# ForthWind Offshore Demonstration Site, Methil, Fife.

Non-Technical Summary

April 2022

FORTHWIND

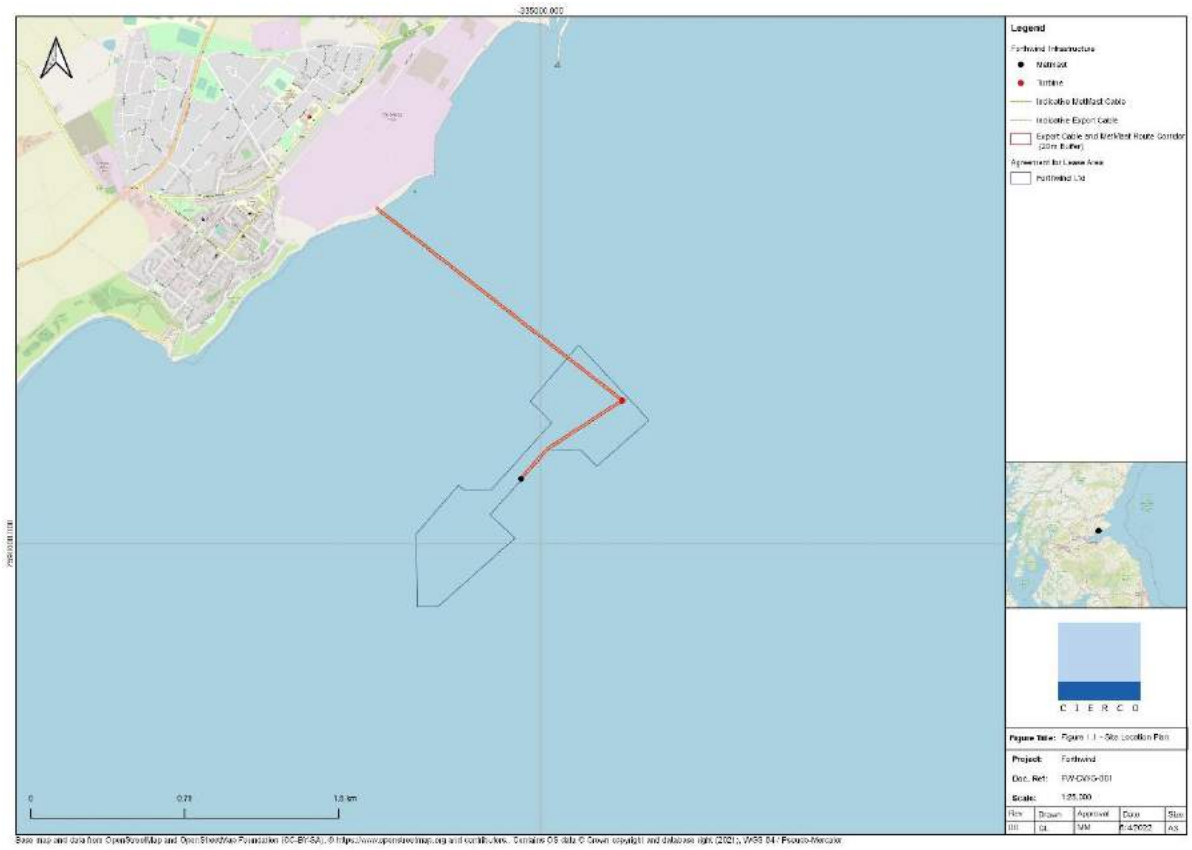
# Contents

## 1. INTRODUCTION

This Non-Technical Summary (NTS) forms part of the Environmental Impact Assessment Report (EIAR) to accompany an application under Section 36 of the Electricity Act 1989 and an application for a Marine Licence under the Marine (Scotland) Act 2010, for consent to Marine Scotland by Forthwind Ltd ("The Applicant"). The application relates to the installation and operation of the Forthwind Demonstration Project ("the Proposed Development"), located on the northern shore of the Firth of Forth at Methil, Scotland.

The Proposed Development will be located approximately 1.5 kilometres (km) seaward of the mean high water springs (MHWS) as shown in Figure 1.1, below. The Proposed Development will consist of a single test and demonstration wind turbine with an installed capacity of up to 20 MegaWatts (MW), with a maximum blade tip height of 280 m. The Proposed Development also includes a Metereological Mast (MetMast) located 625 m south-west of the turbine, with a height of 160 m HAT, an export cable and a communications cable.

