



# **Awel y Môr Offshore Wind Farm**

## **Category 6: Environmental Statement**

### **Volume 1, Annex 3.2: Transboundary Screening**

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[www.awelymor.cymru](http://www.awelymor.cymru)

RWE Renewables UK Swindon Limited

Windmill Hill Business Park  
Whitehill Way  
Swindon  
Wiltshire SN5 6PB  
T +44 (0)8456 720 090  
[www.rwe.com](http://www.rwe.com)

Registered office:  
RWE Renewables UK Swindon Limited  
Windmill Hill Business Park  
Whitehill Way  
Swindon

# GOBe



## Volume 1, Annex 3.2: Transboundary Screening Report

Awel y Môr Offshore Wind Farm

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## Glossary

Term	Definition
Array area	The area where the Wind Turbine Generators (WTGs), Offshore Substation Platforms (OSPs), associated foundations, inter-array cables, inter-platform cables, export cables (including the GyM interlink cable), a meteorological mast (met mast) (or suitable alternative such as floating LiDAR) and Permanent Vessel Moorings may be located.
Cumulative effect	The potential combined effect of Awel y Môr in-combination with the effects from one or more different projects, on the same single receptor/source.
Development Consent Order	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the relevant Secretary of State (SoS).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the importance, or sensitivity, of the receptor or resource in accordance with defined significance criteria.
EIA Regulations	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended).
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Impact Assessment (EIA) Report.
Landscape and Visual Impact Assessment (LVIA)	ES chapter that sets out the results of the likely significant effects on landscape and visual amenity (application ref: 6.3.2).
Marine Licence	A licence required under the Marine and Coastal Access Act 2009 for marine works which is administered by Natural Resources Wales (NRW) Marine Licensing Team (MLT) on behalf of the Welsh Ministers.
Planning Inspectorate (PINS)	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Scoping	An early part of the EIA process by which the key potential significant impacts of the project are identified, and methodologies identified for how these should be assessed. This process gives the regulator and key consultees opportunity to comment and define the full extent of the final EIA – which can also then be tailored through the consultation process.
Scoping Boundary	The spatial limits in which the Awel y Môr offshore wind farm may be built.
Seascape, Landscape and Visual Impact Assessment (SLVIA)	ES chapter that sets out the results of the likely significant effects on seascape, landscape, and visual amenity (application ref: 6.2.10).
Transboundary effect	Transboundary effects arise when impacts from the development within one State affects the environment of another State(s).

## Acronyms

Acronyms	Definition
AyM	Awel y Môr
AyMOWFL	Awel y Môr Offshore Wind Farm Limited (the Applicant)
DCO	Development Consent Order
ECC	Export Cable Corridor
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
ES	Environmental Statement
GyM	Gwynt y Môr
HRA	Habitats Regulations Assessment
ICES	International Council for the Exploration of the Sea
IROPI	Imperative Reasons of Overriding Public Interest
MHWS	Mean High Water Springs
MU	Management Unit
MWR	The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended)
NRA	Navigational Risk Assessment
NRW	Natural Resources Wales
NSIP	Nationally Significant Infrastructure Project
O&M	Operation and Maintenance
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SCI	Sites of Community Importance
SoS	Secretary of State for Business, Enterprise and Regulatory Reform
SPA	Special Protection Area
SSC	Suspended Sediment Concentrations
UNECE	United Nations Economic Commission for Europe
WTG	Wind Turbine Generator

Zol	Zone of Influence
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## Units

Units	Definition
km	Kilometre
km <sup>2</sup>	Square kilometre
kV	Kilovolt
m	Metre
MW	Megawatt
nm	Nautical mile

# 1 Introduction

## 1.1 Overview

- 1 The Awel y Môr Offshore Wind Farm (AyM) is a proposed sister project to the operational Gwynt y Môr Offshore Wind Farm (GyM) off the north east coast of Wales (see Figure 1). AyM will comprise an array of offshore Wind Turbine Generators (WTGs) with an overall capacity greater than 350 Megawatts (MW) and therefore constitutes a Nationally Significant Infrastructure Project (NSIP) under Section 15(3B) of the Planning Act 2008.
- 2 Awel y Môr Offshore Wind Farm Limited (the Applicant) submitted its Scoping Report to the Secretary of State (SoS) on 11 June 2020 and the Planning Inspectorate (PINS) published its Scoping Opinion on 22 July 2020. PINS has undertaken transboundary consultation – copies of which are available on the PINS website. PINS responded to the Applicant’s Scoping Report with a Scoping Opinion which indicated that transboundary effects could not be scoped out at that stage as screening had not yet been undertaken. Since then, the Applicant engaged in post-scoping consultation with both statutory and non-statutory consultees (including via the Evidence Plan process, a series of regular consultation meetings with key stakeholders on technical matters), as well as with the public through virtual Public Engagement Days.
- 3 The Applicant published a Preliminary Environmental Information Report (PEIR) responding to feedback, adopting a draft Environmental Statement format for the PEIR, that formed the basis of statutory consultation. The PEIR was published on 31 August 2021.

## 1.2 Purpose of this document

- 4 Transboundary impacts relate to those that may arise from an activity that has the potential to significantly affect the receiving environment or other interests of another country. Specifically, transboundary impacts can be divided into two categories:
  - Impacts that may occur in/ on the environment of another state (i.e. their territory or territorial waters but not including the UK Exclusive Economic Zone (EEZ)); and
  - Impacts that may occur to the interests of another state (for instance commercial fishing taking place within the UK EEZ).

