

Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 1, Annex 4.1: SSA Identification of Area of Search Report

Date: April 2022

Revision: B

Application Reference: 6.1.4.1

Pursuant to: APFP Regulation 5(2)(a)



REVISION	DATE	STATUS/ REASON FOR ISSUE	AUTHOR:	CHECKED BY:	APPROVED BY:
A	August 2021	PEIR	GoBe	RWE	RWE
B	March 2022	ES	GoBe	RWE	RWE

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

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

Contents

1.1	Purpose of this note	5
1.2	Cable Route Protocol	5
1.2.1	Principle 3.....	6
1.2.2	Requirement 9.....	6
1.2.3	Requirement 10.....	7
1.3	Engineering assumptions	8
1.3.1	Offshore Cable protection.....	9
1.4	Offshore Export Cable – Area of Search (AoS)	10
1.4.1	Identification of the Offshore Cable Corridor AoS	13
1.5	Cable Landfall – AoS.....	14
1.5.1	Identification of the Cable Landfall AoS.....	17
1.6	Onshore Cable Corridor AoS	17
1.6.1	Identification of the Onshore Cable Corridor AoS	19
1.7	Onshore Project Substation	20
1.7.1	Identification of the Onshore Project Substation AoS	22
1.8	Summary	23

Figures

Figure 1 – AyM Overall Area of Search

Figure 2 – AyM Offshore Export Cables AoS

Figure 3 – Landfall AoS

Figure 4 – Onshore Cable Corridor AoS

Figure 5 – Onshore Substation AoS

Glossary

TERM	DEFINITION
AfL	Area for Lease
AONB	Area of Outstanding Natural Beauty
AoS	Area of Search
CIAL	Corridor Identification and Approval for Linear Activities
CRP	Cable Route Protocol
EIA	Environmental Impact Assessment
LNR	Local Nature Reserve
MCZ	Marine Conservation Zone
NNR	National Nature Reserve
PEIR	Preliminary Environmental Information Report
RIGS	Regionally Important Geological and Geomorphological Sites
SAC	Special Areas of Conservation
SPA	Special Protected Area
SNCB	Statutory Nature Conservation Body
SSSI	Site of Special Scientific Interest

Introduction

1.1 Purpose of this note

- 1 *This note summarises the work undertaken to identify the Areas of Search (AoS) for the following elements of the Awel y Môr Offshore Windfarm Extension:*
 - ▲ Offshore export cable route;
 - ▲ Cable Landfall;
 - ▲ Onshore cable route; and
 - ▲ Onshore project substation.
- 2 *Each infrastructure element is presented in turn in the following sections, with a summary of the data sets used and how each AoS was defined. The overall AoS is shown in Figure 1.*
- 3 *In addition, this note also outlines how the site selection activities to date in relation to the AoS comply with the relevant requirements and principles within the Cable Route Protocol (CRP).*

1.2 Cable Route Protocol

- 4 *The Cable Route Protocol (CRP) is a document prepared by The Crown Estate (2019)¹ and comprises a set of requirements for offshore wind developers which are designed to manage the offshore export cable planning process with the aim of avoiding adverse effects on the integrity of Habitats Regulations sites. The CRP must be followed by developers as they progress project planning and they will be required to demonstrate compliance with the CRP as part of the transmission assets Agreement for Lease (AfL) application.*
- 5 *The CRP (2019) comprises a set of Requirements (compliance required as part of AfL application) and Principles (best practice guidance) for offshore wind developers in the planning of offshore export cable routes. Offshore wind export cabling has the potential to cause impacts in marine and coastal environments, and therefore the CRP provides these Requirements and Principles on the way in which cable route planning should be undertaken by developers to ensure good management of land and seabed, and to minimise environmental impacts.*
- 6 *This note is intended to provide the information outlined within the CRP where it is of particular relevance to the identification of the AoS and seeks comments*

¹The Crown Estate, 2019, 'Cable Route Protocol – 2017 Offshore Wind Extensions Plan'

as requested from stakeholders. An outline of the relevant Requirements and Principles within the CRP, in relation to the AoS, are outlined in the following sections.

1.2.1 Principle 3

- 7 As stated above, the Principles in the CRP provide best practice guidance on the way in which cable route planning should be undertaken by developers to ensure good management of land and seabed, and to minimise environmental impacts.
- 8 Principle 3 of the CRP is particularly relevant to this AoS note and mentions how the CRP can be applied to marine and terrestrial environments. Principle 3 in the CRP states “The Cable Route Protocol applies specifically to Habitats Regulations Sites. However, as a matter of best practice the approach set out in the CRP may also be applied to other protected sites (both marine and terrestrial) and known sensitive habitats, and this is strongly encouraged. This includes (inter alia) MCZs and SSSIs.”
- 9 In response to this Requirement, this note includes constraints mapping (within Sections 1.4 to 1.7) specifically in relation to Habitats Regulations sites as well as other protected marine and terrestrial protected sites.

1.2.2 Requirement 9

- 10 As stated above, compliance with the Requirements in the CRP is required as part of the AfL application.
- 11 Requirement 9 of the CRP is particularly relevant to the AoS and states “Within the offshore AoS the developer must identify (and map where possible) the following, which are to be given significant weight in cable route planning:
- ▲ Habitats Regulations sites (SACs, SPAs and Ramsar sites, whether fully designated or not);
 - ▲ Features of the Habitats Regulations sites (including priority habitats and species);
 - ▲ Habitats Regulations sites with conservation objectives to recover features to favourable condition;
 - ▲ Areas of known Annex I habitat outside protected areas but within the AoS; and
 - ▲ Habitats that are known to be irreplaceable or very difficult to replace (e.g. chalk reef).

- 12 *Having undertaken this exercise the developer must consult with statutory nature conservation bodies (SNCBs) (and where considered appropriate other relevant non-statutory consultees) to ensure that the best available evidence about the environment and specific sensitivities has been incorporated into the AoS mapping, and that the consultees have the opportunity to provide additional narrative information about particularly sensitive areas or areas of concern to them. Evidence of providing SNCBs with the opportunity to engage must be provided in the Corridor Identification and Approval for Linear Activities (CIAL)."*
- 13 *In response to this Requirement, the offshore AoS (Section 1.3) has identified and mapped those sites listed above and features of the Habitats Regulations sites and species are outlined in Appendix 1.*

1.2.3 Requirement 10

- 14 *Requirement 10 states "Developers must prepare an outline view of the possible cabling infrastructure requirements (acknowledging that this may change as the design of the project evolves). The outline should include the potential number and capacities of the export cables with their indicative spacing requirements and the additional structures (e.g. substations and converter stations) which the project is likely to require. Where there are uncertainties in the required infrastructure these should be set out (with reasons).*
- 15 *Within the AoS, developers must identify (and where possible, map) hard engineering constraints such as existing infrastructure/licence areas, challenging ground conditions and sections of the coast where landfall is not possible. Developers should also form an initial view on the likely areas within the AoS where cable preparation works and/or cable protection may be needed (noting that this information is likely to change as survey work is undertaken). Where possible, this information should be presented alongside the environmental information from Requirement 9.*
- 16 *The developer must consult with SNCBs (and where considered appropriate, non-statutory consultees) to seek to ensure that they understand the likely infrastructure requirements and constraints, and that they have the opportunity to raise any areas of concern about placement of infrastructure (including cable protection) and specific protected sites/features. Evidence of this consultation (and the way in which SNCB concerns have been addressed) must be provided in the CIAL."*

17 In response to this Requirement, the Awel y Môr cabling infrastructure requirements were developed to aid in the site selection process and identification of the AoS and are outlined in Section 1.3 below. Hard engineering constraints such as existing infrastructure areas have been mapped (see Sections 1.4 to 1.7) and the current position on the cable protection that is likely to be required has been outlined in Section 1.3.