*Figure 1.1 - Site Layout Plan*




## 2. EIA PROCESS AND METHODOLOGY

Environmental Impact Assessment (EIA) is a process aimed to ensure that permissions for developments with potentially significant effects on the environment are granted only after assessment of the likely significant environmental effects has been undertaken. The assessment must be carried out following consultation with statutory consultees, other interested bodies and members of the public. The purpose of identifying significant effects is to ensure that decision makers are able to make an informed judgement on a proposal. Where one or more significant effects are identified, it does not automatically follow that a proposal should be refused.

With regard to the Proposed Development, the following regulations are applicable:

- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017; and
- The Marine Works (Environmental Impact Assessment) Regulations 2017.

This EIAR has been prepared following a systematic approach to EIA and project design. The process of identifying environmental effects is both iterative and cyclical, running in tandem with the iterative design process.

The key elements in EIA are:

- Scoping and ongoing consultation including consideration of responses and how these should be addressed;
- Technical environmental assessments – including baseline studies, input to the design process and identification of potential significant environmental effects;
- Preparation of the ES; and
- Submission of the application and ES including publicity of the EIA application.

A request for a scoping opinion was originally issued to the Scottish Ministers in 2021. This was widely circulated among statutory and non-statutory consultees and among local Community Councils.

A public exhibition was held at the Hydrogen Office, Ajax Way, Methil Docks on 13th December 2021 from 10am until 8pm. This event provided the opportunity to speak with representatives of the Developer, learn about the Proposed Development and preliminary findings of the EIA, and provide comment on the proposal.

Environmental effects have been assessed, to identify any effects that may be significant in the context of the EIA regulations Mitigation is proposed where possible to avoid, reduce or remedy effects where they are identified as being significant.

In accordance with the EIA Regulations, the assessment has considered 'cumulative effects'. By definition these are effects that result from cumulative changes caused by past, present or reasonably foreseeable actions together with the Proposed Development.

## 3. PROJECT DESCRIPTION

The Proposed Development is located on the northern shore of the Firth of Forth at Methil, Scotland and is approximately 1.5 km from the MHWS.

As a final detailed design of the Proposed Development has not yet been completed, a 'Project Design Envelope' has been developed, which sets out a range of parameters such as turbine size and possible foundation types. For each receptor within the EIAR the 'worst-case' effects of the Proposed Development have been considered. The final design of the Proposed Development will fall within the assessed Project Envelope and will therefore be within the worst case presented in this EIAR. The Proposed Development Project Design Envelope broadly consists of the following:

- A wind turbine generator (WTG) up to 280 m to blade tip height and associated foundations, which may be monopile or pin pile foundations;
- A meteorological mast (metmast) up to 160 m tall with associated foundations, which may be monopile or pin pile foundations;
- A cable corridor within which the export cable and communications cable will be laid in trenches to connect the turbine onshore, as well as connecting the turbine to the metmast.

The onshore elements of the Proposed Development, compromising underground cabling, turbine transformers, and associated storage areas are not included within this application and are subject to a separate onshore planning application. The onshore elements of the Proposed Development will be located within Fife Energy Park.

### 3.1. Turbine Technology

The turbine, which will be installed on the development site, represents a step change in offshore wind turbine design, with the ambition to significantly reduce the cost of offshore renewable wind energy. The turbine design is visually similar to a 'conventional' offshore wind turbine, although it is technically different (it is larger, has a higher generation capacity and has a different internal technical design). The turbine design consists of a three

bladed upwind horizonal axis wind turbine with a rotor diameter of up to 255 metres. The turbine rotor and nacelle are mounted on top of a tubular steel tower with a hub height of 156 m above Highest Astronomical Tide (HAT).

### 3.2. Onshore Construction Activities

The onshore elements of the Proposed Development will be subject to a separate planning application and have not been assessed within this Environmental Impact Assessment (EIA).

In order to ensure that all mitigation measures outlined within this EIAR are carried out on site, contractors will be provided with the following documents which must be adhered to through the construction process:

- Pollution / Spill Prevention Plan, relevant environmental procedures and method statements;
- Planning conditions; and
- Other requirements of statutory bodies.

Site safety and emergency procedures will also be required during the construction, operation and decommissioning of the Proposed Development.

