent application. This will include consideration of alternative design, technology, location, size and scale as required.
In relation to critical fish spawning grounds in the proposed FLA site area I would like to draw attention to concerns expressed by three EU approved marine organisations in relation to the impartiality of assessment surveys submitted as part of offshore investigative and infrastructural project applications generally in Europe, and draw attention to a letter[2] addressed to the Directorate-General for Maritime Affairs and Fisheries from the North Western Waters Advisory Council, the Pelagic Advisory Council and the North Sea Advisory Council which addresses the impact of marine wind energy developments on commercial fish stocks. In this letter these organisations express the following concerns as to: "marine habitat alterations and other key interactions ... the NWW, North Sea and Pelagic AC members are specifically concerned over these potential impacts given the importance of e.g. spawning grounds/burrows for the health of the stocks under their remit. The NWW, North Sea and Pelagic ACs are equally concerned over the quality, thoroughness and independence of impact studies carried out prior to offshore projects in their remit area. To date, most impact studies are being commissioned and/or funded by the energy sector, raising the question of impartiality"[3]	As these comments seem to relate to impartiality of assessment surveys , ESB do not have any comments in relation to this.

Submission Comments	ESB Response
I find that another shortcoming of ESB Wind Development Limited Site Investigations FLA supporting documents is that, in the insufficient time granted for the public to read these reports. I also found an overreliance on documents which I found sometimes had insufficient scientific parameters on the issue in question or in relation to providing justifications as to whether likely significant effects (LSEs) will or will not come about. For example in assessing the effects of benthic profiling, drilling, seismic, acoustic or intrusive survey methods and the effects of sound disturbance on marine mammals etc, a study titled 'A Ship Traffic Disturbance Vulnerability Index for Northwest European Seabirds as a Tool for Marine Spatial Planning' by K Fliessbach et al is referenced more than once. This study refers only to noise made by shipping vessels and while no doubt it is a good study, because of its terms of reference (shipping vessels), it cannot provides relevant scientific criteria for the assessing or eventual dismissing of LSEs that may (and in my opinion will) arise from extensive noise, vibrations and habitat deterioration that arise not from shipping vessels but from drilling to 70 metres, vibrocoring and many other intrusive sonar and acoustic survey methods as proposed in the ESB Wind Development Limited FLA such as, "Accompanying Report" "Risk Assessments Report" or "Schedule of Works".	It is common practice to reference supporting data in this way. The example provided (Fleissbach et al. 2019), is referenced as evidence to support the statement that bird species groups, such as divers, are notably sensitive to experiencing adverse effects from anthropogenic disturbance. While it presents conclusions from observations in relation to vessel noise, it is considered relevant as a reference in relation to other sources of anthropogenic disturbance, i.e., if particular seabird groups are sensitive to noise generated from one form of anthropogenic activity it is relevant to mention this in relation to noise generated from another form of anthropogenic activity (which it is conservative to consider they may also be sensitive to) (Section 3.1 of SISAA and Section 3.1 of NIS).
In relation to protected bird species as mentioned above, this general area as site for any wind farm associated activities was already found in 2002, by a developer funded baseline report - to carry the risk of significant impact on protected bird species. The number and categories of protected bird species now red or amber listed using this area has since notably increased. The report concluded: The other potential impact highlighted in the preliminary report was the possible displacement of foraging seabirds from the Kish Bank ... This was identified as a potentially significant impact for rather more species of national importance. As stated in that report, shallower sea areas such as the Kish Bank are relatively scarce in this region, the Kish itself constitutes quite a large proportion of the available resource. Therefore any effective loss of habitat would be more likely to result in significant ecological consequences, such as reduced breeding success and increased mortality. Alternative feeding areas with similar characteristics may well be limited. Similarly for birds outside the breeding season, loss of feeding resources could be significant. Again, if a disturbance effect occurs, its ecological consequence would be dependent on the availability of alternative feeding areas. If such alternative areas were not available and then birds were unable to reach adequate body condition before migration, this could result, for example, in increased mortality rates ... given the importance of the area, a precautionary approach would need to be taken. This is particularly the case when the conservation status of the populations using the Kish Bank is considered. The Bank itself has sufficient conservation value to qualify for SPA status, solely on the grounds of the roseate tern numbers that use it. This is not, however, the only SPA issue, as many of the seabird populations using the Kish are very likely to be from designated SPAs nearby. This includes all of the following: Rockabill Island - breeding roseate and common tern. Skerries Islands - breeding shag and cormorant Lambay Island - breeding Manx shearwater, shag, guillemot, razorbill, fulmar, cormorant, kittiwake. Ireland's Eye - breeding gannet, cormorant, kittiwake, guillemot and razorbill. North Bull Island Dollymount - breeding common tern, passage roseate and a. other terns. Howth Head - breeding kittiwake and razorbill. Sandymount Strand / Tolka Estuary - breeding common tern, passage roseate and other terns. Wicklow Head - breeding kittiwake, razorbill, guillemot, fulmar and shag. If birds feeding on the Kish and breeding/on passage at any	This comment seems to primarily relate to selection of site area for the development and as such is not relevant to the scope of the Foreshore Licence application. With regards to some of the specific technical points; visual, acoustic and prey species impacts associated with proposed SI works which may result in temporary displacement effects (i.e., temporary effective habitat loss) are considered in the SISAA. Where it was not possible to conclude no Likely Significant Effect from impacts which may give rise to displacement effects, those impacts were progressed for consideration in the NIS. Rationale for the screening approach is included in the SISAA. For the purpose of screening the Application area was considered to have potential connectivity with any SPA and its SCIs if the Application area overlapped the SPA or was within 15 km of the SPA site boundary. It is noted that, given their generally large foraging ranges, seabirds from other, more distant SPAs may occasionally forage in, pass through or undertake other behaviours within the Application area. On the basis that the frequency of birds from these more distant SPAs occurring within the Application area decreases as the distance between the Application area and those SPAs increases, it is considered that the Application area is beyond any core habitat use areas around these more distant sites. It is critical to understand the overall spatial and temporal scale of the foreshore investigation works proposed in order to properly consider the potential impacts and effects that may arise on the Natura 2000 site network. As each survey vessel will spend no more than a few days in any particular location, potential impacts and effects will be localised at any one time to a very small proportion of the total Application area. Equipment deployments (e.g., floating