Cabling infrastructure requirements

1.3 Engineering assumptions

18 In response to Requirement 10, an outline view of the possible cabling infrastructure requirements known at this stage, are provided in Table 1. It is important to note that these assumptions and principles may be further refined as more information is obtained about the scale of the proposed development and the constraints present.

TABLE 1 CABLING INFRASTRUCTURE REQUIREMENTS (INCLUDING ADDITIONAL STRUCTURES)

Parameters	Up to	Notes
Offshore substation (OSP)		
Maximum number of OSPs	2	Located within the offshore array area
Foundation Options	Monopile, Suction bucket monopile, Gravity base, Pin-piled jacket foundations, Suction bucket jacket foundation	A range of foundation types will be considered and presented within the Scoping Report (and EIA) for the OSPs.
Maximum topside height (m) (including crane)	+ 115m above LAT	
Maximum topside width and length (m)	50 x 80	
Offshore export cable		
Number of circuits	2	
Number of export cables per circuit	1	Assumes a 3 core subsea cable will be used
Working width required for offshore export cable lay (m)	2000	
Cable spacing (m)		50m minimum

Parameters	Up to	Notes
Landfall		
Number of HDD drills	3	
Number of transition bays	2	One per circuit
Transition bay dimensions (m) during construction	50 x 30	
Onshore cable corridor		
Number of circuits	2	
Cable corridor construction swathe (m)	40	40m for dual circuit
No. onshore transmission cables per circuit	3	3 power cables per circuit
No. of cable corridor construction compounds	~5	Depends upon final length of cable corridor
Cable corridor construction compound dimensions (m)	100 x 100	
Cable spacing (m)		10m minimum spacing between trenches
Onshore Project Substation		
Construction compound dimensions (m)	250 x 150	
Operational compound dimensions (length m)	250 x 200	Dimensions are for the permanently fenced area

19 It is anticipated that National Grid will be required to undertake an extension to the existing NGET GIS building and substation boundary at the existing Bodelwyddan 400kV substation in order to accommodate the Awel y Môr connection and reconfigure the existing 400kV overhead line circuits. If these alterations or extensions require planning consent, then this could be obtained by National Grid under a separate application.

1.3.1 Offshore Cable protection

20 As far as practicable, all offshore cables will be buried. Where it is not reasonably practicable to bury cables (inter-array and export) it may be necessary to install cable protection to prevent scour and minimise the risk of damage to the cable. Full details of each the areas, volumes and assumptions for the requirement for cable protection (for both export and inter-array

cables) will be included in the Project Description within the Preliminary Environmental Information Report (PEIR) and discussed with stakeholders through the Environmental Impact Assessment (EIA) Evidence Plan Process. The PEIR assessment will consider the use of cable protection to be laid anywhere within the offshore Red Line Boundary (as defined in the PEIR), i.e. within the array and export cable corridor.

- 21 An analysis of the requirement for the offshore cables to cross existing infrastructure (such as cables and pipelines) will be provided within the PEIR along with realistic worst-case design parameters to enable a detailed assessment to be undertaken.

Area of Search

- 22 The following sections summarise the work undertaken to identify the AoS for the following elements of the Awel y Môr Offshore Windfarm Extension:

- ▲ Offshore export cable route;
- ▲ Cable Landfall;
- ▲ Onshore cable route; and
- ▲ Onshore Project Substation.

- 23 Each infrastructure element is presented in turn in the following sections, with a summary of the data sets used and how each AoS was defined. The overall AoS is shown in Figure 2.

- 24 The CRP identifies that the process of cable route planning begins with an understanding of the onshore connection point, and for the Awel y Môr Offshore Windfarm Extension project, this is Bodelwyddan and then considering a broad AoS for the possible onshore and offshore cable corridors from this point.

1.4 Offshore Export Cable – Area of Search (AoS)

- 25 The following datasets (Table 2) have been considered in the initial identification of the AoS. However as the site selection for the Awel y Môr Offshore Windfarm Extension develops further datasets will be identified, and studies undertaken in consultation with relevant stakeholders, and will be considered as part of ongoing site selection and assessment of alternatives process.

TABLE 2 DATA SETS FOR OFFSHORE EXPORT CABLE AOS

Data	Source	
Offshore Oil and Gas Wells, Surface and Subsurface Infrastructure	Oil and Gas Authority (2020)	https://data-ogauthority.opendata.arcgis.com/datasets/oga-offshore-zipped-shapefiles-wgs84
Offshore Oil and Gas Pipelines inc. 250m Buffer of Pipelines	Oil and Gas Authority (2019)	https://data-ogauthority.opendata.arcgis.com/datasets/pipelines-wgs84
Offshore Gas Storage Lease Areas	The Crown Estate (2019)	https://opendata-thecrownestate.opendata.arcgis.com/datasets/b01d96e60991444b9199074af2b1cad0_0
Offshore Tidal Stream Lease Areas	The Crown Estate (2019)	https://opendata-thecrownestate.opendata.arcgis.com/datasets/a722b677a6754187bd018ca1292af568_0
Existing Offshore Wind Farm Lease Areas, Cable Corridors and Export Cables inc. 250m Buffer of as built offshore wind farm cables within the vicinity	The Crown Estate (2020)	https://opendata-thecrownestate.opendata.arcgis.com/datasets/d670e395b81147a4a24d10de74f71446_0 https://opendata-thecrownestate.opendata.arcgis.com/datasets/8f9dde0758b241399964c3178f025427_0
UKHO Charted Wrecks inc. 250m Buffer	UKHO (2020)	https://data.admiralty.co.uk/portal/apps/sites/#/marine-data-portal - live feature datasets
Protected Wrecks	Historic England (2019)	https://services.historicengland.org.uk/NMRDataDownload/Default.aspx
Marine Disposal Sites	Cefas (2020)	http://data.cefas.co.uk/#/View/407

Data	Source	
Mineral Aggregate Areas and British Marine Aggregate Producers Association (BMAPA) Dredger Transit routes	The Crown Estate (2019) and BMAPA (2019) ⁱⁱ	Aggregate areas https://opendata-thecrownestate.opendata.arcgis.com/datasets/ced5788f014546b0b571e8d29b021166_0 BMAPA dredger transit - https://www.bmapa.org/
UK Military PEXA	UKHO (2020)	https://data.admiralty.co.uk/server/rest/services/Hosted/UK_PEXA/FeatureServer
Marine Conservation Zones (MCZ)	Natural England (2019)	https://naturalengland-defra.opendata.arcgis.com/datasets/marine-conservation-zones-england?geometry=-14.716%2C52.003%2C6.191%2C54.308
Special Protection Areas (SPA)	JNCC (2019)	http://archive.jncc.gov.uk/ProtectedSites/SACselection/gis_data/terms_conditions.asp
Special Areas of Conservations (SAC)	JNCC (2019)	http://archive.jncc.gov.uk/ProtectedSites/SACselection/gis_data/terms_conditions.asp
Annex 1 Reef Habitats	JNCC (2019)	https://data.gov.uk/dataset/3e72b108-0114-480f-80c7-dd76fa392fb9/annex-i-reefs-in-uk-offshore-waters-public
Annex 1 Sandbank Habitats	JNCC (2019)	https://data.gov.uk/dataset/d19f631c-27c0-4c74-804f-d76a4632b702/annex-i-sandbanks-in-the-uk-v2-public
Shellfish Waters	Cefas (2012)	https://magic.defra.gov.uk/Datasets/Dataset_Download_ShellfishWales.htm

ⁱⁱ Downloaded on 09/10/2019 BMAPA data is from 2009.