### 3.3. Decommissioning

The Forthwind Demonstration turbine is due to be operational for 25 years. Following the cessation of commercial operations, the Proposed Development will be decommissioned in accordance with an approved decommissioning plan. This will involve the removal of the turbine. Following a significant period of time it is possible that removal of below ground infrastructure (including the foundations) could be more environmentally damaging than leaving it in place. Provision will be made to remove this infrastructure, however the requirement to decommission will be re-evaluated at that time. The infrastructure beneath the seabed will be left in situ.

The process involved in decommissioning are likely to be similar to the installation and construction activities, but of a smaller environmental impact magnitude.

Alternatively, it is possible that a consent will be sought to extend the operational life of the Proposed Development, although this will require the relevant assessments and consents being undertaken and obtained prior to the end of the operational period, and in accordance with the legislation at the time.

## 4. PLANNING POLICY AND CONTEXT

In order to construct, operate and decommission the Proposed Development, a Section 36 Consent (Electricity Act, 1989) is required. Fife Council is a Statutory Consultee and regard must be given to the Proposed Development Plan.

The planning framework and the various policies that form the relevant planning context against which to assess the Proposed Development have been identified. It has been the intention of the EIAR to assess whether the Proposed Development complies with policy.

Advice on offshore wind energy is provided through a suite a national planning guidance and legislation, including the following:

- The Marine (Scotland) Act 2010
- The Marine and Coastal Access Act 2009
- UK Marine Policy Statement (2011)
- Scotland's National Marine Plan (2015)
- Sectoral Marine Plan for Offshore Wind Energy
- National Planning Framework 3 (NPF3) (2014)
- Scottish Planning Policy (SP) (2014)

## 5. SEASCAPE, LANDSCAPE AND VISUAL RESOURCES

A seascape, landscape and visual impact assessment (SLVIA) has been carried out on the potential landscape and visual effects arising from the Proposed Development.

The SLVIA focussed upon the assessment of effects on landscape and visual receptors within a 25 km radius of the Proposed Development as it is within this area that significant effects are more likely to occur. The SLVIA has also assessed the effects on 22 viewpoints which are representative of visual receptors found within 25 km of the Proposed Development. Effects on the landscape and visual resources arising from developments can occur in one of five ways; firstly, effects on the physical fabric of the Proposed Development site (introduction of a new structure, visual focus on the area etc.); secondly, effects on the surrounding landscape character; thirdly, effects on areas designated for their scenic beauty; fourthly, effects on views; and finally, cumulative effects arising from the addition of the Proposed Development to other windfarms. Assessment of cumulative effects considers windfarm developments that are within 35 km radius of the Proposed Development to allow for overlapping visibility at the edge of the Proposed Development study area.

The assessment concluded that there will be significant effects on the following landscape and visual resources:

- Shoreline edges of the Wemyss Coast Local Landscape Areas (LLA) and elevated parts of West Wemyss;
- Section of the Fife Coastal Walk between East Wemyss and Buckhaven and between Lundin Links and Buckhaven;
- Southern areas of Buckhaven where there are clear views of the Development, although the majority of the settlement will not experience significant effects;
- Shoreline area of the “Coastal Hills” Landscape Character Type (LCT); and
- The West Wemyss to Buckhaven Seascape Character Unit (CCA) and Leven Links (G) CCA.

The limitation of significant effects is mainly due to the heavily modified context of the Proposed Development site and its location 1.5 km seaward of the Fife Energy Park. These factors reduce the effects of the perceived coastal character, as the Proposed Development is associated more with the inshore waters of the Firth of Forth and the developed coastline at Methil than the rural landward areas.

Significant effects on coastal character and visual amenity resulting from the Proposed Development will be contained within Fife and limited to local geographical areas around the Proposed Development where it will be visible and most prominent. Where there will be limited or no visibility of the Proposed Development, due to screening by local topography, buildings and vegetation, no significant effects will occur.

The Development will not affect any landscape designations of national importance.

The Development will not result in significant effects on any Special Landscape Areas (SLAs) within the study area nor will it result in any significant effect on the landscape and visual amenity of any Gardens and Designed Landscapes (GDLS).