Submission Comments	ESB Response
of these other SPAs were affected, it is possible that the overall SPA populations of these species could be reduced. ... it can be concluded at this stage that as far as the most sensitive bird issue on the site is concerned, roseate tern, it would be inappropriate to construct a wind farm within its main area of use (i.e. in the northern half of the Bank). It would not be possible to be sure that significant impacts would not occur, and hence the only current solution would be to locate the wind farm outside the area used by this species. In terms of the nationally important species, there are potentially significant issues with regard to the impacts on the Kish populations themselves and also in terms of possible impacts on neighbouring SPAs for a range of species, particularly including Manx shearwater, shag, kittiwakes, common terns, guillemots and razorbills. Given these baseline findings which both the current applicant developer and the Foreshore Application Unit would have access to in relation to assessing this area and understanding adverse impacts on protected species in the area, I feel that the current applicant developer throughout their supporting documentation for FS007134, has gone out of their way to overlook or downplay the cumulative effects of proposed OFW projects affecting this area (such as Dublin Array's proposed extensive site investigations and where turbine height of the proposed OWF is estimated to be up to 310m height x 61) which will have,at site investigation stage, cumulatively or separately, likely significant effects or significant adverse impacts on protected species or habitats.	Lidar), may be in place for longer periods, however their footprint is negligible in comparison to the overall Application area. In this context, the highly localised, temporary and short duration of the proposed surveys means that: (1) there will be an insignificant number of Sea Stack's survey vessels compared to existing marine traffic including cargo ships, ferries, fishing vessels and pleasure craft that run to a very large number of passages a year in the Irish sea; and (2) the vessels at any one point in time would only occupy a very small percentage of licence area available to foraging species. Given the highly localised, temporary and short duration of the proposed SI works, it is considered that only those SPAs with direct overlap, or within 15 km, have potential to be affected by the proposed activities. Any potential impacts to seabird SCIs from SPAs beyond 15 km from the Application area are therefore considered negligible and there is therefore no potential for any LSE on the SCI's of these sites. Likely significant effects, including cumulative effects, on protected habitats and species within European designated sites have been addressed in the SISAA and NIS submitted with this Foreshore Licence application.
It is also of concern that the applicant developer does not put forward and makes no reference to alternative sites for site investigations or OWF project, potentially further creating a pressure towards a confirmation bias in relation to avoiding the effects of the precautionary principle and the requirements of the habitats and birds directives on findings of likely significant effects or cumulative effects of OWF projects in this area on species and habitats. For clarity, cumulative effects are "in Article 3(3) ... caused by the projects or plans that are currently under consideration together with the effects of any existing or proposed projects or plans. When impacts are assessed in combination in this way, it can be established whether or not there may be, overall, an impact which may have significant effects on a Natura 2000 site or which may adversely affect the integrity of a site... It should also be remembered that cumulative impacts could result where impacted areas interact."[4	This initial stage in the overall development process is focussed on the undertaking of SI works only in order to inform ongoing feasibility assessments for the development, the overall design of the potential wind farm and to inform the completion of an EIAR and NIS to accompany any future project consent application. The impacts of the construction and operational stages of any proposed wind farm and alternatives will be addressed in an EIAR and NIS that will accompany any future consent application.
I would also like to note to the deciding authorities that the carrying out of screening for appropriate assessments and Natura Impact Statements, including at any proposed geotechnical and geophysical site investigations has a necessary requirement of objectivity: Approach to decision-making The diversity of habitats, species, projects and plans that exist within the European Union and the variations between national regulations require the approach to the Article 6 assessments to be robust and yet flexible... the decisions made through the application of the methodology should attempt to be as transparent and objective as possible and at the same time should reflect the value judgments inherent in any environmental assessment. Implicit in the habitats directive is the application of the precautionary principle, which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty. The Commission's COM(2000) 1 final 'Communication from the Commission on the precautionary principle' (European Commission, 2000a) states that the use of the precautionary principle presupposes identification of potentially negative effects resulting from a phenomenon, product or	This comment seems to relate to the decision-making process, objectivity and use of the precautionary principle by the competent authority.