Data	Source	
IMO Shipping Routes	UKHO (2020)	https://data.admiralty.co.uk/server/rest/services/Hosted/Ships_Routeing_Measures/FeatureServer
Other Offshore Cables (Marine Themes dataset only received after undertaking the AoS exercise and were not included in the mapping but will be taken into account during the identification of the long-list of options).	Marine Themes (2019)	Licenced dataset

26 Appendix 1 outlines, where relevant to the offshore AoS, the following sites and habitats which are specified under Requirement 9 of the CRP.

1.4.1 Identification of the Offshore Cable Corridor AoS

27 The key driver for the identification of the offshore cable corridor AoS (Figure 3) is the location of the Awel y Môr Extension AfL area awarded by the Crown Estate (located to the West of the current operating offshore windfarm) and the positioning of the key ecological designations present along the coastline to the south of this area, which are:

- ▲ Dee Estuary SAC and SPA;
- ▲ Liverpool Bay/ Bae Lerpwl SPA;
- ▲ Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC;
- ▲ Anglesey Terns / Morwenoliaid Ynys Môn SPA; and
- ▲ Traeth Lafan/ Lavan Sands, Conwy Bay SPA

28 Overall, the intention has been to keep the offshore cable corridor as short as possible to minimise overall potential impacts and also to avoid the current operating windfarms (Gwynt y Môr, North Hoyle and Rhyl Flats), an Aggregate Production Area and a closed disposal site. This therefore created an AoS from the southern extent of the Awel y Môr Extension AfL, to the Welsh coastline, specifically avoiding the ecological designations listed above, with the exception of the Liverpool Bay SPA, which covers a large extent to the south east of the AfL. Due to the proximity of other operational windfarms in the area, the presence of other infrastructure (such as cable corridors) are therefore unavoidably located with the defined AoS. The offshore export cables will be located within the Offshore Cable Corridor AoS.

1.5 Cable Landfall – AoS

29 The following datasets (Table 3) have been considered in the initial identification of the AoS. However as the site selection for the Awel y Môr Offshore Windfarm Extension develops further datasets will be identified, and studies undertaken in consultation with relevant stakeholders, and will be considered as part of ongoing site selection and assessment of alternatives process.

TABLE 3 DATA SET USED FOR CABLE LANDFALL AOS

Data	Source	
Existing Offshore Wind Farm Cable Corridors and Export Cables inc. 250m Buffer of as built offshore wind farm cables within the vicinity	The Crown Estate (2020)	https://opendata-thecrownestate.opendata.arcgis.com/datasets/d670e395b81147a4a24d10de74f71446_0 https://opendata-thecrownestate.opendata.arcgis.com/datasets/8f9dde0758b241399964c3178f025427_0
UKHO Charted Wrecks inc. 250m Buffer	UKHO (2020)	https://data.admiralty.co.uk/portal/apps/sites/#/marine-data-portal-live-feature-datasets
Annex 1 Reef Habitats	JNCC (2019)	https://data.gov.uk/dataset/3e72b108-0114-480f-80c7-dd76fa392fb9/annex-i-reefs-in-uk-offshore-waters-public
Annex 1 Sandbank Habitats	JNCC (2019)	https://data.gov.uk/dataset/d19f631c-27c0-4c74-804f-d76a4632b702/annex-i-sandbanks-in-the-uk-v2-public
Shellfish Waters	Cefas (2012)	https://magic.defra.gov.uk/Datasets/Dataset_Download_ShellfishWales.htm
Other Offshore Cables	Marine Themes (2019)	Licenced dataset
SPAs	JNCC (2019)	http://archive.jncc.gov.uk/ProtectedSites/SACselection/gis_data/terms_conditions.asp

Data	Source	
SACs	JNCC (2019)	http://archive.jncc.gov.uk/ProtectedSites/SACselection/gis_data/terms_conditions.asp
Ramsar Sites	JNCC (2018)	http://archive.jncc.gov.uk/ProtectedSites/SACselection/gis_data/terms_conditions.asp
Sites of Special Scientific Interests (SSSI)	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSites/SitesOfSpecialScientificInterest/?lang=en
Local Nature Reserves (LNR)	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/LocalNatureReserves/?lang=en
National Nature Reserves (NNR)	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSites/NationalNatureReserves/?lang=en
Areas of Outstanding Natural Beauty (AONB)	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSites/AreasOfOutstandingNaturalBeauty/?lang=en
National Parks	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/NationalParks/?lang=en
Country Parks	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSites/CountryParks/?lang=en
Ancient Woodland	Natural Resources Wales (2016)	http://lle.gov.wales/catalogue/item/AncientWoodlandInventory2011/?lang=en
RSBP Reserves	RSPB (2019)	https://opendata-rspb.opendata.arcgis.com/
Geological Conservation Review Sites	Natural Resources Wales (2019)	Request from enquiries@naturalresourceswales.gov.uk

Data	Source	
Regionally Important Geological and Geomorphological Sites (RIGS)	Natural Resources Wales (2019)	Request from enquiries@naturalresourceswales.gov.uk
Main Rivers	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/MainRivers/?lang=en
Flood Zones 2 & 3	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue?lang=en&Text=flood+zone&Page=&INSPIRE=False
Conservation Areas	Welsh Government (2019)	http://lle.gov.wales/catalogue/item/ConservationAreas/?lang=en
Listed Buildings	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/ListedBuildings/?lang=en
Scheduled Monuments	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/ScheduledAncientMonumentsInWales/?lang=en
Historic Landscape	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/LandmapHistoricLandscape/?lang=en
Historic Landfill Sites	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/HistoricLandfillSites/?lang=en
Source Protection Zones	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/SourceProtectionZonesSPZMerged/?lang=en
Heritage Coast	Natural Resources Wales (2018)	http://lle.gov.wales/catalogue/item/ProtectedSitesHeritageCoast/?lang=en
Key Settlements	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Main Roads	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html

Data	Source	
Railways	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Tourist Attractions (e.g. Golf Course, Caravan Parks)	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html

1.5.1 Identification of the Cable Landfall AoS

30 The key driver for the identification of the landfall AoS (Figure 4) was the location of the offshore export cable corridor AoS along the Welsh coastline and where this avoided the ecological designations of the Dee Estuary SAC, SPA and Ramsar to the east, and the Menai Strait and Conwy Bay SAC to the west. The Landfall AoS, (approximate length of coastline 29.3 km) was therefore positioned to avoid any direct impacts to these designations and the features protected within them. The cable landfall location will be located within the Landfall AoS.

1.6 Onshore Cable Corridor AoS

31 The following datasets (Table 4) have been considered in the initial identification of the AoS. However as the site selection for the Awel y Môr Offshore Windfarm Extension develops further datasets will be identified, and studies undertaken in consultation with relevant stakeholders, and will be considered as part of ongoing site selection and assessment of alternatives process.