The addition of the Proposed Development will result in significant cumulative effects with the already operational test turbine at the Fife Energy Park (known as the LevenmouthDemonstration Turbine). The Zone of Theoretical Visibility (ZTV) analysis indicated that the area most likely to be affected by cumulative effects will be the area between Kirkcaldy, Glenrothes and Methil and the coastal area between Methil and Crail. However it is considered that any significant cumulative effects will be no greater than those significant effects identified for the Development alone.

## 6. ORNITHOLOGY

An assessment of the construction, operation and decommissioning of the Proposed Development on ornithological receptors has been undertaken. The assessment focussed on the key species and designated sites considered to have connectivity with the Proposed Development due to potential collision, and disturbance/displacement impacts.

On the basis of current information, it has been determined that the Proposed Development will have no significant impacts on the ornithological resource during construction, operation and decommissioning. The estimated collision risk for all species that have relatively frequent flight activity at the potential collision risk height is considered to be low with a level of mortality that should not give rise to any adverse effects on the viability of designated sites populations. Given very small scale of the effects, no mitigation is considered necessary to reduce effects, however a Pollution Prevention Plan will be in place to protect birds from pollution during all phases of the Proposed Development.

As a result, it is considered that there would be no significant adverse effects on ornithological receptors, the integrity of the Firth of Forth Special Protection Area (SPA), the Forth Islands SPA and the Outer Firth of Forth and Tay Bay Complex SPA as a result of the construction, operation and decommissioning of the Proposed Development, alone or in combination with other similar developments.

## 7. MARINE MAMMALS

An assessment of the construction, operation and decommissioning of the Proposed Development on marine mammals has been undertaken.

Potential impacts considered from the Proposed Development on marine mammals include habitat loss, disturbance during construction and operation and indirect changes to prey availability. However such effects have been addressed through a range of mitigation measures including the presence of a Marine Mammal Observer (MMO) during construction works.

Based on the information available regarding the presence of marine mammals and the likely pathways from the effects during construction, operation and decommissioning, any impact from the construction, operation and decommissioning phases on marine mammals are deemed to be negligible and therefore not significant.

## 8. COMMERCIAL FISHERIES

An assessment of the construction, operation and decommissioning of the Proposed Development on the commercial fishing resource has been undertaken.

The Proposed Development area is of importance to local fishing fleets, especially those targeting lobster, crabs, nephrops and, to a lesser extent, scallops; confirmed by landings, tracking data and consultation with local and national fishing organisations.

Moderate impacts on the commercial fishing resource could occur during construction and decommissioning when fishing vessels may be excluded completely from the area, however, the duration will be relatively short and mitigation through the application of safety zones and proper promulgation of information should keep disruption to as low as possible.

During the operational phase of the Proposed Development, much of the potting and activity for lobsters and crabs will be able to resume operation in close proximity to the Proposed Development, however, if cables cannot be buried a minor impact will occur for fishing methods which are susceptible to snagging. To mitigate the impact procedures will be put in place for the event of interactions between wind farm construction and fishing activities (i.e., claims for lost and/or damaged gear). Burial, or where not possible, protection of the electricity export cabling will be undertaken together with removal of seabed obstacles during and post construction. A post-construction survey will be undertaken and seabed rectification procedures will be identified.

## 9. CULTURAL HERITAGE

An assessment of the potential impacts of the Proposed Development upon the maritime archaeology environment has been undertaken. A desk-based review of available information and consultation with Historic Scotland has been undertaken to identify and describe the archaeological environment around the site.

From the assessment the following heritage assets were identified within 7.5 km of the Proposed Development; five Scheduled Ancient Monuments (SAMs); five listed buildings of the highest grade; seven conservation areas; and one Gardens and Designated Landscape. No significant effects are anticipated to occur as a result of impact to the settings of any cultural heritage asset arising from the construction, operation or decommissioning of the Proposed Development. Although a number of non-significant effects have been identified, these are considered temporary (albeit long-term) and fully reversible upon the decommissioning of the Proposed Development.

In order to mitigate the risk of damage to any previously unrecorded archaeological remains, a Written Scheme of Investigation (WSI) and Protocol for Archaeological Discoveries (PAD) will be prepared to mitigate construction impacts on the event of any unexpected archaeological discoveries during construction. This protocol will also include appropriate archaeological briefings for all personnel involved in the construction, operation and decommissioning activities associated with the Proposed Development. The PAD will be in place for the life of the Proposed Development and will be updated when required should details within the document change, for example contact details for key stakeholders.