Submission Comments	ESB Response
procedure; a scientific evaluation of the risks which, because of the insufficiency of the data, their inconclusive or imprecise nature, makes it impossible to determine with sufficient certainty the risk in question (European Commission, 2000a, p. 14). This means that the emphasis for assessment should be on objectively demonstrating, with supporting evidence, that: there will be no significant effects on a Natura 2000 site (Stage One: Screening); or there will be no adverse effects on the integrity of a Natura 2000 site (Stage Two: Appropriate assessment); or there is an absence of alternatives to the project or plan that is likely to have adverse effects. [5]	
There is also an obligation at Screening and NIS stage on the applicant to acknowledge uncertainties and any gaps in information. While it appears to me that there are uncertainties and gaps in the information submitted as part of the application's supporting documentation for FS007134 , this is not properly acknowledged or flagged by the applicant or by the organisation who has compiled the information submitted on behalf of the applicant.	The information presented in the SISAA and NIS (for assessments of likely significant effects and adverse effects on site integrity of any potentially affected Natura 2000 sites respectively), as well as the Applicant's assessment made against that information, is provided to allow conclusions to be drawn with no reasonable scientific doubt as to their correctness. As such we do not believe there to be any uncertainties or data gaps that would bring reasonable scientific doubt to any of the conclusions.
I am also concerned that relevant historic judgments (e.g. JUDGMENT OF 11. 1. 2007 — CASE C183/05) and recent findings in an as yet unpublished report on the NPWS as to the its lack of capacity to effectively assess, monitor and have oversight of species and habitats to the standards required in relation to 'strict protection' and in relation to marine areas is palpable in relation to below par scientific data gaps and ommissions in the supporting FLA documents . I am curious to know, given that the applicant developer says that consultations with NPWS were undertaken (although the written advice given by NPWS on the current submission is not made available) why it is that the supporting documentation contains uncertainties and gaps that call into effect the precautionary principle and if this has been noted or flagged to the applicant developer or to the Foreshore Application Unit, or if it will be flagged to the Marine Licence Vetting Committee if it progresses to that stage, by the body tasked with assessing and monitoring such proposal and project? I am concerned that (as reported in the media), a recent draft review report on the NPWS found that because of under-resourcing and other problems, the NPWS does not have the required capacity to fulfil its statutory role in Marine nearshore and offshore projects under the EU Habitats and Birds Directives for which it is responsible. I feel that this lack of capacity is reflected in the ESB Sea Stacks Investigation FLA supporting documentation and fear the long term consequences for protected species and habitats in this area (at site investigation stage and beyond) in relation to this proposal and in relation to other projects in 'the pipeline' in this same area.	These comments seem to relate to the capability and capacity of the competent authority to assess the SI Foreshore Licence application.
Please note that I object to the developer in the Risk Assessment for Annex IV Species report, on page 5, incorrectly transposing a particularly relevant provision, writing; "The Habitats Directive has been transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 - 2021 .... These Regulations provide for the protection of cetacean and marine turtle fauna and as such it is an offence to: Deliberately capture or kill any specimen of these species in the wild; etc. (or) "Damage or destroy a breeding site or resting place of such an animal;" The correct wording of this provision should be "deterioration or destruction of breeding sites or resting places." Deterioration – a far lower level of adverse impact effects rather than 'damage' which is a more drastic term, as substituted in the Risk	The comment regarding the use of the word damage rather than deterioration is noted, however this does not alter any part of the assessment presented. There will be no deterioration, damage or destruction of breeding sites or resting places of any Annex IV species as a result of the proposed SI works. To note that the DHLGH published guidance documents in 2021 "Guidance on the Strict Protection of Certain Animal and Plant Species under the Habitats Directive in Ireland" also uses the same wording as outlined in the Annex IV risk assessment.

Submission Comments	ESB Response
Assessment for Annex IV Species report, unintentionally or otherwise removes a much higher level of strict protection from direct or indirect effects applicable to the species and habitats in and adjacent and likely to be effected by the proposed site investigation measures. It infers that there is more latitude up to the point of 'damage' rather than 'deterioration' regarding the requirements of the strict protection habitats and speices. Given that ESB (or its then subsidiary Gort Wind) were in charge of what resulted in an environmental fiasco regarding the onshore Derrybrien Wind Farm's lack of proper environmental assessments in granting permissions (Case C-215/06 Commission v. Ireland Judgment of the European Court of Justice, 3 July 2008) and consequent huge fines and penalties imposed on the Irish state by the ECJ[6], I am concerned about whether application documents for the Sea Stacks actually withstand or come up to proper scrutiny. Keeping in mind also that offshore wind projects and proposals – as pointed out in various EU and national guidance documents – are even more difficult to effectively vet, assess monitor or 'police' in relation to biodiversity and habitat deterioration, than onshore ones.	ESB has engaged the services of consultants with competent expertise in the area of marine ecology to prepare an NIS and SISAA (for assessments of likely significant effects and adverse effects on site integrity of any potentially affected Natura 2000 sites respectively) in support of this application. The information presented in these reports, as well as the Applicant's assessment made against that information, is provided to allow conclusions to be drawn with no reasonable scientific doubt as to their correctness. As such we do not believe there to be any uncertainties or data gaps that would bring reasonable scientific doubt to any of the conclusions.
Other points and objections: Several bird species in the AA screening document and elsewhere are misclassified or even omitted (despite being on record in this area and in relevant SPAs in relation to the level of protection required), in particular in relation to underwater acoustic noise surveying, and the diving-foraging features of some bird species at screening and the effects of intrusive and acoustic investigative works are misinforming: See Table 2 for examples.	All SCIs of relevant SPAs are included for assessment in the supporting documentation to this Foreshore Licence application. Screening Rationale is presented in the SISAA. Screening rationale in relation to underwater noise for particular SCIs is expanded on below. Essentially, these species do not actively forage within the water column in such a way that they may experience underwater noise effects.
The developer does not give any estimate of time or hours in relation to intrusive elements of their proposed site survey. Given that these site investigations comprise significant use of intrusive acoustic scanning, drilling and dredging survey methods adjacent to protected species and their range of habitats, (including but not exclusive to local SPAs and SAC sites) over the space of 5 years, and overlapping cumulatively with other projects, this is a critical omission which I believe should lead to this application being rejected.	The exact duration of each activity is not possible to give at the level of detail the comment requests. The level of detail provided in the SISAA and NIS regarding the timing of works is considered more than sufficient to allow a robust assessment of the impact of the works on European sites. It is considered that sufficient information has been presented for the Department to make their decision, and furthermore the typical durations of all activities are no different to those in other similar Foreshore Licence applications.
In the ESB Wind Development Limited Site Investigations at Sea Stacks Offshore Wind off Dublin and Wicklow application there are gaps and omissions in relation to: impacts on fish species and fish spawning grounds (also as to sand eels and polychaetes), gaps and omissions in relation to the avoidance of or protection of pathways between protected sites and protected species range. There are gaps and omissions in relation to the barrier effects of this FLA alone or together with other FLAs in the area and are gaps and omissions regarding fragmentation of foraging habitats and in relation to breeding and resting place of protected species. There are also gaps and omissions in the application in relation to the range, distribution of, and the deterioration of breeding and resting grounds of species requiring strict protection (cetaceans, in particular the harbour porpoise, a QI for Rockabill to Dalkey Island SAC) and gaps and omissions relating to the assessment of biogenic, geogenic reefs and 1180 MDAC habitats. See below Table 1. for scope of errors, omissions and gaps that I found to be present in the supporting documentation on birds in, Annex IV or NIS and AA screening documents. Because of these gaps and omissions I believe that the granting of this FLA would in breach of the requirements of Article 12 and other provisions of the Birds and Habitats	All QIs/SCIs of all relevant Natura 2000 sites are considered in the SISAA and NIS as required. This includes any potential biogenic or geogenic Annex I reef (including methane-derived authigenic carbonate (MDAC) habitats such as those within the Codling Fault Zone SAC – assessed in Section 4.2.3 of the SISAA and Section 3.3 of the NIS) that may be affected by the proposed works, as well as the Rockabil to Dalkey Island SAC (where both reef and Harbour Porpoise features are assessed - see Sections 4.2.2 and 4.2.3 of the SISAA and Section 3.2 of the NIS). Impacts on migratory Annex II fish species were also assessed in the SISAA report (Section 4.2.4.8). In-combination effects, including those with other FLA projects have been addressed in Section 4 Appendix C of SISAA and Section 3 Appendix B of NIS). Non-Annex II species or non-Annex I habitats (e.g., spawning grounds and polychaetes) are not required to be assessed through the AA process, except where they support other QIs or SCIs in which case they have been fully assessed (e.g.