- 5 PINS is required to undertake a screening for potentially significant transboundary effects under Regulation 32 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations'), using project information provided by the Applicant. As required by this regulation, where screening indicates the potential for transboundary effects, the SoS must contact the Government of the relevant state. For the Marine Licence application, this document also defines the scope for the transboundary assessment undertaken under the Marine Works (Environmental Impact Assessment) Regulations 2007 (MWR).
- 6 This document provides an update to the transboundary screening document that was submitted at Scoping and evaluates the likelihood of significant transboundary effects occurring and the transboundary consultation with other member states which has been undertaken to date.

## 2 Policy, legislation and guidance

### 2.1 Environmental impact assessment

- 7 The need to consider transboundary impacts has been embodied by the United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context, adopted in 1991 in the Finnish city of Espoo and commonly referred to as the ‘Espoo Convention’. The Convention requires that assessments are extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary impacts.
- 8 The Espoo Convention has been implemented by the European Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, which was amended by Directive 97/11/EC, Directive 2003/35/EC and Directive 2009/31/EC. In 2011, the initial 1985 Directive and its three amendments were codified by Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the Environmental Impact Assessment (EIA) Directive).
- 9 In relation to the UK’s exit from the European Union (EU), the Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018 provide that the EIA regime under the EIA Regulations 2017 continue to apply in substantially the same form as they did prior to the UK leaving the EU.
- 10 With regards to Nationally Significant Infrastructure Projects, the EIA Directive was transposed into UK law by the EIA Regulations. Regulation 32 of the EIA Regulations requires that where the SoS is of a view that an EIA application will have significant effects on the environment on another state, or the SoS receives a request for involvement from another state, it must undertake a prescribed process of consultation and notification.
- 11 For projects in Welsh waters, a Marine Licence is also required under the Marine and Coastal Access Act 2009. The EIA Directive is also transposed by the MWR, which requires an assessment of transboundary effects to be included within the ES. Regulation 20 of the MWR states that where there is the potential for significant transboundary effects to occur, NRW should consult the authorities of the relevant non-UK state.

- 12 PINS Advice Note 12: Transboundary Impacts (Version 6, PINS, December 2020) sets out the procedures for consultation in association with an application for a Development Consent Order (DCO), where such developments could have significant transboundary effects. The note sets out the roles of PINS, other states and developers. In respect of the latter, developers have no formal role under the Regulation 32 process, as the duties prescribed by Regulation 32 in notifying and consulting with other states on potential transboundary effects are the responsibility of the SoS. Nevertheless, developers are advised to:
- Carry out preparatory work to complete a transboundary screening matrix to assist the SoS in determining the potential for likely significant effects on the receiving environments of other countries;
  - To submit the transboundary screening matrix along with the scoping request, if a scoping opinion is sought by the developer<sup>1</sup>; and
  - Consider, when preparing documents for consultation and application, that PINS may notify the relevant countries of the project.
- 13 The transboundary screening is provided in response to PINS Advice Note 12 and the bullet points above. It provides information about AyM and sets out information relating to the potential effects of the scheme and the interests of the other member states, to assist PINS in forming a view on the likelihood of significant transboundary effects arising from AyM.
- 14 Paragraph 2.6.124 of the National Policy Statement for Renewable Energy (NPS EN-3) and paragraph 2.31.3 of the Draft National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) notes the potential for impacts arising from offshore wind farms on fishermen from other nations who fish in UK waters. This is further considered in Section 5.3.7 of this document.

## 2.2 Habitats Regulations Assessment

- 15 Article 6(3) of the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora (the ‘Habitats Directive’), requires an ‘appropriate assessment’ to be prepared where a plan or project is likely to have a significant effect upon the network of European sites. These include Special Areas of Conservation (SACs), candidate SACs (cSAC), Special Protection Areas (SPAs), potential SPAs (pSPAs), Sites of Community Importance (SCIs), Ramsar sites and priority natural habitat types. These sites may be located within the UK or another state.

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<sup>1</sup> Note that this Transboundary Screening report was not submitted alongside the Scoping Report, however transboundary impacts were considered in each of the offshore receptor chapters and the report identified that the screening matrix would be submitted alongside the ES.

- 16 The Habitats Directive was transposed into UK law by the Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (the 'Offshore Habitats Regulations') for offshore sites beyond 12 nautical miles (nm) and the Conservation of Habitats and Species Regulations 2017 (The 'Habitats Regulations') for sites onshore and offshore sites laying within 12 nm. Regarding the UK's exit from the EU, the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 mean that the Habitat Regulations Assessment (HRA) regime under the Habitats Regulations continues to apply in substantially the same way as it did before the UK left the EU.
- 17 Regulation 24 of the Habitats Regulations sets out the procedure for the assessment of the implications of plans and projects on European sites. Regulation 28 of Offshore Habitats Regulations contain broadly similar statutory provisions to Regulation 24 of the Habitat Regulations. Under Regulation 24 of the Onshore Habitats Regulations and Regulation 28 of the Offshore Habitats Regulations respectively, if the proposed development is not directly connected with or necessary to the management of a site and is likely to significantly affect the site, the competent authority must undertake an appropriate assessment of the implications for that site in view of that site's conservation objectives. PINS Advice Note 10 (Habitat Regulations Assessment (PINS, 2017) recommends a four-stage process:
- Stage 1 Screening - Test of Likely Significance: Determining whether the plan or project "either alone or in-combination with other plans and projects" is likely to have a significant effect upon a site(s);
  - Stage 2 Appropriate Assessment - Where likely significant effects are identified during screening, determining whether, in view of the site's conservation objectives, the plan or project would have an adverse effect on the integrity of the site. If not, the plan can proceed;
  - Stage 3 Alternatives - Where the plan or project cannot be shown to avoid an adverse effect on the integrity of a site, there should be an examination of alternative solutions; and
  - Stage 4 Assessment of "imperative reasons of overriding public interest" (IROPI) - If it is not possible to identify alternative solutions that would avoid an adverse effect on integrity, it will be necessary to establish that IROPI exist. In the event of a negative appropriate assessment (stage 2 above), compensatory measures must also be included with the HRA report, which are considered during Stage 4 if there are no alternatives identified during Stage 3.
- 18 The stages of the process are collectively referred to as the HRA to clearly distinguish from the appropriate assessment, which is a single step within the whole HRA process.