## 10. FISH AND SHELLFISH ECOLOGY

An assessment of the Proposed Development upon the fish and shellfish ecology was undertaken. The construction, operation and decommissioning of the Proposed Development has the potential for a variety of direct and indirect effects, particularly on those populations living within the Firth of Forth. Receptors are assessed in relation to key spawning, nursery, feeding and over-wintering areas as well as important potential migratory pathways.

A detailed review of the current literature and the site specific data gathered during the benthic ecology 2 m beam trawl survey was used to give an overview of the general fish and shellfish ecology of the core study area of the Proposed Development. Plaice were identified as most abundant, followed by sand goby and dab. Eight of the 17 recorded taxa are potentially of commercial importance including plaice, cod, dab and lemon sole, as well as shellfish species such as brown crab, common whelk and scallop. Two recorded species are listed as Priority Marine Features (PMFs); cod and sand goby.

Potential effects were identified for construction, operational and decommissioning phases. These include underwater noise (construction and decommissioning) and electromagnetic fields (EMF). The Proposed Development has no significant impacts on any fish or shellfish species and no likely significant effect on Atlantic salmon or sea lamprey as qualifying interests of any freshwater SACs.

Proposed Development design mitigation measures are proposed to minimise the significance of underwater noise, suspended solid concentrations, sediment deposition, EMF and pollution prevention planning. As a result no specific mitigation measures are suggested for construction or operational effects as all effects and cumulative effects are assessed are considered to be of negligible or minor significance. Therefore, it is considered that any changes to the local and regional fish and shellfish species of the core Study Area within the Firth of Forth will be within naturally occurring population fluctuations and as such they will not be adversely affected by the Proposed Development.

## 11. NOISE

An assessment of the effects of noise from the Proposed Development on noise sensitive receptors was undertaken.

Construction noise will be of a limited impact and duration, being confined to working hours as agreed with Marine Scotland through planning condition. The application of mitigation measures where applicable will also ensure that any noise from site will be adequately controlled such that construction noise effects are considered not significant.

The effects of noise from operation of the Proposed Development, taking account of the cumulative effects of the Levenmouth Demonstration turbine, have been assessed using the methodology described in ETSU-R-97 and in accordance with best practice guidance. ETSU-R-97 provides a framework for the assessment and rating of

noise from wind turbine installations. It has become the accepted standard for such developments within the UK and is specified as the appropriate assessment and rating guidance for wind farms in current Scottish planning policy.

The assessment of the operational noise associated with the Proposed Development has been shown to comply with ETSU-R-97. Therefore, operational noise effects are considered acceptable and not significant in the context of the EIA Regulations. When considering the cumulative effects of the Levenmouth Demonstration Turbine, it was concluded that the effects would be negligible and below the derived noise limits in most cases. Cumulative operational noise levels are considered acceptable and not significant. Although some limited exceptions were identified for properties closest to the Levenmouth Demonstration Turbine, the operators of both schemes can operate their turbines such that suitable noise levels can be achieved in practice, and this can be secured by conditions.

## 12. SHADOW FLICKER

An assessment of potential shadow flicker effects associated with the Proposed Development has been carried out in line with Scottish Government Guidance. The assessment identified 32 properties that had the potential to be impacted by shadow flicker.

During the operational phase 28 of the 32 assessed properties are expected to experience shadow flicker, however no likely effects are predicted to exceed the threshold of 30 hours per annum. Therefore, the effects are not significant in terms of the EIA Regulations. No shadow flicker effects will occur during construction or decommissioning.

Cumulative shadow flicker effects are expected to surpass the 30 hour per annum threshold at 11 receptors. However, cumulative shadow flicker exceedances have been proven to be attributed to the Levenmouth Demonstration Turbine. No likely cumulative effects are predicted to exceed the shadow flicker thresholds from the Proposed Development. As such, cumulative shadow flicker effects from the Proposed Development are not significant in terms of the EIA Regulations.

In the event that complaints are made regarding shadow flicker effects and that these complaints are proven to constitute a Statutory Nuisance, then measures can be taken which would allow for shadow flicker to be reduced. A control system could be employed for those circumstances where shadow flicker could be attributed specifically to the Proposed Development.

## 13. SHIPPING AND NAVIGATION

An assessment of the navigational safety issues arising from the construction, operation and decommissioning of the Proposed Development was undertaken. Potential impacts may include collision with foundation installation and wind farm service vessels, turbine and foundation collision, grounding on sub-sea cable protection and effects on communication, radar and positioning systems.