Submission Comments	ESB Response
Directives and guidance (see table 2.below) especially provisions relating to the "deterioration or destruction of breeding sites or resting places," for example in view of the seismic and acoustic surveying measures.	effects on prey species of SCIs such as sandeels – see Section 4.2.1 of the SISAA report). An Annex IV risk assessment has also been undertaken to ensure the strict protection of marine Annex IV species.
The developer holds out that the site investigations, in particular intrusive investigations such as sonar and acoustic scanning of the seabed etc, the drilling (vibrocoring, sampling, borehole drilling etc, tracked vehicles, jack up barges) are of low impact and short duration, which I feel is misleading. From this position the developer also holds out that the intrusive site investigation measures are detached from the construction and operation stages of the offshore wind farm. I do not find this to be credible because the extent of intrusive investigations (even without an estimate of duration of hours or even days of such intrusive investigations – another important omission) are an integral part of the preparation for construction, turbine foundation preparation and construction and operational phase of the proposed offshore wind farm.	A thorough assessment of the potential impacts of the proposed SI works has correctly concluded that they will be of short term and temporary in nature. See above response in terms of presentation of exact durations of activities. For the purposes of this particular Foreshore Licence application, the SI works can be wholly detached from the proposed offshore windfarm development, as ultimate project, the wind farm itself, will be the subject of a full consent application in due course and is outside the scope of this particular Foreshore Licence application being consulted upon.
TABLE 1. Articles 6.1 and 6.2 of the habitats directive require Member States to: Take positive conservation measures that are necessary to maintain or restore habitat types and species for which the site has been designated (Article 6.1); Take measures to avoid any deterioration of habitat types or any significant disturbance of the species present (Article 6.2). ... At a minimum, the sites' conservation objective will be to maintain the species and habitats for which it was designated in the same condition. This means ensuring that they will not deteriorate below that level. The aim of Articles 12 to 16 of the Habitats Directive is to establish and implement a strict protection regime for animal species listed in Annex IV (a) of the Habitats Directive within the whole territory of the Member States. Articles 12 and 13 provide for measures which should establish a system of strict protection for the flora and fauna listed in Annex IV of the Directive. Species Protection under Habitats Directive - System of strict protections (Articles 12-16 of the Habitats Directive) 1. Member States shall take the requisite measures to establish a system of strict protection for the animal species listed in Annex IV in their natural range, prohibiting: (a) all forms of deliberate capture or killing of specimens of these species in the wild; (b) deliberate disturbance of these species, particularly during the period of breeding, rearing, hibernation and migration; (c) deliberate destruction or taking of eggs from the wild; (d) deterioration or destruction of breeding sites or resting places. However, the overall objectives of the Habitats and Birds Directives go beyond simply preventing further deterioration. They aim to ensure that EU protected species and habitat types reach a favourable conservation state across their natural range in the EU. Thus more ambitious conservation objectives may be required to restore and improve the conservation condition of the EU protected species and habitat types present on that site (under Article 6.1). The overall objective of the two directives is to ensure that the species and habitat types they protect are maintained and restored to a favourable conservation status15 throughout their natural range within the EU. This target is defined in positive terms, oriented towards a favourable situation, which needs to be reached and maintained. It is therefore more than just avoiding deterioration.	ESB has assessed the implications of this project, both individually and in combination with other plans and projects, against the conservation objectives of the European Sites referenced in the NIS and SISAA under Article 6(3) of Habitats Directive and have concluded that following application of suitable mitigation measures this project will not adversely affect the integrity of the European sites concerned. An Annex IV Risk Assessment has been prepared to assess requirements of Article 12 of the Habitats Directive. Whilst we wholeheartedly support the objectives of the Habitats Directive and have conducted assessments as required for a project of this nature, responsibility for restoring European Sites to favourable conservation is the responsibility of Member States and is beyond the scope of this project.