TABLE 4 DATA SET USED FOR ONSHORE CABLE CORRIDOR AOS

Data	Source	
SPAs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesSpecialProtectionAreas/?lang=en
SACs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesSpecialAreasOfConservation/?lang=en
Ramsar Sites	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesRamsarWetlandsOfInternationalImportance/?lang=en

Data	Source	
SSSIs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesSitesOfSpecialScientificInterest/?lang=en
LNRs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/LocalNatureReserves/?lang=en
NNRs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesNationalNatureReserves/?lang=en
AONBs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesAreasOfOutstandingNaturalBeauty/?lang=en
National Parks	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/NationalParks/?lang=en
Country Parks	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesCountryParks/?lang=en
Ancient Woodland	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/AncientWoodlandInventory2011/?lang=en
RSPB Reserves	RSPB (2019)	https://opendata-rspb.opendata.arcgis.com/
Geological Conservation Review Sites	Natural Resources Wales (2019)	Request from enquiries@naturalresourceswales.gov.uk
RIGS	Natural Resources Wales (2019)	Request from enquiries@naturalresourceswales.gov.uk
Main Rivers	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/MainRivers/?lang=en
Flood Zones 2 & 3	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue?lang=en&Text=flood+zone&Page=&INSPIRE=False
Conservation Areas	Welsh Government (2019)	http://lle.gov.wales/catalogue/item/ConservationAreas/?lang=en
Listed Buildings	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/ListedBuildings/?lang=en

Data	Source	
Scheduled Monuments	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/ScheduledAncientMonumentsInWales/?lang=en
Historic Landscape	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/LandmapHistoricLandscape/?lang=en
Historic Landfill Sites	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/HistoricLandfillSites/?lang=en
Source Protection Zones	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/SourceProtectionZonesSPZMerged/?lang=en
Heritage Coast	Natural Resources Wales (2018)	http://lle.gov.wales/catalogue/item/ProtectedSitesHeritageCoast/?lang=en
Key Settlements	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Main Roads	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Railways	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Existing National Grid Infrastructure inc. Overhead Lines	National Grid UK (2019)	https://www.nationalgrid.com/network-and-assets/network-route-maps
Tourist Attractions (e.g. Golf Course, Caravan Parks)	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html

1.6.1 Identification of the Onshore Cable Corridor AoS

32 The key influences on the onshore cable corridor AoS (Figure 5) were the Landfall AoS along the Welsh coastline and the initial 3km AoS placed around the identified National Grid connection point of Bodelwyddan substation (see Section 1.3). A broad area of land was then identified to join these two geographical areas, which was then further refined to avoid the Bryniau Clwyd A Dyffryn Dyfrdwy /Clwydian Range and Dee Valley AONB. The onshore export cables will be located within the Onshore Cable Corridor AoS.

1.7 Onshore Project Substation

33 The following datasets (Table 5) have been considered in the initial identification of the AoS. However as the site selection for the Awel y Môr Offshore Windfarm Extension develops further datasets will be identified, and studies undertaken in consultation with relevant stakeholders, and will be considered as part of ongoing site selection and assessment of alternatives process.

TABLE 5 DATA SET USED FOR ONSHORE PROJECT SUBSTATION AOS

Data	Source	
SPAs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesSpecialProtectionAreas/?lang=en
SACs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesSpecialAreasOfConservation/?lang=en
Ramsar Sites	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesRamsarWetlandsOfInternationalImportance/?lang=en
SSSIs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesSitesOfSpecialScientificInterest/?lang=en
LNRs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/LocalNatureReserves/?lang=en
NNRs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesNationalNatureReserves/?lang=en
AONBs	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesAreasOfOutstandingNaturalBeauty/?lang=en
National Parks	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/NationalParks/?lang=en
Country Parks	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/ProtectedSitesCountryParks/?lang=en

Data	Source	
Ancient Woodland	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/AncientWoodlandInventory2011/?lang=en
RSPB Reserves	RSPB (2019)	https://opendata-rspb.opendata.arcgis.com/
Geological Conservation Review Sites	Natural Resources Wales (2019)	Request from enquiries@naturalresourceswales.gov.uk
RIGS	Natural Resources Wales (2019)	Request from enquiries@naturalresourceswales.gov.uk
Main Rivers	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/MainRivers/?lang=en
Flood Zones 2 & 3	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue?lang=en&Text=flood+zone&Page=&INSPIRE=False
Conservation Areas	Welsh Government (2019)	http://lle.gov.wales/catalogue/item/ConservationAreas/?lang=en
Listed Buildings	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/ListedBuildings/?lang=en
Scheduled Monuments	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/ScheduledAncientMonumentsInWales/?lang=en
Historic Landscape	Historic Environment Service (Cadw) (2019)	http://lle.gov.wales/catalogue/item/LandmapHistoricLandscape/?lang=en
Historic Landfill Sites	Natural Resource Wales (2019)	http://lle.gov.wales/catalogue/item/HistoricLandfillSites/?lang=en
Source Protection Zones	Natural Resources Wales (2019)	http://lle.gov.wales/catalogue/item/SourceProtectionZonesSPZMerged/?lang=en
Heritage Coast	Natural Resources Wales (2018)	http://lle.gov.wales/catalogue/item/ProtectedSitesHeritageCoast/?lang=en
Key Settlements	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html

Data	Source	
Main Roads	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Railways	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html
Existing National Grid Infrastructure inc. Overhead Lines	National Grid UK (2019)	https://www.nationalgridet.com/network-and-assets/network-route-maps
Tourist Attractions (e.g. Golf Course, Caravan Parks)	Ordnance Survey (2019)	https://www.ordnancesurvey.co.uk/opendatadownload/products.html

1.7.1 Identification of the Onshore Project Substation AoS

- 34 *The guiding principles for locating the onshore substation are to achieve an economic and efficient connection (i.e. as close as possible to the National Grid connection point) whilst taking into account environmental constraints including siting principles set out within the Horlock Rulesⁱⁱⁱ. The substation AoS (Figure 6) was therefore broadly defined as a 3km buffer around the grid connection point at Bodelwyddan National Grid substation. The Horlock Rules state “Consideration must be given to environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum...Consideration at an early point of the study should be given to placing the electrical infrastructure as close as possible to the existing National Grid connection point (if feasible) in order to minimise the landscape and visual effects associated with introducing new electricity infrastructure to the environment.”*
- 35 *This 3km buffer was subsequently refined with due consideration to the overarching guidelines outlined within the Horlock Rules to avoid existing settlements and environmental designations where possible.*
- 36 *Key areas removed from the AoS were St Asaph with its associated Conservation Area and Listed Buildings, as well as the Main River of River Elwy, its associated Flood Zones 2 and 3 to the east. The southern boundary was refined to avoid a further stretch of the River Elwy and its associated flood zones, along with the Coedwigoedd Dyffryn Elwy / Elwy Valley Woods SAC,*

ⁱⁱⁱ National Grid Company (2006), substations and the environment: Guidelines on siting and design <https://www.nationalgrid.com/sites/default/files/documents/13796-The%20Horlock%20Rules.pdf>

Coedydd Ac Ogofau Elwy A Meirchion SSSI and the Lower Elwy Valley Historic Landscape, which encompassed scattered listed buildings and Scheduled Monuments.

- 37 The boundary to the north west of the original 3km buffer was refined to avoid the area of Bodelwyddan, including the area to the north of the A55, which includes Glan Clywd Hospital, mixed residential and commercial areas and the Bodelwyddan Conservation Area. The area to the south of the A55 was also refined, which includes First World War Practice Trenches at Bodelwyddan Park Scheduled Monument, scattered listed buildings including Bodelwyddan Castle and patches of ancient woodland. The onshore substation will be located within the onshore substation AoS.