- 19 Advice Note 10 also describes the information which is required to be submitted with the DCO application and highlights the requirement for consultation and engagement with the relevant bodies. Where significant effects are likely on sites in other states, consultation is required with the competent authorities of those states. Therefore, developers should commence engagement with these authorities at the screening stage of the HRA.
- 20 The Screening Report (Innogy, 2020) undertook screening for all sites/ features, regardless of the member state within which they occur; where transboundary sites were screened in for LSE, these are included within the Report to Inform Appropriate Assessment (RIAA). The RIAA accompanies the application and provides the information necessary for transboundary consultation on HRA matters, initially through the identification of transboundary sites where there could be a LSE, followed by the determination of adverse effects alone and in-combination with other relevant plans or projects.

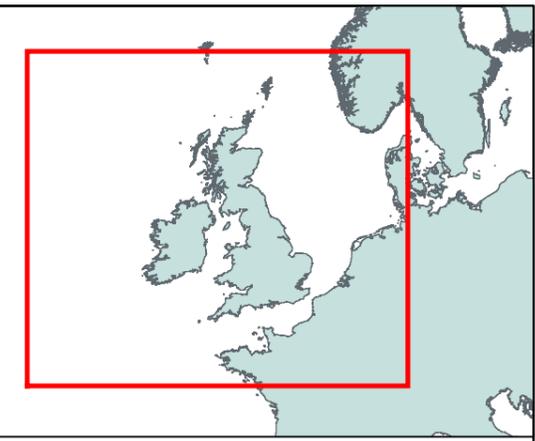
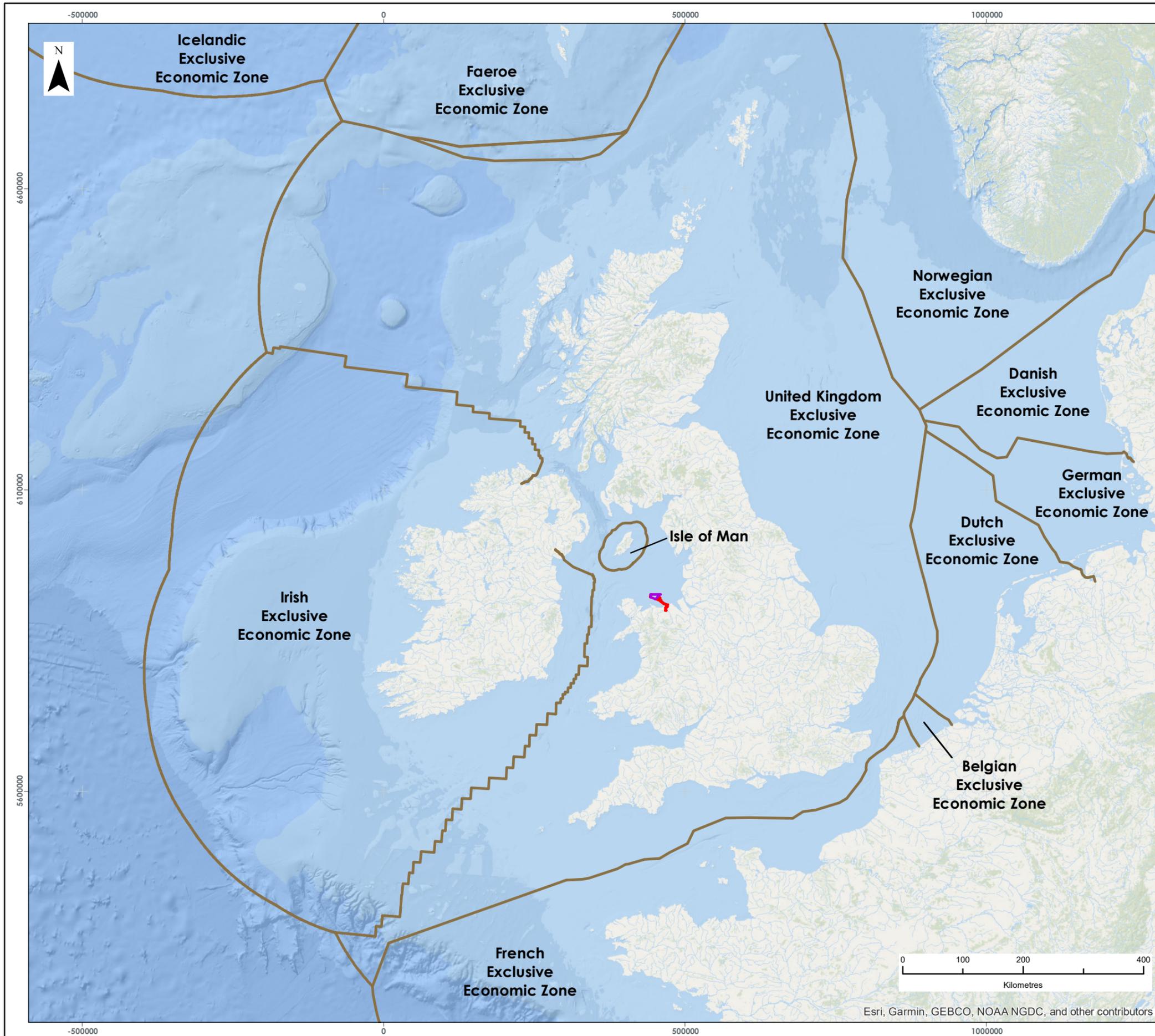
### 3 Study area