Submission Comments	ESB Response
Table 2 Kittiwakes are screened out for underwater as 'non-diving' but https://scottishwildlifetrust.org.uk/species/kittiwake/ "Behaviour In winter, kittiwakes live far out to sea but start to re-occupy nesting sites as early as February around Scotland's coasts. Kittiwakes are the only gulls that dive and swim underwater. They can dive or dip just below the surface to catch prey of marine invertebrates, sand-eels, plankton, and fish."	In an assessment of seabird sensitivities to adverse impacts from underwater tidal energy devices, Furness[58] et al. (2012) scored kittiwake as '1' (the minimum score) in relation to their mean and maximum diving depths, citing mean diving depths of 0 m and maximum diving depths of 1m (*Cramp and Simmons[59], 1980)*. This is consistent with a review of kittiwake foraging ecology undertaken by RPS on behalf of the Welsh Assembly[60] (2011), which states: 'Black-legged kittiwakes obtain prey by snatching items from the surface or splash diving just below the surface (Ratcliffe[61] et al., 2000)'. The duration of such dives is described in Coulson (2011) as 'sometimes up to two seconds, but at other times they are scarcely submerged'. Coulson[62] (2011) describes 10 known foraging behaviours of kittiwakes, only one of which, which is rarely observed and may be a misrepresentation of reports from third parties, may approximate to the swimming underwater referred to in the Scottish Wildlife Trust article referenced in the submission. As such the screening conclusion of 'non-diving' relates to the fact that kittiwake, perhaps outwith exceptional circumstances, do not actively forage within the water column in such a way that underwater noise impacts might impact their foraging behaviour.
TERNS (ALL) are in my opinion misclassified as "primarily surface feeding" whereas in : https://data.jncc.gov.uk/data/926cdbbd-c384-42a9-b9e5-81abd778bbd0/JNCC-Report-500- Annex8-Eglington-Perrow2014.pdf the following is found: 3.4.3 Roseate Tern ... Foraging behaviour The main capture method is plunge diving (Dunnet et al. 1990) using a characteristic angled dive using its wings to increase speed as it descends ('powerdiving') from relatively low height (typically 3-6 m and up to 12 m – Cabot & Nisbet 2013). Full immersion is achieved and it may remain submerged for 1-2 seconds suggesting it may reach depths of >0.75 cm and perhapsup to 1.2m (Dunn 1972 op cit BWPi 2006, Cabot & Nisbet 2013). It may also snatch fish and other prey from the water surface and may quarter back and forth as it searches for prey. There are few studies on diet composition of roseate terns in Europe although the limited evidence suggests that the diet of adults and chicks is predominately sandeels (Ammodytes marinus and A. tobianus) herring and sprat (Langham 1968 op cit BWPi 2006, Dunn 1972 op cit BWPi 2006, Mundy 1997, Newton & Crowe 2000). Sandeels seem to be more important in North America (Richards & Schew 1989 op cit Lascelles et al. 2013, Rock et al. 2007b, Safina et al. 2009). Roseate terns occasionally catch small prey like crustaceans, or other surface prey (BWPi 2006).	In an assessment of seabird sensitivities to adverse impacts from underwater tidal energy devices, Furness et al. (2012) scored all tern species (with the exception of Sandwich tern, which does not breed in the vicinity of the proposed SI works) as '1' (the minimum score) in relation to their mean and maximum diving depths, citing mean diving depths of 0 m and maximum diving depths of 1m (Haney and Stone[63], 1988). This is consistent with a review of tern foraging ecology undertaken by RPS on behalf of the Welsh Assembly (2011). This states: • 'There are no specific data available for common tern, but all terns plunge dive to a maximum depth of approximately 1m (Steve Votier pers. comm.).' • 'Immersion during dives is normally just complete, i.e., less than 20cm, but will be only partial if prey visibility is restricted to the surface (Snow and Perrins[64], 1998).' • 'Little terns feed by plunge diving from a hover (Cramp and Simmons[65], 1985). They usually fish in very shallow water only a few cms deep often over the

[58] Furness, R. W., Wade, H. M., Robbins, A. M. C., and Masden, E. A. 2012. Assessing the sensitivity of seabird populations to adverse effects from tidal stream turbines and wave energy devices. – ICES Journal of Marine Science, 69.
[59] Cramp S., Simmons K. E. L.. The Birds of the Western Palearctic, 2, 1980Oxford.Oxford University Press
[60] MRESF Stage 2 - Diving Birds and Underwater Renewable Devices - Desktop Review (marineenergywales.co.uk)
[61] Ratcliffe, N., Phillips, R. A., and Gubbay, S. 2000. Foraging ranges of UK seabirds from their breeding colonies and its implication for creating marine extensions to colony SPAs. Unpublished Report to BirdLife International, RSPB, Sandy
[62] Coulson, J.C. 2011. The Kittiwake. Poyser Monographs
[63] Haney J. C., Stone A. E.. Seabird foraging tactics and water clarity: are plunge divers really in the clear?, Marine Ecology Progress Series, 1988, vol. 49 (pg. 1-9)
[64] Snow, D. W. and Perrins, C. M. (editors). 1998. The Birds of the Western Palaearctic, Concise Edition (Volume 2). Oxford University Press, Oxford.
[65] Cramp, S. and Simmons, K.E.L 1985. Handbook of the Birds of Europe, the Middle East, and North Africa: The Birds of the Western Palaearctic. Vol. 4. Oxford University Press, Oxford.

Submission Comments	ESB Response
	advancing tideline (Davies[66], 1981) or in brackish lagoons and saltmarsh creeks (Cramp and Simmons, 1985).' • 'Like other tern species, roseate terns are plunge-divers. The depths they can dive tend to exceed those of other small terns as they initiate the dive from a greater altitude and fly into the water without hovering (Kirkham and Nisbet[67], 1987). There are no specific data available for roseate tern, but all terns plunge dive to a maximum depth of approximately 1m (Steve Votier pers. comm.).' As such the screening conclusion of 'primarily surface-feeding' relates to the fact that terns do not actively forage within the water column in such a way that underwater noise impacts might impact their foraging behaviour.
Herring gulls seem to be screened out from underwater effects but they do in fact dive when foraging at sea: https://www.sciencedirect.com/topics/agricultural-and-biologicalsciences/herring-gull "Being so opportunistic, they have a great diversity of foraging tactics from plunge diving for small fish in the surface waters of the sea"	In an assessment of seabird sensitivities to adverse impacts from underwater tidal energy devices, Furness et al. (2012) scored herring gull as '1' (the minimum score) in relation to their mean and maximum diving depths, citing mean diving depths of 0 m and maximum diving depths of 1m (Cramp and Simmons, 1980). This is consistent with a review of herring gull foraging ecology undertaken by RPS on behalf of the Welsh Assembly (2011), which states: 'The herring gull uses various methods of feeding: (i) dipping-to-surface to take items on or just below surface; (ii) surface- (or sometimes shallow-) plunging, from 5–6m; (iii) surface-seizing, on occasion immersing head and front part of body; and (iv) shallow surface-diving (Snow and Perrins, 1998).' As such the screening conclusion of 'non-diving' relates to the fact that for any foraging behaviours in which herring gulls may be submerged within the water column, submersion durations are very brief (at most several seconds). Herring gull do not actively forage within the water column in such a way that underwater noise impacts might affect their foraging behaviour.
Fulmars are also screened out as non-diving when in fact they are ocean divers: https://oceanwide-expeditions.com/to-do/wildlife/fulmar-1 How do Fulmars feed? Fulmars are pelagic (meaning they live entirely at sea) outside of their breeding months. When they're hunting (as opposed to scavenging) they are ocean divers, plunging several metres under the water to nab prey, or plucking them out from just under the surface.	In an assessment of seabird sensitivities to adverse impacts from underwater tidal energy devices, Furness et al. (2012) scored fulmar as '1' (the minimum score) in relation to their mean and maximum diving depths, citing mean diving depths of 0 m and maximum diving depths of 3 and 5m (Hobson and Welch[68] 1992, Cramp and Simmons[69] 1977). This is consistent with a review of herring gull foraging ecology undertaken by RPS on behalf of the Welsh Assembly (2011), which states: 'Northern fulmars are surface feeders, but they also splash-dive (Hudson and Furness[70] 1988) or surface dive down