Summary

1.8 Summary

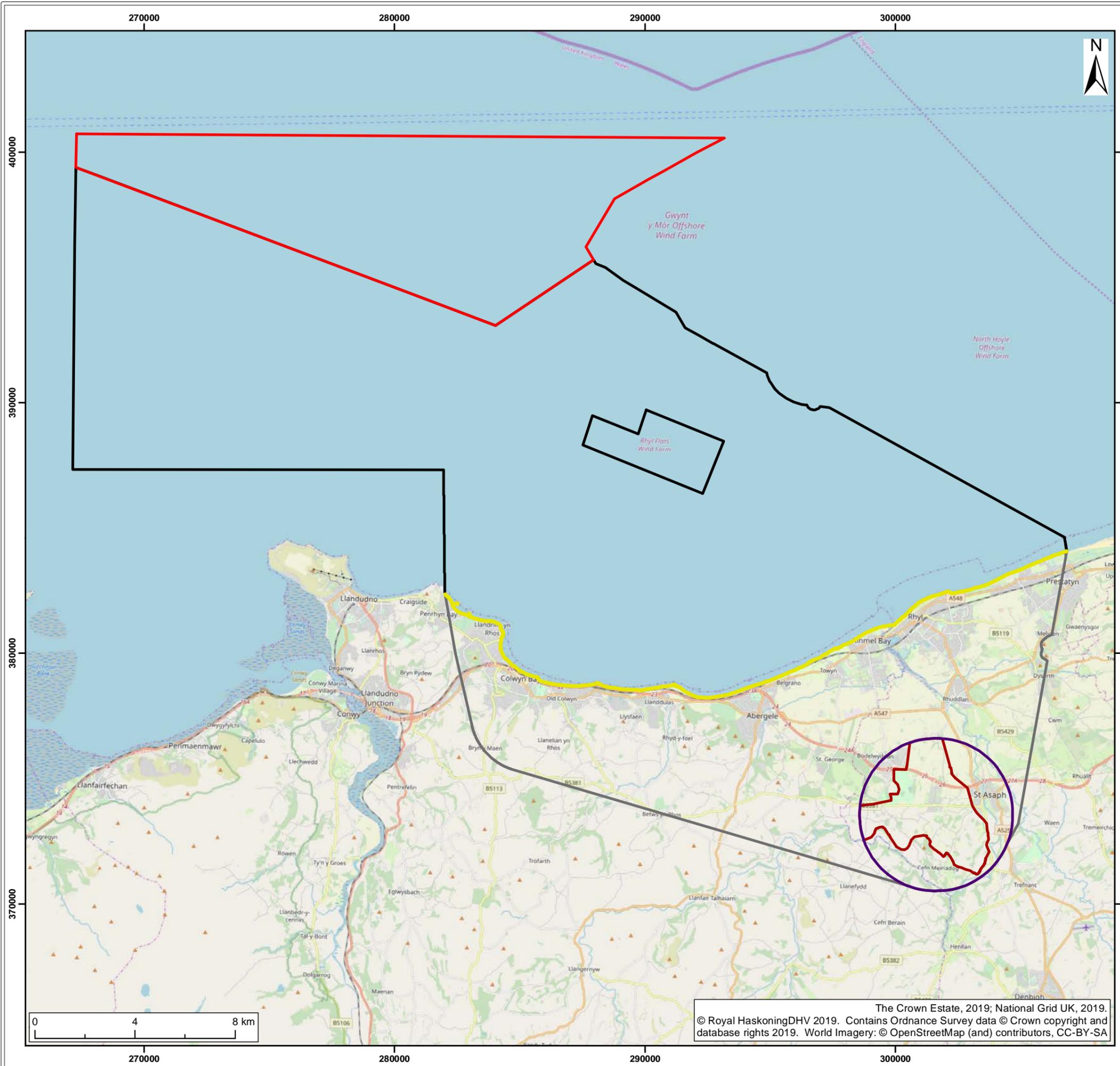
- 38 This note has summarised the work undertaken to identify the AoS for the Awel y Môr Offshore Windfarm Extension and how the site selection activities to date comply with the relevant requirements and principles within the (CRP) in relation to the AoS.
- 39 This note is intended to satisfy that exchange of information outlined within the CRP and draw comments as requested from stakeholders.



RWE Renewables UK Swindon
Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.innogy.com

Registered office:
RWE Renewables UK Swindon
Limited
Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB



- Legend:
- Awel Y Mor AfL
 - Offshore Cable Corridor Area of Search
 - Landfall Area of Search
 - Onshore Cable Corridor Area of Search
 - Onshore Substation Area of Search
 - 3km Refined Substation Search Area

A1	C01	18/12/2019	Approved and accepted as stage complete	AB	AH	RH
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Awel-Y-Mor Overall Area of Search

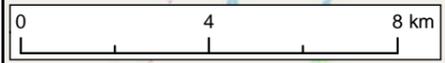
Figure: 1 Drawing No: PB9596-RHD-ZZ-ZZ-DR-YE-0001

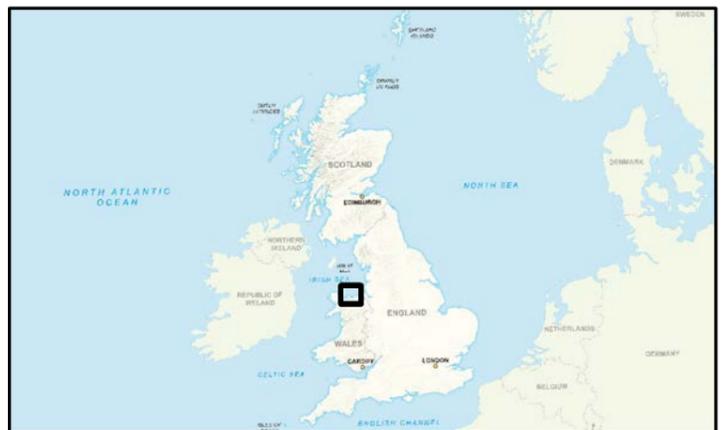
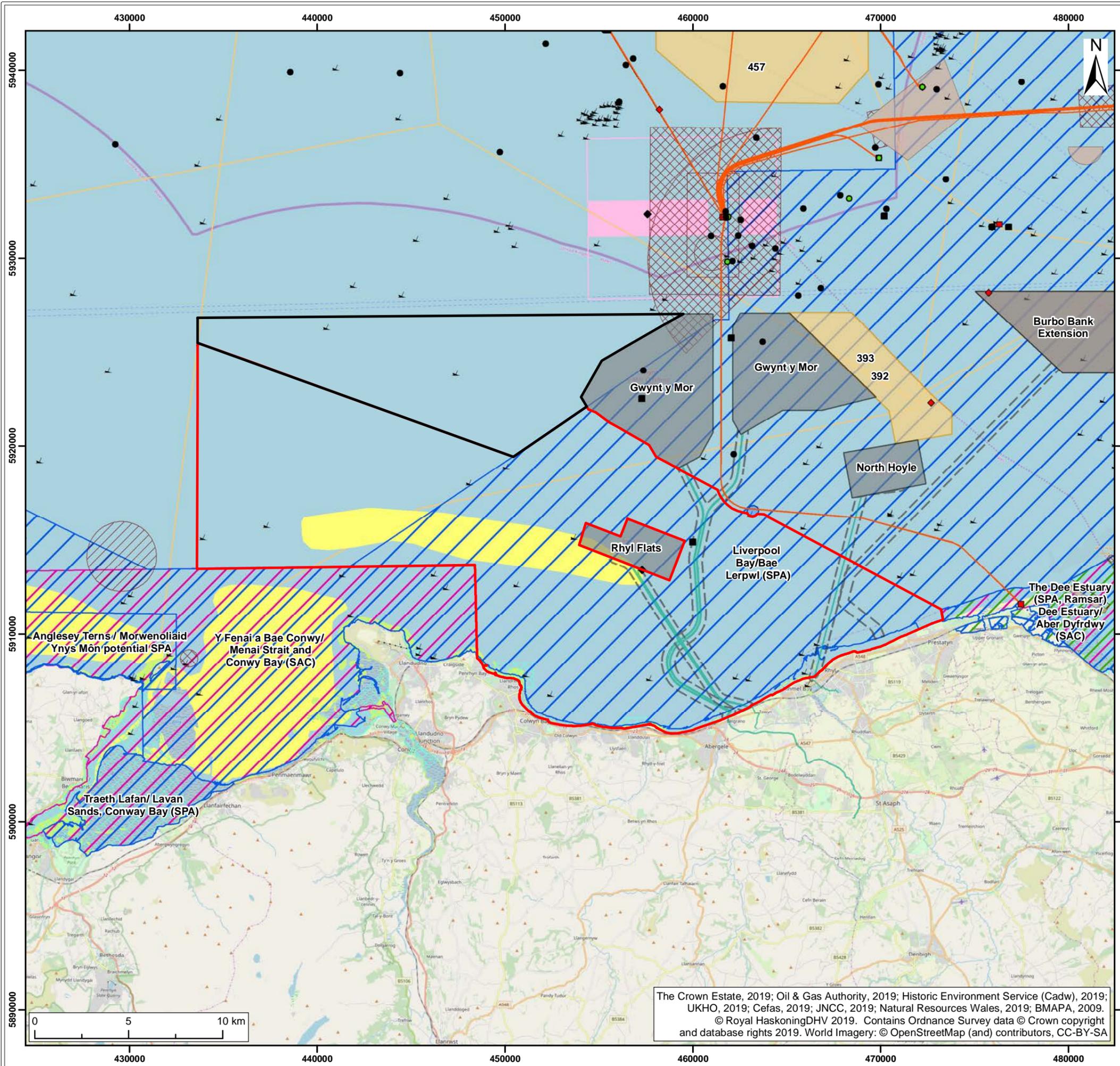
Co-ordinate system: British National Grid Page Size: A3 Scale: 1:150,000