21 The AyM array area is located entirely within the UK EEZ. Table 1 and Figure 1 present the distances from the AyM project development boundary to the boundaries of the EEZ or ‘median’ of other states.

Table 1 - Summary of approximate distance to the nearest EEZ (median line) of non-UK states.

EEZ	Distance from AyM to the nearest maritime border (km)
Isle of Man <sup>2</sup>	57.8
Republic of Ireland	94.5
France	381.7
The Netherlands	431.3
Belgium	452.1
Germany	518.1
Denmark	524.8
Norway	527.9
Iceland	1,011.1

<sup>2</sup> Note that the Crown Dependency of the Isle of Man has its own territorial waters.



- LEGEND**
- Order Limits
  - Array Area
  - Exclusive Economic Zones

Data Source:

PROJECT TITLE:  
*AWEL Y MÔR OFFSHORE WINDFARM*

FIGURE TITLE: **Location of Awel y Môr and relevant jurisdictional boundaries**

VER	DATE	REMARKS	Drawn	Checked
1	22/01/2021	For Issue for PEIR	BPHB	RM
2	11/03/2022	For Issue For ES	BPHB	RM

FIGURE NUMBER:  
**Figure 1**

SCALE: 1:6,500,000    PLOT SIZE: A3    DATUM: WGS84    PROJECTION: UTM30N



Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

## 4 Consultation

- 22 The Applicant has conducted pre-application consultation via the EIA scoping process, submitting a Scoping Report to the SoS on 11 June 2020. The Planning Inspectorate (PINS) published its Scoping Opinion on 22 July 2020. The final transboundary screening was received from PINS on 24 September 2020. The Applicant continued to conduct non-statutory and statutory consultation in accordance with the Planning Act 2008, associated guidance and EIA Regulations later in 2021.
- 23 On 31 August 2021, the Applicant published its PEIR which formed the basis of statutory consultation. The transboundary screening report was included with the PEIR and identified that the project has the potential to have interaction outside the UK (EEZ), potentially in territorial waters around the Isle of Man and the Republic of Ireland.
- 24 Under section 42 of the Planning Act 2008, bodies prescribed by Schedule 1 of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 were consulted. In compiling a full list of section 42 consultees, a range of local authorities, landowners and other statutory organisations were identified for the purposes of consultation.
- 25 To date, as part of the consultation, governments, industries and organisations have been consulted with:
- Isle of Man Government;
  - International ferry operators;
    - Stena Line; and
    - Isle of Man Steam Packet Company.
- 26 Transboundary responses were received from the Isle of Man Government and a Regulation 32 response was received from the Republic of Ireland.
- 27 The Applicant also set up an Evidence Plan process prior to, during and following the statutory consultation period and continued to consult with the Evidence Plan ETGs in the post-statutory consultation period. Outside of the Evidence Plan process, consultation continued to take place with non-Evidence-Plan stakeholders regarding issues including transboundary matters.
- 28 Outcomes of these consultations are detailed in full within the consultation report and applied in relevant ES chapters.

## 5 Transboundary screening

### 5.1 Offshore environment – physical environment

- 29 AyM has completed a transboundary screening matrix for the offshore transboundary effects for the physical and biological environment (Table 2) in line with the suggested format set out in Annex 1 of PINS Advice Note 12.
- 30 The conclusions of the transboundary screening for each of the environmental topics are presented together with additional justification within the following sections.

#### 5.1.1 Physical processes

- 31 The physical processes baseline for AyM array area and offshore Export Cable Corridor (ECC) are outlined in full in Volume 2, Chapter 2: Marine Geology, Oceanography and Physical Processes (application ref: 6.2.2).
- 32 In relation to Suspended Sediment Concentrations (SSCs) and deposition in the construction, Operation and Maintenance (O&M) and decommissioning phases of the project, these are expected to be limited to within one tidal excursion (approximately 11 km), beyond which levels of SSC will be within existing background levels. This zone of influence (Zoi) is limited entirely to within the UK EEZ, with no meaningful pathway for effect outside the UK EEZ.
- 33 There is the potential for transboundary impacts upon marine processes in the O&M phase due to potential changes to the hydrodynamic regime. More specifically, the interaction between waves and the foundations of AyM structures, both alone and cumulatively with neighbouring wind farm developments, may result in a reduction in wave energy locally that may extend into the far field, potentially impacting marine processes receptors across international jurisdictions.
- 34 It is therefore concluded that limited transboundary impacts may occur on physical processes receptors outside of the UK EEZ in Isle of Man territorial waters and therefore this has been considered further within the EIA, including consultation with the relevant interested parties.

#### 5.1.2 Marine water and sediment quality

- 35 The marine water and sediment quality baseline for AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 3: Marine Water and Sediment Quality (application ref: 6.2.3).