[66] Davies, S. 1981. Development and behaviour of little tern chicks. British Birds 74: 291- 298.
[67] Kirkham, I. R. and Nisbet, I. C. T. 1987. Feeding techniques and field identification of Arctic, Common and Roseate Terns. British Birds 80, 41-47.
[68] Hobson, K. A. and Welch, H. E. 1992. Observations of foraging northern fulmars (Fulmarus glacialis) in the Canadian high arctic. Arctic. 45:150-153.
[69] Cramp, S. and Simmons, K. E. L. 1977. Handbook of the Birds of Europe, the Middle East, and North Africa: The Birds of the Western Palaearctic. Vol 1 Oxford University Press, Oxford.
[70] Hudson, A. V. and Furness, R. W. 1988. Utilisation of discarded fish by scavenging seabirds behind whitefish trawlers in Shetland. Journal of Zoology, London 215, 151- 166.

Submission Comments	ESB Response
	to c. 3m (Hobson and Welch, 1992). Maximum recorded dive depths range from 3m (Garthe and Furness[71], 2001) to 4m (Snow and Perrins, 1998).' As such the screening conclusion of 'primarily surface-feeding' relates to the fact that fulmar do not generally actively forage within the water column and, when they do, their short duration, shallow dive profiles mean that they are unlikely to be impacted by noise impacts from SI works which could impact their foraging behaviour.
Red throated divers appear to be screened out from underwater effects as non-diving but according to " https://birdwatchireland.ie/birds/red-throated-diver/ Identification: Red-throated Divers are the smallest of the divers found in Ireland. Compared to other species of divers the Red-throated Diver has a flat chest, a thin neck, a light bill, a small head and a pale appearance. Usually birds swim low on the water but may float higher at times. They often jump up to dive and can stay underwater for over a minute. Red-throated Divers are more gregarious than other divers and small, scattered flocks on the sea during the winter are common.	Red-throated diver have been screened in, in the SISAA in relation to underwater noise effects (Section 4.2.1.1).
I can't find any inclusion anywhere in ESB Wind Development Limited application docs of two QI protected bird species known to forage in the area - Gannets and Manx Shearwaters. both Gannets and Manx Shearwater are recorded as present in and around the site and gannets are a CSI on Lambay or Irelands eye. They have been observed foraging in and around the proposed site area. "There appears to be a huge shoal of sprat or sand eels off the Dublin coast from Lambay Island, south to Killiney Bay ... it stretches to about five miles east of the Kish Lighthouse. There are currently 1000's of sea birds exploiting it, among them are Gannets, Manx Shearwaters and Kittiwakes." https://iwdg.ie/fin-and-minke-whales-off-dublinand-rissos-dolphins-off-wicklow-whats-happening/ Both Gannets and Shearwaters are divers to my knowledge: "Gannets are specialist plunge divers that perform short and shallow V-shaped dives and long and deep Ushaped dives in pursuit of pelagic fish" https://maps.biodiversityireland.ie/Species/10817 Gannets (Protected Species: Wildlife Acts || Threatened Species: Birds of Conservation Concern || Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List) Shearwater Manx https://birdwatchireland.ie/birds/manx-shearwater/ "Diet taken from the sea by diving. Small fish, plankton, molluscs and crustaceans."	Although small breeding populations of gannets and Manx shearwater do occur within Ireland's Eye SPA and Lambay Island SPA, respectively, these features are not listed as qualifying Special Conservation Interests of either site. For more distant SPAs (beyond the 15k radius outlined in Screening) where gannet and/or Manx shearwater are listed as qualifying features, the overall footprint of the proposed application area considered to be outside core foraging areas and to represent a very small proportion of the total available foraging area around those sites. Furthermore, due to the limited spatial footprint of SI works within the application area at any one time, the potential for impacts associated with proposed surveys to result in likely significant effects to receptors from such SPAs is considered negligible.
Conclusion: I ask that all relevant authorities take into account the points and objections set out above in their decision making on this application. I also wish to point out that I feel that insufficient time and support was given to the public in notification, accessibility and /or sufficient time to research or properly draw up objections to the terms or supporting documentation of this FLA. I feel that it is wrong that this FLA is held out by the developer as not being in any way part of the construction and operation aspect of this large scale OWF. I feel that this FLA proposes intrusive and damaging survey methods per se but also constitutes construction site preparation. I feel that this FLA should be rejected as it constitutes an integral part of the whole extremely ill-sited development project including consequent construction / operation. I find that this FLA is simply the first step of potentially serious impacts (on biodiversity, marine mammals	This comment is directed towards the Competent Authority. All specific comments and concerns have been addressed individually above.