The effects of the Proposed Development on shipping and navigation have been considered for all phases of the Proposed Development, with numerous effects identified involving a number of receptors. The significance has been determined as either extremely remote or remote in terms of frequency of occurrence and minor in terms of severity of consequence, with the significance of effect either broadly acceptable or tolerable with monitoring, which are both not significant in EIA terms.

A mitigation measure involving ongoing consultation with Forth Ports, as the competent harbour authority for the area, is suggested and will result in the residual effects being broadly acceptable. No further developments are considered to have the potential to result in cumulative effects on shipping and navigation and so no cumulative effects have been considered.

## 14. SOCIO-ECONOMICS

An assessment of the Proposed Development on the local and national economy, nearby tourist attractions and recreational facilities and land-use was undertaken based on desk based studies, reviews of relevant offshore

guidance and consultations with Scottish Government and organisations related to marine recreation and tourism.

The construction of the Proposed Development and setting up of the Scottish subsidiary will directly create job opportunities for six local staff in the areas of project management, legal and accountancy services, in addition to generating opportunities for up to six local workers to establish site facilities, office, workshop and grid connection cabling and buildings. Once the Proposed Development is operational, there will be six full-time maintenance and administrative jobs created.

In addition to the direct and indirect job impacts, successful delivery of the Proposed Development in Fife will help to:

- Increase local industry and academic collaboration, thereby building knowledge capacity in the local area;
- Make significant progress in integrated system technology for offshore wind;
- Facilitate the growth and development of the industry, develop industry process, workforce skills and industry culture in the Fife area; and
- Raise the profile of Fife at an international level.

The construction, operation and decommissioning phases of the Proposed Development is not predicted to have any indirect or direct significant socio-economic effects. Positive effects are predicted to arise in relation to employment, skills and training, and the development of the regional and Scottish supply chain to support the continuing development of the renewables and offshore wind industry. These effects can be significantly enhanced with the future deployment of the prototype technology and the contribution it can make to the growth of the industry generally and specifically the consolidation of knowledge and expertise within the region which will position it to capitalise upon future commercial and development opportunities.

## 15. BENTHIC ECOLOGY

An assessment of the construction, operation and decommissioning of the Proposed Development on the benthic ecology resource has been undertaken. The receptors considered in the assessment include seabed habitats and the communities of plants and animal species typically associated with each habitat type.

In order to assess the potential effects of the Proposed Development on benthic ecology, a site specific survey was undertaken in 2014 with 19 sites selected within and around Proposed Development site with drop down videos and faunal grab samples taken at each site. In addition, five trawl sites were selected across the survey array for 2 m scientific beam trawling.

Potential effects were identified for the construction, operational and decommissioning phases. These included habitat disturbance, increased suspended deposition and smothering, underwater noise and vibration, release of environmentally harmful substances, introduction of new habitats, EMF and heat effects and a change to the local hydrodynamic regime. Each of these effects was assessed in terms of their likely effects on benthic ecological receptors.

No specific mitigation measures are suggested for construction, operational or decommissioning effect as all effects and cumulative effects assessed are considered to be of negligible or minor significance. Therefore, it is considered that any changes to the local and regional benthic habitats / species of the Study Area within the Firth of Forth will be within naturally occurring population fluctuations an as such, they will not be adversely affected by the Proposed Development.

## 16. MISCELLANEOUS ISSUES

An assessment of the Proposed Development on the following miscellaneous issues was undertaken:

- Health and Safety Considerations;
- Radio Links;
- Major Accidents and/or Disasters; and

- Climate Change and Greenhouse Gases.

### 16.1. Health and Safety Considerations

The Principle Contractor will be responsible for producing a health and safety plan to be implemented during the construction phase of the Proposed Development.

The site will be operated to Renewable UK 'Offshore Wind and Marine Energy Health and Safety Guidelines and Guidelines for Health and Safety in the Wind Energy Industry and "Guidelines for Health and Safety in the Marine Energy Industry.

### 16.2. Radio Links

An assessment of the potential of the Proposed Development to interfere with radio systems operated by utility companies in support of their regulatory operations was undertaken. The conclusions of the assessment were that no potential problems were identified associated with the Proposed Development.