Project: Awel Y Môr Extension Site Selection Report: Identification of Initial Site Selection Areas of Search



The Crown Estate, 2019; National Grid UK, 2019.
© Royal HaskoningDHV 2019. Contains Ordnance Survey data © Crown copyright and database rights 2019. World Imagery: © OpenStreetMap (and) contributors, CC-BY-SA





Legend:

Awel-Y-Mor Extension AfL	Areas to be Avoided
Offshore Cable Corridor Area of Search	Traffic Separation Scheme Lanes
Existing Offshore Wind Farm	Traffic Separation Zones
Offshore Wind Export Cable Agreements	Disposal Sites
Offshore Wind Farm Export	Closed
Aggregate Production Area	Disused
Dredger Transit Route	Open
UKHO Wreck	Oil & Gas Wells
Protected Wreck	Abandoned/Plugged
Ramsar	Completed
Special Protection Area (SPA)	Surface Infrastructure
Special Area of Conservation (SAC)	Active
Shellfish Waters	Removed
Annex 1 Reefs	Subsurface Infrastructure
Annex I Sandbanks	Active
	Removed
	Pipeline
	Active
	Abandoned/Not in use

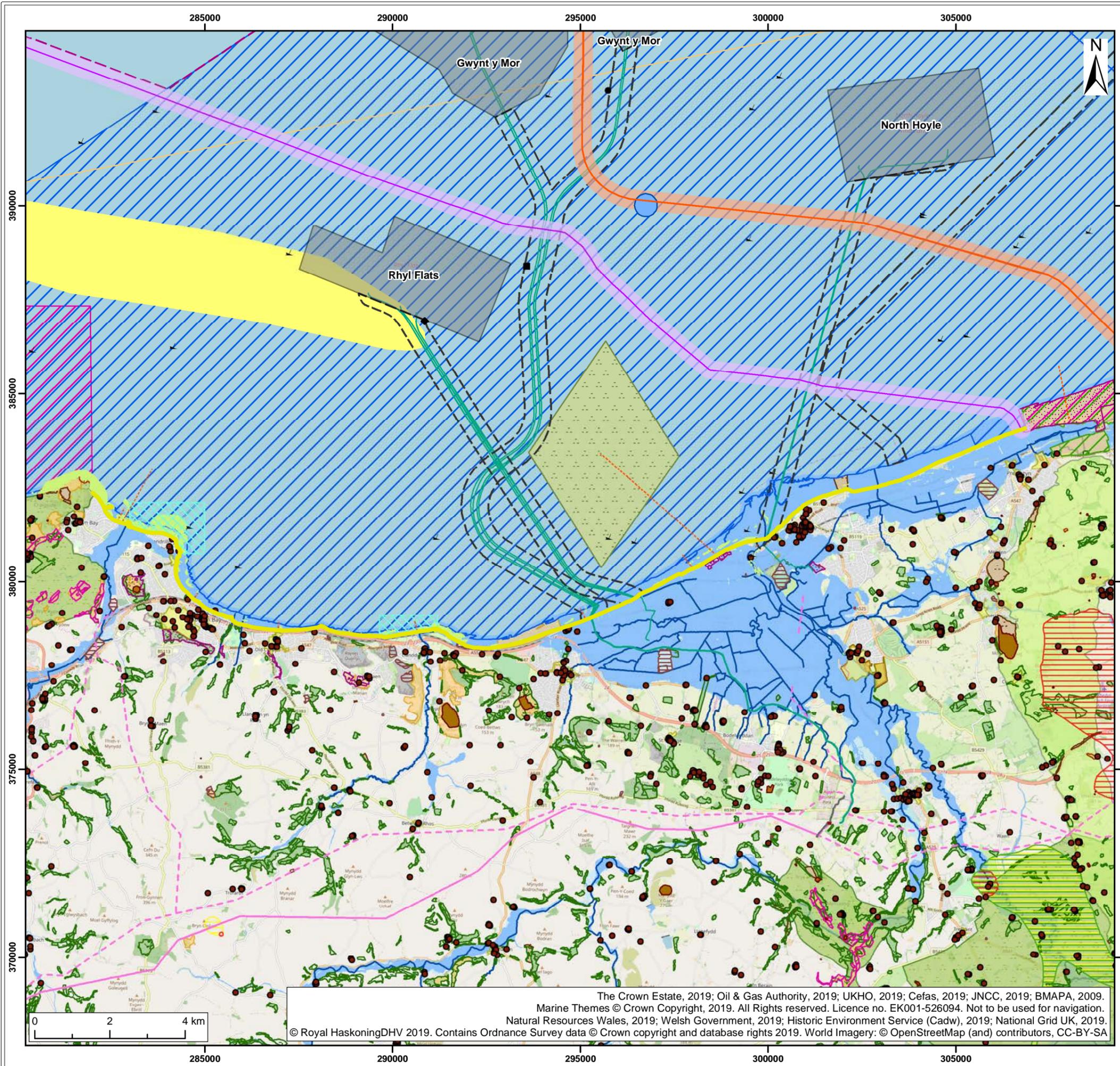
A1	C01	18/12/2019	Approved and accepted as stage complete	AB	AH	RH
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Offshore Cable Corridor Area of Search