[71] Garthe, S. and Furness, R. W. 2001. Frequent shallow diving by a northern fulmar feeding at Shetland. Waterbirds. 24: 287-289.

Submission Comments	ESB Response
and coastal and marine habitats, fish spawning ground and migratory fish and bird habitats especially foraging and breeding) arising from the offshore large scale proposed development to which this application is integral. Given the points I raise in the conclusion of my opinion , please can the relevant authorities and relevant advisory services take careful note of the following requirements in relation to any reasons for decisions and in relation to ESB Wind Development Limited Site Investigations at Sea Stacks Offshore Wind off Dublin and Wicklow foreshore licence, ref: FS007134: Like all EU environmental legislation, the Habitats Directive is based on the precautionary principle8 , i.e. that absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised ... It is the responsibility of the competent authorities, in the light of the conclusions of the appropriate assessment on the implications of a plan or project for the Natura 2000 site concerned, to decide whether or not to approve the plan or project. Approval can be given only after they are certain that the proposed plan or project will not adversely affect the integrity of the Natura 2000 site. That is the case where no reasonable scientific doubt remains as to the absence of such effects12 . The focus is therefore on demonstrating the absence of adverse effects rather than their presence, reflecting the precautionary principle13 . The appropriate assessment must therefore be sufficiently detailed and substantiated to demonstrate the absence of adverse effects, in light of the best existing scientific knowledge in the field14 . The same level of certainty is required if the decision is made during the screening stage; also at this stage there should no reasonable doubt as to the absence of likely significant effects.[7	

Submission 18: NIFA and NIFO

ESB notes the points raised in the submission by NIFA and NIFO. Individual responses to each of the comments are provided in the table below.

Submission Comments	ESB Response
National Inshore Fishermen's Association CLG (NIFA) secretary and the National Inshore Fishermen's Organisation CLG (NIFO) secretary . With reference to planning application reference number FS007134, by ESB Wind Development Limited (ESB), Gateway, East Wall Road, Dublin 3. D03 A995 for a Licence to carry out site investigations relating to a possible wind farm on a site named "Sea Stacks Offshore Wind", situated off the coasts of Dublin and Wicklow, The National Inshore Fishermen's Association (NIFA) and the National Inshore Fishermen's Organisation (NIFO) wish to make the following joint submission. Members inform of little or no pre application consultation, many inform that they learned about the application and consultation on social media and as Organisations we only discovered detail of it having searched through the various consultations on the Gov .ie website. This coupled with the timing of the consultation, over the Christmas period, a time where inshore fishers typically take some time off, has made it difficult to put a considered response together or gauge the potential impact this project will have on members. Members that have raised, what we feel are valid concerns regarding this application. This submission is based on the same, the main points being as follows. **Importance of area to Inshore Fishing Activity** The area in question is important in general to Inshore Commercial fishing, Primarily static gear fishing using pots targeting whelk, particular in the offshore sector of the site. For some of our members the area in question accounts for the vast majority of their economic activity. Their activity there is well established and traditional. Members concerned operate small vessels, typically between seven and twelve meters in length, given the size of these vessels and the nature of fishing activity in the broader general area, operating elsewhere, to where the traditionally have done, is not realistically a viable option for them, even on short term basis. **Likely short term disruption of activity and economic impact caused by the same** While we appreciate this application is for site investigation works, our members are concerned that these works will disrupt their fishing operations and this disruption will have a negative economic impact on them. The extent of that disturbance is still unknown and will likely vary between members. Given the density of fishing activity, both in this specific and adjacent areas and the nature of the survey work, disruption is highly likely, and may involve static gear operators having to move gear, to avoid damage or loss to it, in advance of the survey. Previous experience with similar applications has proved this to be the case. Our position is than any disruption should be kept to an absolute minimum. Given that avoiding this disruption completely is highly unlikely and given the principles of "avoid, minimise or mitigate" detailed in the National Marine Planning Framework (NMPF), we ask that consent to proceed be withheld until a	ESB notes the points raised in this submission. As the public consultation process was over the Christmas period, additional days were added to the consultation period to factor in this time and the public consultation was open from 23rd December 2021 to 30th January 2022. The Foreshore Licence application was advertised in both local and national papers and all locally elected representatives in Fingal, Dublin City, Dun Laoghaire-Rathdown and Wicklow Councils were informed of the application, as were the CEOs of each of these Councils. ESB acknowledge that the area for which a Foreshore Licence has been sought supports commercial fishing activities. Potting, primarily for whelk, is understood to constitute the main fishing activity, particularly around the offshore export cable corridor AoS. ESB has appointed a FLO and is committed to ongoing engagement with fisheries stakeholders throughout the project's lifecycle, including during survey works. Additionally, ESB is developing a Fisheries Engagement and Coexistence Plan and has committed to sharing that with the Fish Producer Organisations for review, comment and input with a view to having a Plan in place acceptable to both entities It will outline how ESB plans to engage with commercial fishers about the Sea Stacks project throughout the project's lifecycle – from initial assessment, through construction, into operation. Fishers are key stakeholders in any offshore wind farm proposal and ESB is keen to ensure there are mutual benefits from the development of this project. Shared understanding will be essential in achieving this and in the minimisation of risk to both parties. Potential impacts to whelk arising from the proposed survey work are considered to be negligible. While there is little information on the effect of noise on shellfish species, the absence of gas-filled cavities such as those possessed by marine mammals and some finfish, means that there is no mechanism for them to detect pressure changes associated with sound waves. Studies have however indicated that some shellfish species may be able to perceive noise through particle motion, including species such as whelks, mussels, crab and lobster (Wale, 2017;[72] Edmonds et al., 2016[73]; Myrberg, 2001[74]). Whelk do not possess any anatomical adaptations to perceive underwater noise in any way other than via

[72] Wale, M, (2017). The Effects of Anthropogenic Noise Playbacks on Marine Invertebrates. PhD Thesis. Edinburgh Napier University, 259 pp.