- 36 The extent of any predicted impacts upon Marine Water and Sediment Quality (MWSQ) are likely to be limited to the spatial extent over which changes to SSCs and deposition may occur (11 km), beyond which levels of SSC will be within existing background levels during construction, O&M and decommissioning activities. This Zol is limited entirely to within the UK EEZ, with no meaningful pathway for effect outside the UK EEZ.
- 37 The potential effects of AyM on MWSQ are likely to be highly localised to within one tidal excursion (approximately 11 km) and small scale. Therefore, direct and indirect effects are concluded to be limited to entirely within the UK EEZ and a transboundary assessment has been screened out in relation to MWSQ.

## 5.2 Offshore environment – biological environment

- 38 AyM has completed a transboundary screening matrix for the offshore transboundary effects for the physical and biological environment (Table 2) in line with the suggested format set out in Annex 1 of PINS Advice Note 12.
- 39 The conclusions of the transboundary screening for each of the environmental topics are presented together with additional detail within the following sections.

### 5.2.3 Benthic subtidal and intertidal ecology

- 40 The benthic subtidal and intertidal ecology baseline for the AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 5: Benthic Subtidal and Intertidal Ecology (application ref: 6.2.5).
- 41 It is considered that there is no pathway by which direct or indirect effects arising from AyM could significantly affect the benthic subtidal and intertidal ecology of an European Economic Area (EEA) state. The extent of any predicted impacts upon benthic subtidal and intertidal ecology is likely to be localised and limited over the project lifetime to the potential maximum distance suspended sediments may be disturbed (approximately 11 km surrounding the array area and offshore ECC based on the tidal ellipse distance) as modelled for GyM.
- 42 Based on the information that any predicted impacts are likely to be limited to the maximum distance SSC may be disturbed (11 km), beyond which levels of SSC will be within existing background levels, it is highly unlikely that potentially significant transboundary effects on benthic subtidal and intertidal receptors will occur outside the UK EEZ with no meaningful pathway for effect outside the UK EEZ, and therefore these receptors are screened out of further transboundary consideration in the EIA.

## 5.2.4 Fish and shellfish ecology

- 43 The fish and shellfish ecology baseline for the AyM array area and offshore ECC are outlined in Volume 2, Chapter 6: Fish and Shellfish Ecology (application ref: 6.2.6). Subsequently, a full baseline characterisation report for fish and shellfish ecology has been agreed as adequate for the purposes of EIA with NRW via the Evidence Plan.
- 44 A screening of potential transboundary effects was undertaken at Scoping which identified that there was potential for transboundary effects to occur in relation to fish and shellfish ecology. It identified there was potential for transboundary impacts upon fish and shellfish receptors from the construction, operation and decommissioning of AyM. Specifically, it was identified that there was a risk of underwater noise impacts from piling during construction to affect migratory fish and the spawning grounds for fish and shellfish within waters around the Isle of Man and the Republic of Ireland. These activities have the potential to directly affect Annex II migratory fish species that are listed as features of designated European sites; or species that are of commercial importance to fishing fleets.
- 45 Indirect effects may also include loss of, or disturbance to, fish spawning and nursery habitats in the Irish Sea for species of commercial importance to other states as well as the behaviour of migratory fish species designated as Annex II species.
- 46 During construction, the probability of impacts arising from underwater noise is high; modelling of the subsea noise generated by construction activities (piling) is not yet available but will be completed in order to support the EIA. The extent of this impact could extend into other states territorial waters or EEZs as behavioural disturbance resulting from underwater noise during construction could occur over large ranges (tens of kilometres) and therefore has the potential for transboundary effects to occur.
- 47 The potential effects associated with long-term habitat loss are, by nature, spatially limited and considered unlikely to significantly affect species such that transboundary impacts will arise.
- 48 In conclusion, it is proposed that impacts on fish and shellfish ecology and their nature conservation interests, in so far as they are scoped into the main EIA process, will also be subject to transboundary assessment, and are not screened out at this time. Any potentially likely significant effects upon designated sites where fish are a qualifying feature are assessed within the HRA and RIAA.

## 5.2.5 Marine mammals

- 49 The marine mammal baseline for AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 7: Marine Mammals (application ref: 6.2.7).

- 50 There is potential for transboundary impacts upon marine mammals due to the mobile nature of marine mammal species and the proximity of AyM to the borders of surrounding states, such as the Republic of Ireland (see Table 1), which are within the marine mammal Management Units (MUs) for certain species.
- 51 Direct impacts may occur due to underwater noise generated during construction and decommissioning, in particular, during installation of the foundations (piling). Indirect impacts may cause disturbance to prey (fish) species from loss of fish spawning and nursery habitat and SSC and deposition. The O&M phase is considered less likely to result in significant transboundary impacts although the impacts associated with the operational noise of turbines and Electromagnetic Fields (EMF) are, by nature, longer term (although spatially limited) which will be reversible depending on the decommissioning strategy.
- 52 The probability of transboundary impacts to marine mammals occurring during construction, particularly resulting from underwater noise from piling, is potentially high and is subject to modelling and assessment in the EIA. Behavioural disturbance resulting from underwater noise during construction could occur over large ranges (tens of kilometres) and therefore has the potential for transboundary effects to occur where subsea noise arising could extend into waters of other states. These effects are predicted to be short term and intermittent, with recovery of marine mammal populations to affect areas following completion of all piling activities.
- 53 In conclusion, impacts on marine mammals and their nature conservation interests, will be subject to transboundary assessment and are scoped into the EIA process. Likely significant effects upon European sites where marine mammals are qualifying features are assessed within the HRA and RIAA.
- 54 Any transboundary impacts that do occur as a result of AyM are predicted to be short-term and intermittent, with the recovery of marine mammal populations to affected areas following the completion of construction activities.