Figure: 2	Drawing No: PB9596-RHD-ZZ-OF-DR-YE-0001	
Co-ordinate system: WGS 1984 UTM Zone 30N	Page Size: A3	Scale: 1:200,000
Project: Awel Y Môr Extension Site Selection	Report: Identification of Initial Site Selection Areas of Search	

The Crown Estate, 2019; Oil & Gas Authority, 2019; Historic Environment Service (Cadw), 2019; UKHO, 2019; Cefas, 2019; JNCC, 2019; Natural Resources Wales, 2019; BMAPA, 2009. © Royal HaskoningDHV 2019. Contains Ordnance Survey data © Crown copyright and database rights 2019. World Imagery: © OpenStreetMap (and) contributors, CC-BY-SA





- Legend:**
- Landfall Area of Search
 - Existing Offshore Wind Farm
 - Proposed Round 3.5 Extension Areas
 - Offshore Wind Export Cable
 - Agreements
 - Offshore Wind Farm Export Cable
 - Shellfish Waters
 - Pipeline 250m Buffer
 - Interconnector Cable
 - Interconnector Cable 250m Buffer
 - Annex 1 Reefs
 - Annex 1 Sandbanks
 - Oil & Gas Wells**
 - WELLSTATUS**
 - Abandoned/Plugged
 - Pipeline STATUS**
 - Active
 - Outfall Pipe
 - Marine Farm (oyster/mussels)
 - Protected Wreck
 - UKHO Wreck
 - Area of Outstanding Natural Beauty (AONB)
 - Ancient Woodland
 - Local Nature Reserve (LNR)
 - Ramsar
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)
 - Sites of Special Scientific Interest (SSSI)
 - Dredger Transit Route
 - Listed Building
 - Conservation Area
 - Scheduled Monument
 - Historic Landscape
 - Main River
 - Flood Zone 3
 - Flood Zone 2
 - Geological Conservation Review (GCR) Site
 - Regionally Important Geological & Geomorphological Site (RIG)
 - National Grid Substation Sites
 - High Voltage Underground Electricity Cable
 - RSPB_Reserves
 - Electricity Transmission Overhead Lines
 - Historic Landfill Site
 - Source Protection Zone**
 - Source protection zone I
 - Source protection zone II
 - Source protection zone III
 - Surface Infrastructure STATUS**
 - Removed
 - Subsurface Infrastructure**
 - Removed

A1	C01	18/12/2019	Approved and accepted as stage complete	AB	AH	RH
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Landfall Area of Search

Figure: 3 Drawing No: PB9596-RHD-ZZ-LF-DR-YE-0011

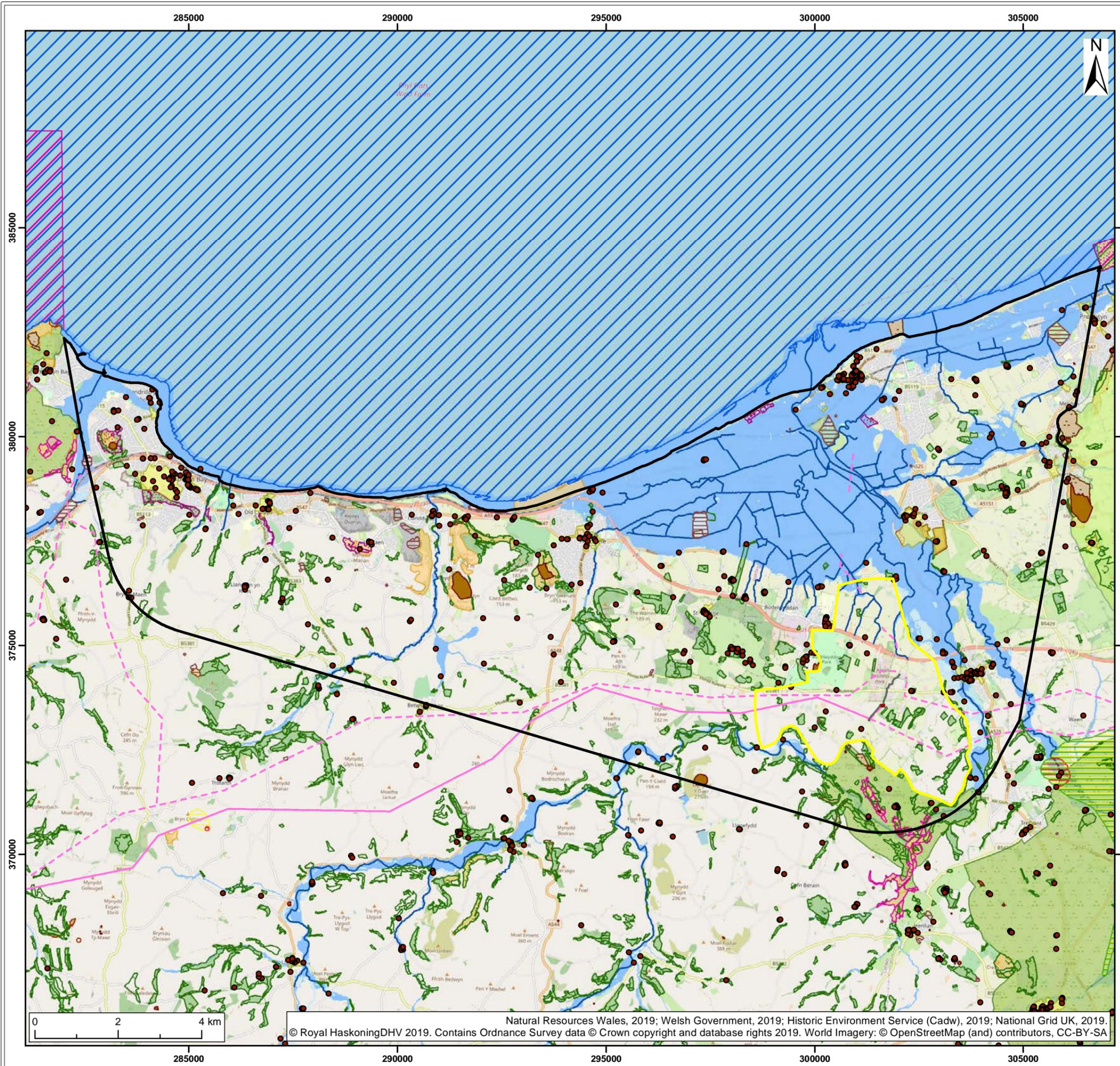
Co-ordinate system: British National Grid Page Size: A3 Scale: 1:100,000

Project:
Awel Y Môr Extension
Site Selection

Report:
Identification of Initial
Site Selection Areas of Search

The Crown Estate, 2019; Oil & Gas Authority, 2019; UKHO, 2019; Cefas, 2019; JNCC, 2019; BMAPA, 2009. Marine Themes © Crown Copyright, 2019. All Rights reserved. Licence no. EK001-526094. Not to be used for navigation. Natural Resources Wales, 2019; Welsh Government, 2019; Historic Environment Service (Cadw), 2019; National Grid UK, 2019. © Royal HaskoningDHV 2019. Contains Ordnance Survey data © Crown copyright and database rights 2019. World Imagery: © OpenStreetMap (and) contributors, CC-BY-SA