[73] Edmonds, N.J., Firmin, C., Goldsmith, D., Faulkner, R., Wood, D., (2016). A review of crustacean sensitivity to high amplitude underwater noise: Data needs for effective risk assessment in relation to UK commercial species. Marine Pollution Bulletin. 108, DOI: 10.1016/j.marpolbul.2016.05.006.

[74] Myrberg, A. (2001). The Acoustical Biology of Elasmobranchs. Environmental Biology of Fishes. 60. 31-46. 10.1023/A:1007647021634.

Submission Comments	ESB Response
Fisheries Management and Mitigation Strategy (FMMS) agreed with our relevant members. This FMMS needs to be designed to keep displacement of activity to an absolute minimum, but where displacement occurs and in turn has a negative impact on members working outside of the area, the FMMS and agreement needs to take these members into account also. **Medium to long term economic impact.** Again acknowledging that the application is for site investigation works, members have concerns that these works will have a negative effect that will be longer lasting than the juration of works. These concerns are based on previous experience for similar site investigation works off the East Coast. The above mentioned FMMS needs to take these concerns into account also. In particular they are concerned about the effects of using a sub bottom acoustic profiler, in water as shallow as this will have on the Whelk population. In general the opinion of the Fishing industry is that offshore seismic survey work has a negative effect on catch rates for some time after a survey has been carried out in an area. While we acknowledge the intensity of the proposed acoustic work is far lower than that used for offshore oil and gas exploration, members are concerned that the fact that the water is much shallower in this area will mitigate against this. For most members concerned, Whelk is the most important fishery to them. Any negative effect on the Whelk population in the short, medium or long term, could be economically detrimental to them. Again acknowledging that this application is only for site investigation work members are concerned with the unknown long term effects such developments may have particularly given the amount of interest in ORE development in the general area and the cumulative effects these potential developments will have combined. **Finally to conclude**, we would like to thank DHLGH for the opportunity to make this submission and we trust our concerns will be given the consideration they deserve	particle motion, and there is no evidence to suggest that whelk are in any way sensitive to this impact. There are a number of ecological field studies which compare mortality of a range on invertebrates, including scallop, lobster and clam at sites where seismic survey has occurred which conclude that there is no evidence of increased mortality due to exposure to noise. (Parry et al., 2002[75]; Harrington et al., 2010[76] ; Payne et al., 2007[77] ; Day et al.,2016[78]; La Bella et al., 1996[79]). In addition, studies of catch rate and abundance of shellfish species between sites where seismic activity has occurred and those where it has not, indicate no differences in catchability (Wardle et al., 2001[80]; Parry et al., 2002[4]; Christian et al., 2003[81]; Parry and Gason, 2006[82]; Courtenay et al., 2009[83]). It should be noted that the surveys proposed as part of this Foreshore Licence application emit sound at a lower magnitude than the seismic surveys studied. The potential for adverse effect as a result of physical disturbance will be similarly limited, particularly when the resilience of this species is considered and that survey activity (such as benthic and geotechnical) impacts will be highly localised and occur over relatively small spatial and temporal scales. ESB is committed to working with individual fishers and also with their representative Producer Organisations and Inshore Fisheries Forums with the objective of ensuring that survey activities can be completed safely and without damage to fishing gear, survey equipment or vessels. ESB is currently in the process of organising a meeting with NIFA and NIFO and hope to meet with them in the near future.

[75] Parry, G., Heislers, S., Werner, F., Asplin, D., Gason, H. (2002). Assessment of environmental effects of seismic testing on scallop fisheries in Bass Strait. Report number: 50. Affiliation: Marine and Freshwater Resources Institute.
[76] Harrington, J.J., McAllister, J., Semmens, J.M., (2010). Assessing the Short-Term Impact of Seismic Surveys on Adult Commercial Scallops (Pecten fumatus) in Bass Strait. Tasmanian Aquaculture and Fisheries Institute, University of Tasmania.
[77] Payne, J., Andrews, C., Fancey, L., Cook, A., Christian, J. (2007). Pilot Study on the Effects of Seismic Air Gun Noise on Lobster (Homarus americanus). Canadian Technical Report of Fisheries and Aquatic Sciences No. 2712.
[78] Day, R.D., McCauley, R.D., Fitzgibbon, Q.P., Hartmann, K., Semmens, J.M. (2016). Assessing the impact of marine seismic surveys on southeast Australian scallop and lobster fisheries. Fisheries Research and Development Corporation, University of Tasmania, Hobart, FRDC 2012/008.
[79] La Bella, G., Cannata, S., Froglia, C., Modica, A., Ratti, S., Rivas, G. (1996). First Assessment of Effects of Air-Gun Seismic Shooting on Marine Resources in the Central Adriatic Sea. 10.2523/35782-MS. Conference: SPE Health, Safety and Environment in Oil and Gas Exploration and Production Conference, pp227-238.
[80] Wardle, C.S., Carter, T.J., Urquhart, G.G., Johnstone, A.D.F., Ziolkowski, A.M., Hampson, G., Mackie, D. (2001). Effects of seismic air guns on marine fish. Continental Shelf Research, Volume 21, Issues 8–10. pp1005-1027. ISSN 0278-4343. https://doi.org/10.1016/S0278-4343(00)00122-9.
[81] Christian, J.R., Buchanan, R.A., Mathieu, A., White, D., Thomson, D.H. (2003). Effect of seismic energy on snow crab (Chionoecetes opilio). Environmental Research Funds Report No. 144. Calgary. 106 p.
[82] Parry, G.D., Gason, A. (2006). The effect of seismic surveys on catch rates of rock lobsters in western Victoria, Australia. Fisheries Research, Volume 79. Issue 3, pp272-284. ISSN 0165-7836. https://doi.org/10.1016/j.fishres.2006.03.023.
[83] Courtenay, S., Boudreau, M., Lee, K. (2009). Potential Impacts of Seismic Energy on Snow Crab: An Update to the September 2004 Peer Review. Publisher: Environmental Studies Research Funds Report No. 178.