### 16.3. Major Accidents and/or Disasters

An assessment of the potential major accidents and/or disasters was undertaken based on the IEMA Major Accidents and Disasters In EIA: A Primer. The assessment includes the identification of man-made hazards including structural collapse, design error, terrorism, as well as natural hazards including earthquakes and volcanic eruptions.

The Proposed Development is not located within an area known for natural disasters such as hurricanes or volcanic eruptions. The only relevant and most probably natural disaster that could affect the Proposed Development is severe weather and high winds. Wind turbines are designed to withstand extreme weather conditions due to the exposed locations wind farms are often installed.

No major accidents are considered likely to occur as a result of the Proposed Development. Resilience in the event of severe weather and fire is a core component to the test and demonstration site design. The turbine will utilise a remote operational control system (controller and SCADA systems) that will be used during the operational phase. This system allows both automated and remote user shutdown in order to protect assets in the event of extreme weather conditions including extreme high wind or ice loading.

With the implementation of mitigation measures, no significant effects associated with accidents and disasters are anticipated.

### 16.4. Climate Change and Greenhouse Gases

The Proposed Development landfall location has been designed to consider the outputs from the Dynamic Coast project (i.e. considering the impacts of coastal climate change). The onshore cabling avoids any areas of influence from sea level rise. The onshore transformer may be in the vicinity of influence under a high emission scenario, however long term shoreline management to protect existing industrial assets will be in place.

An assessment of the potential impacts from the pre-construction, construction, operation and maintenance and decommissioning of the Proposed Development as a whole (onshore and offshore infrastructure) on the generation of Greenhouse (GHG) emissions.

The assessment found that there are no negative significant Greenhouse Gases predicted to arise during the construction, operation or decommissioning phase of the Proposed Development. Positive effects are predicted to arise in relation to a significant reduction in GHG emissions should energy production replace an equivalent CCGT unit.

These effects can be significantly enhanced with the future deployment of the prototype technology and the contribution it can make to the growth of the offshore wind industry generally and specifically the consolidation of knowledge and expertise within the region which will position it to capitalise upon future commercial and development opportunities.

## 17. OTHER MARINE USERS

An assessment was undertaken to assess the potential effects of the Proposed Development upon other marine users including military activities and civil aviation activities.

Areas in and around the Firth of Forth are predominantly used by the Navy for submarine exercises, mine countermeasures and minesweeping, and explosive trials. The Firth of Forth at Fife is partially covered by a MAD safeguarding consultation zone, the Forth is also partially covered by two airspace restriction zones and numerous naval activity areas. The Proposed Development falls within an area of naval activity area for general practice, mine countermeasures and of aviation practice/areas of concern. Consultation with the MoD stated there were no issues expected to arise from the Proposed Development on their facilities. However, given the scale of the turbine, they would require it to be lit for aviation safety reasons. This is commonplace for the majority of modern offshore and onshore turbines.

The Proposed Development is not located within any aviation safeguarding zones and during consultation, neither the British Aviation Authority, Civil Authority or the National Air Traffic Services En Route Plc had any objections to the Proposed Development. As a result, a detailed assessment on effects on military and aviation activities has not been undertaken as no effects would be anticipated.

## 18. CONCLUSIONS

Since consent award of the original Forthwind project in 2015 advances have been made in design and technology within the offshore wind farm industry, including increases in wind turbine size and capacity, improvements to foundation design and energy optimism. To enable such advances to be included within the project design, Forthwind is seeking additional consents for optimised projects within the same boundaries as the originally consented projects.

This EIA has assessed the potential impacts of the optimised Proposed Development on relevant environmental parameters scoped into the assessment.

Across all topics assessed, conclusions of impact significance are comparable or reduced compared to the 2015 Offshore ES. Where significant impacts are identified appropriate mitigation has been identified and will be applied to ensure any such impacts are managed or reduced wherever possible.

The conclusion of this EIA Report is that given the successful implementation of the stated mitigation measures committed to by Forthwind, combined with ongoing dialogue with interested stakeholders and the regulatory authorities, the predicted adverse impacts for the Forthwind project are considered to be acceptable. The precautionary nature of the assessment approach, based on worst-case scenarios, also means that, in reality, any impacts are likely to be less than predicted. Significant beneficial impacts for the Scottish economy are also predicted during the development and construction of the project, including direct impacts upon employment.