### 5.2.6 Offshore ornithology

- 55 The offshore ornithology baseline for the AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 4: Offshore Ornithology (application ref: 6.2.4).
- 56 There is the potential for transboundary impacts on offshore ornithological receptors (up to the mean high water springs (MHWS) mark) due to the wide foraging and migratory ranges of typical bird species considered as part of the AyM baseline. In addition, there are a number of bird species that are likely to be present in the AyM array area and offshore ECC (as identified in Volume 2, Chapter 4) including those that are listed as qualifying features of European sites in other states.

- 57 The main direct impacts for ornithological receptors are likely to arise during the O&M phase as a result of potential collisions with rotating turbine blades which may result in direct mortality of individuals and barrier effects caused by the physical presence of structures which may prevent clear transit of birds between foraging and breeding sites or on migration. Indirect impacts may cause disturbance to prey (fish) species from important bird feeding areas or changes to prey availability due to changes to physical processes and habitat as a result of the presence of infrastructure during O&M.
- 58 It is likely that there will be impacts to ornithological receptors occurring during O&M particularly as a result of displacement and collision risk. Unlike the majority of impacts during construction and decommissioning, which are considered likely to be short term and temporary, impacts during O&M are likely to be long term, continuous and varying spatial extent depending on the species, although it is likely that they will be reversible following the decommissioning of AyM.
- 59 Therefore, transboundary impacts on ornithological receptors and their nature conservation interests are screened into the transboundary assessment. Full consideration of connectivity of designated sites (SPAs and Ramsar sites) is provided in a separate HRA Screening Report which will cover in more detail matters associated with designations and will include a quantitative/qualitative assessment depending on the level of data available at the time. As the spatial scale of assessment would be increased, the inclusion of non-UK seabird populations for a transboundary assessment would also increase the reference population size. Likely significant effects upon European sites where ornithological receptors are qualifying features are also assessed within the HRA and RIAA.

Table 2 - Offshore transboundary screening matrix for AyM - physical and biological environment.

Screening criteria	Physical processes	Marine Water and Sediment Quality	Benthic and subtidal intertidal ecology	Fish and shellfish ecology	Marine mammals	Offshore ornithology
Characteristics of development	<p><b>Offshore:</b>                      The proposed development is an offshore generating station (wind farm) comprising up to 50 WTGs. A range of WTG models will be considered; however, it is anticipated that each turbine will have a maximum rotor diameter of 306 m and a maximum blade tip height of 332 m above MHWS at the highest point of the structure). The minimum distance between the bottom of the blade and the water surface will be 22 m from MHWS.                      Foundation design has yet to be finalised with a final decision depending on final site investigation and procurement negotiations. The options currently under consideration include: monopiles, suction bucket monopiles, gravity base monopile, pin piled jacket, suction bucket and gravity base jacket foundations. With scour protection including rock or gravel placement, concrete mattresses, flow energy dissipation devices, protective aprons or coverings or bagged solutions.                      Up to two offshore platforms will be installed which may be installed on monopiles, suction bucket monopiles, gravity base monopiles, pin piled jacket foundations or suction bucket jacket foundations. The exact number of platforms to be installed is yet to be determined.                      Subsea array cables, offshore interconnector cables and subsea export cables will be installed to connect the turbines to the substations and to connect the substations to the onshore transition joint bays at landfall. Cable protection will also be installed (type not currently specified).                      The project description for offshore aspects is detailed in Volume 2, Chapter 1: Offshore Project Description (application ref: 6.2.1).</p> <p><b>Onshore:</b>                      Export cables will connect the offshore cables to the onshore substation located at Bodelwyddan.                      The project description for onshore aspects is detailed in Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1).</p>					
Geographical Area and Location (including existing use)	<p>The AyM array area is located approximately 10.6 km from the north east coast of Wales and 94.5 km from the Republic of Ireland EEZ with a maximum total area of 78 km<sup>2</sup>.                      AyM is a sister project to the operational GyM.</p>					
Cumulative impacts	<p>Cumulative effects are being considered in full in the context of the EIA. Following Scoping, the Applicant submitted a method statement for the Cumulative Effects Assessment which outlined the topic-specific screening criteria to be applied in addition</p>					

Screening criteria	Physical processes	Marine Water and Sediment Quality	Benthic and subtidal intertidal ecology	Fish and shellfish ecology	Marine mammals	Offshore ornithology
	to a long-list of projects to be considered. Consultation is ongoing via the Evidence Plan Expert Topic Groups to seek agreement on the scope of the Cumulative Effects Assessment.					
Carrier	See Section 5.1.1	See Chapter 5.1.2	See Chapter 5.2.3	See Section 5.2.4	See Section 5.2.448	See Section 5.2.3
Environmental importance	No significant transboundary impacts are predicted.	No significant transboundary impacts are predicted.	No significant transboundary impacts are predicted.	Transboundary assessment undertaken.	Transboundary assessment undertaken.	Transboundary assessment undertaken.
Extent						
Magnitude						
Probability						
Duration						
Frequency						
Reversibility						

## 5.3 Offshore environment – human environment

60 AyM has completed a transboundary screening matrix for offshore transboundary effects for the human environment, in line with the suggested format set out in Annex 1 of PINS Advice Note 12. This screening is set out in Table 3 below.

61 The conclusions of the transboundary screening for each offshore human environment topic are presented, together with additional justification, in the following sections.

### 5.3.7 Commercial fisheries

62 The commercial fisheries baseline for the AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 8: Commercial Fisheries (application ref: 6.2.8).

63 AyM is located within the southern portion of the International Council for the Exploration of the Sea (ICES) Division 7a, statistical area 26, which is fully within the UK EEZ. Due to the highly mobile nature of both commercial fish species and fishing fleets, and the proximity of AyM to the Isle of Man territorial waters, there is the potential for transboundary effects on international fishing fleets.

64 Therefore, it is possible for impacts related to commercial fisheries to traverse international boundaries and therefore transboundary effects are screened in for the commercial fisheries assessment.

65 The Isle of Man, the Republic of Ireland, and transboundary commercial fisheries interests is the focus of the assessment.

### 5.3.8 Shipping and navigation

66 The shipping and navigation baseline for the AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 9: Shipping and Navigation (application ref: 6.2.9).

67 The Navigational Risk Assessment (NRA) undertaken as part of the EIA considered transboundary offshore wind developments with regards to vessel routing and international ports. The scoping report looked at the standard 10 nm buffer ZoI as this is large enough to encompass vessel routing which may be impacting while remaining site specific. Given the location of the AyM array area, any transboundary effects are likely to be limited to the UK EEZ, with no meaningful pathway for effect outside the UK EEZ.

68 Therefore, it is considered that all impacts related to shipping and navigation will be limited to within the UK EEZ and thus transboundary impacts are screened out from further consideration within the EIA, subject to the NRA.

### 5.3.9 Military and civil aviation

- 69 The military and civil aviation baseline for the AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 13: Military and Civil Aviation (application ref: 6.2.13).
- 70 The AyM array area and offshore ECC are completely within UK airspace and due to the localised nature of any potential impacts, it is unlikely that any transboundary impacts would occur as impacts are limited entirely to within the UK EEZ with no meaningful pathway for effect outside the UK EEZ.
- 71 On this basis, impacts related to military and civil aviation will be limited to within the UK EEZ and thus transboundary impacts on military and civil aviation are screened out from further consideration.

### 5.3.10 Seascape, Landscape and Visual Impact Assessment

- 72 The seascape, landscape and visual impact assessment baseline for the AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 10: SLVIA (application ref: 6.2.10).
- 73 A 50 km radius was selected for the seascape, landscape and visual impact assessment (SLVIA) based on the theoretical visible distance of the WTGs and therefore doesn't include the land or water of any other state or territory beyond the UK EEZ and effects are limited entirely to within the UK EEZ, with no meaningful pathway for effect outside the UK EEZ.
- 74 Based on the above, there are no potential transboundary impacts on seascape, landscape or visual receptors anticipated and transboundary impacts are screened out from further consideration.

### 5.3.11 Offshore archaeology

- 75 The marine archaeology baseline for AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 11: Offshore Archaeology and Cultural Heritage (application ref: 6.2.11).
- 76 The closest territorial waters is the Isle of Man which is, located over 50 km away, and due to the localised nature of any potential impacts on marine archaeological receptors, transboundary impacts are unlikely to occur on any other state.
- 77 Therefore, it is considered that all impacts related to marine archaeology will be limited entirely to within the UK EEZ with no meaningful pathway for effect within other relevant states and thus transboundary impacts on marine archaeology are screened out from further consideration within the EIA.

### 5.3.12 Other marine users and activities

- 78 The other marine users and activities baseline for AyM array area and offshore ECC are outlined in full in Volume 2, Chapter 12: Other Marine Users and Activities (application ref: 6.2.12).
- 79 The potential impacts on other marine users and activities are predicted to be localised and limited to entirely within the UK EEZ with no meaningful pathway for effect outside the UK EEZ.
- 80 Therefore, transboundary effects on other marine users and activities are screened out from further consideration within the EIA.

Table 3 – Offshore transboundary screening matrix for AyM – human environment.

Screening criteria	Commercial fisheries	Shipping and navigation	Military and civil aviation	Seascape, landscape and visual impacts	Offshore archaeology	Other marine users
Characteristics of development	See Table 2 for details.					
Geographical area and location (including existing use)						
Cumulative impacts	Cumulative effects are being considered in full in the context of the EIA. Following Scoping, the Applicant submitted a method statement for the Cumulative Effects Assessment which outlined the topic-specific screening criteria to be applied in addition to a long-list of projects to be considered. Consultation is ongoing via the Evidence Plan Expert Topic Groups to seek agreement on the scope of the Cumulative Effects Assessment.					
Carrier	See Section 5.3.7 Transboundary Assessment has been undertaken	No significant transboundary impacts are predicted.				
Environmental importance						
Extent						
Magnitude						
Probability						
Duration						
Frequency						
Reversibility						

## 5.4 Onshore environment

- 81 AyM has completed a transboundary screening matrix for onshore transboundary effects, in line with the suggested format set out in Annex 1 of PINS Advice Note 12. This screening matrix is presented in Table 4 below.
- 82 The conclusions of the transboundary screening for each of the onshore topics is presented together with additional detail in the following sections.

### 5.4.13 Terrestrial ecology and nature conservation

- 83 The onshore biodiversity and nature conservation baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.3.5).
- 84 Effects on terrestrial ecology and nature conservation receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.
- 85 On this basis, transboundary impacts on terrestrial ecology and nature conservation are screened out from further considered within the EIA.

### 5.4.14 Onshore archaeology and cultural heritage

- 86 The archaeology and cultural heritage baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8).
- 87 Effects on onshore archaeology and cultural heritage receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.
- 88 On this basis, transboundary impacts on archaeology and cultural heritage are screened out from further consideration within the EIA.

#### 5.4.15 Airborne noise and vibration

- 89 The airborne noise and vibration baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 10: Noise and Vibration (application ref: 6.3.10).
- 90 Effects on airborne noise and vibration receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.
- 91 Therefore, transboundary impacts are screened out from further consideration within the EIA.

#### 5.4.16 Traffic and transport

- 92 The traffic and transport baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 9: Traffic and Transport (application ref: 6.3.9).
- 93 Transboundary impacts are not relevant to traffic and transport for the onshore elements of AyM as traffic and transport effects arising as a result of the proposed development will be localised and would not be experienced across international boundaries.
- 94 Therefore, transboundary impacts are screened out from further consideration within the EIA.

#### 5.4.17 Air quality

- 95 The air quality baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 11: Air Quality (application ref: 6.3.11).
- 96 Effects on air quality receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.
- 97 Therefore, transboundary impacts from air quality are screened out from further consideration within the EIA.

#### 5.4.18 Hydrology, hydrogeology and flood risk

- 98 The hydrology, hydrogeology and flood risk baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 7: Hydrology and Flood risk (application ref: 6.3.7).
- 99 Effects on hydrology, hydrogeology and flood risk receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.
- 100 Therefore, impacts with respect to hydrology, hydrogeology and flood risk are screened out from consideration within the EIA.

#### 5.4.19 Geology and ground conditions

- 101 The geology and ground conditions for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6).
- 102 Effects on geology and ground conditions receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.
- 103 Therefore, transboundary impacts relating to geology and ground conditions are screened out from further consideration with the EIA.

#### 5.4.20 Landscape and visual impact assessment

- 104 The landscape and visual baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 2: LVIA (application ref: 6.3.2).
- 105 Effects on landscape and visual impact assessment receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.

106 Therefore, transboundary impacts are screened out from further consideration within the EIA.

#### 5.4.21 Socioeconomics and tourism

107 The socioeconomic and tourism baseline for the AyM array area and offshore ECC is outlined in full in Volume 3, Chapter 3: Socioeconomics (application ref: 6.3.3).

108 Effects on socioeconomic and tourism receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.

109 Therefore, transboundary impacts are screened out from further from consideration within the EIA.

#### 5.4.22 Public health

110 The tourism and recreation baseline for the AyM array area and offshore ECC are outlined in full in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4).

111 Effects on public health receptors arising from the construction, O&M and decommissioning of AyM will primarily be confined to a localised area within, or in close proximity to, the footprint of the onshore elements of AyM (and localised in the area of the UK and would not be experienced across international boundaries). Therefore, there is no pathway by which direct or indirect effects would significantly affect onshore receptors of another state.

112 Therefore, transboundary impacts are screened out from further from consideration within the EIA.

Table 4 - Onshore transboundary screening matrix for AyM.

Screening criteria	Terrestrial ecology and nature conservation	Archaeology and cultural heritage	Airborne noise and vibration	Traffic and transport	Air quality	Hydrology, hydrogeology and flood risk	Geology and ground conditions	Landscape and visual	Socio-economics and tourism	Public health
Characteristics of development	The offshore cables will be brought ashore and connected to the onshore cables in a transition joint bay on the landward side of the landfall site. From there, the onshore cables will be placed in trenches to transfer the power generated across Wales to the onshore substation at Bodelwyddan. The onshore substation will include a 400 kV connection to the National Grid substation. The onshore infrastructure is described in full in Volume 3, Chapter 1.									
Geographical area and location (including existing use)	The offshore export cable will make landfall on the north east coast of Wales with the onshore cable route extending to the substation located at Bodelwyddan.									
Cumulative impacts	Cumulative effects are being considered in full in the context of the EIA. Following Scoping, the Applicant submitted a method statement for the Cumulative Effects Assessment which outlined the topic-specific screening criteria to be applied in addition to a long-list of projects to be considered. Consultation is ongoing via the Evidence Plan Expert Topic Groups to seek agreement on the scope of the Cumulative Effects Assessment.									
Carrier	No significant transboundary impacts are predicted.									
Environmental importance										
Extent										
Magnitude										
Probability										
Duration										
Frequency										
Reversibility										

## 6 Conclusions

- 113 This transboundary screening document has been prepared in accordance with PINS Advice Note 12. The primary purpose of this note is to provide information to inform a screening assessment of the potential transboundary impacts which have the potential to affect the receiving environment, or other interests, of other states.
- 114 Transboundary effects have generally been screened out except in relation to selected offshore topics where, based on the current information available, the potential for significant effects outside the UK EEZ cannot be ruled out at this stage. The topics for which a transboundary impact assessment is screened in are:
- Physical processes;
  - Fish and shellfish;
  - Marine mammals;
  - Offshore ornithology; and
  - Commercial fisheries.
- 115 The likely significance of transboundary effects in relation to these topics are reported in the relevant topic specific chapters of the ES.

## 7 References

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# GOBe

Suites B2 & C2  
Higher Mill  
Higher Mill Lane  
Buckfastleigh  
Devon  
TQ11 0EN

[www.gobeconsultants.com](http://www.gobeconsultants.com)