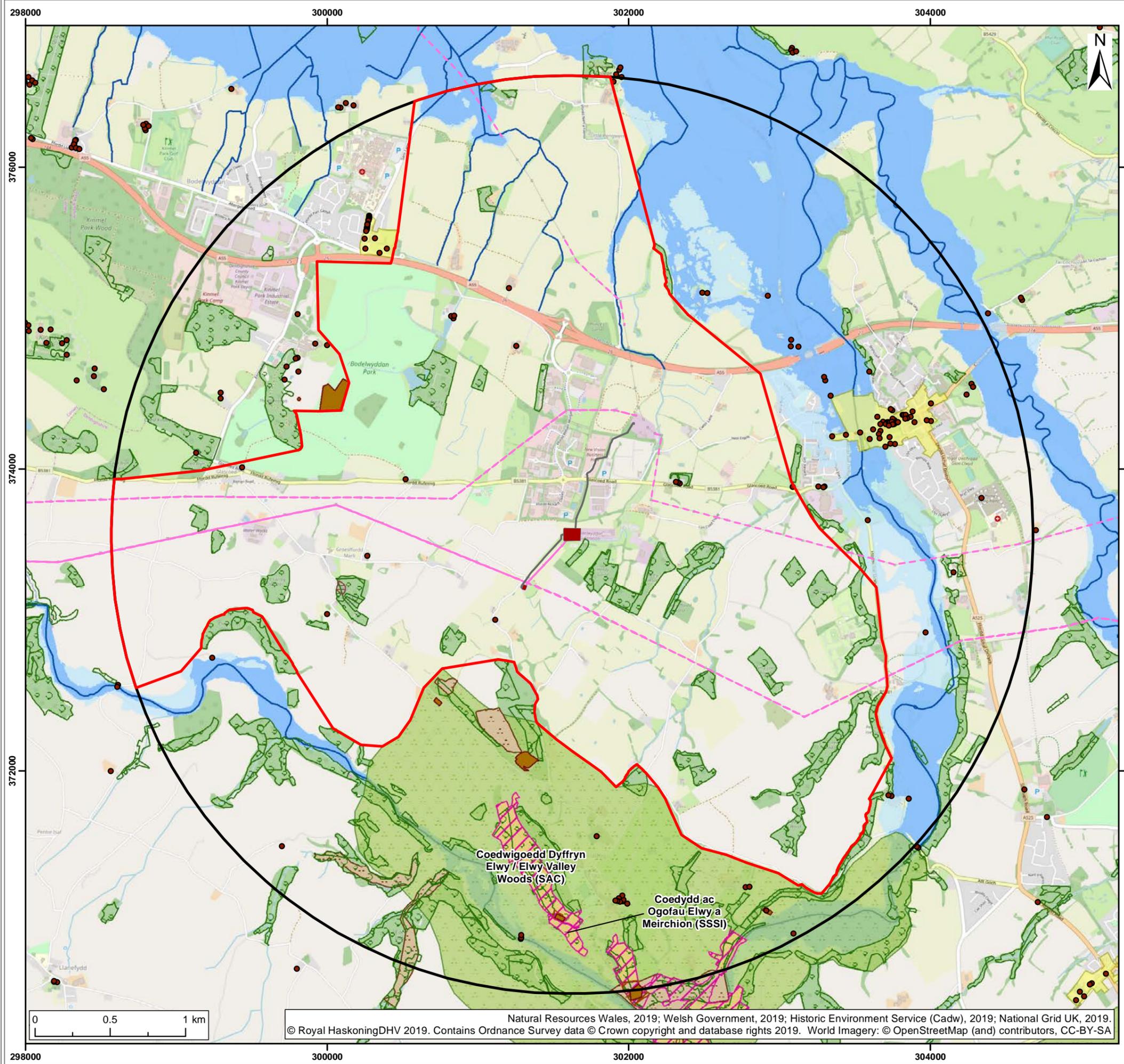


- Legend:
- Onshore Cable Corridor Area of Search
 - Main River
 - Onshore Substation Area of Search
 - Flood Zone 3
 - Flood Zone 2
 - Area of Outstanding Natural Beauty (AONB)
 - Geological Conservation Review (GCR) Site
 - Ancient Woodland
 - Regionally Important Geological & Geomorphological Site (RIG)
 - Local Nature Reserve (LNR)
 - National Grid Substation Sites
 - Ramsar
 - High Voltage Underground Electricity Cable
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)
 - Electricity Transmission Overhead Lines
 - Sites of Special Scientific Interest (SSSI)
 - Historic Landfill Site
 - Listed Building
 - Conservation Area
 - Scheduled Monument
 - Historic Landscape
 - Source protection zone I
 - Source protection zone II
 - Source protection zone III

A1	C01	18/12/2019	Approved and accepted as stage complete	AB	AH	RH
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:
Onshore Cable Corridor Area of Search

Figure: 4	Drawing No: PB9596-RHD-ZZ-ON-DR-YE-0001	
Co-ordinate system: British National Grid	Page Size: A3	Scale: 1:90,000
Project: Awel Y Môr Extension Site Selection	Report: Identification of Initial Site Selection Areas of Search	



- Legend:
- 3km Refined Substation Search Area
 - Onshore Substation Area of Search
 - Ancient Woodland
 - Special Area of Conservation (SAC)
 - Sites of Special Scientific Interest (SSSI)
 - Listed Building
 - Conservation Area
 - Scheduled Monument
 - Historic Landscape
 - Main River
 - Flood Zone 3
 - Flood Zone 2
 - Geological Conservation Review (GCR) Site
 - Regionally Important Geological & Geomorphological Site (RIG)
 - National Grid Substation Sites
 - High Voltage Underground Electricity Cable
 - Electricity Transmission Overhead Lines
 - Historic Landfill Site

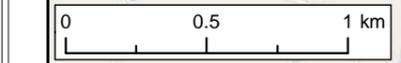
A1	C01	18/12/2019	Approved and accepted as stage complete	AB	AH	RH			
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR			

Title:
Onshore Substation Area of Search

Figure: 5 Drawing No: PB9596-RHD-ZZ-ON-DR-YE-0002

Co-ordinate system: British National Grid Page Size: A3 Scale: 1:25,000

Project: Awel Y Môr Extension Site Selection Report: Identification of Initial Site Selection Areas of Search



Natural Resources Wales, 2019; Welsh Government, 2019; Historic Environment Service (Cadw), 2019; National Grid UK, 2019.
© Royal HaskoningDHV 2019. Contains Ordnance Survey data © Crown copyright and database rights 2019. World Imagery: © OpenStreetMap (and) contributors, CC-BY-SA





Awel y Môr Offshore Windfarm

Potential Onshore and Offshore Areas
of Search

Appendix 1 - Cable Route Protocol
Requirement 9 Criteria

Date: 06 February 2020

Revision: 02



Copyright © 2019 innogy Renewables UK

REVISION	DATE	STATUS/ REASON FOR ISSUE	AUTHOR:	CHECKED BY:	APPROVED BY:
0.1 (Internal)	22.01.2020	RHDHV internal	Ruth Henderson	Paolo Pizzolla	Ed Frost
01 (External)	22.01.2020	Innogy Submission	Ruth Henderson	Paolo Pizzolla	Ed Frost
02 (External)	06.02.2020	Innogy submission	Ruth Henderson	Paolo Pizzolla	Ed Frost

Appendix 1

1.1 Cable Route Protocol Requirement 9 Criteria5

Glossary

TERM	DEFINITION
AoS	Area of Search
JNCC	Joint Nature Conservation Committee
km	Kilometre
n/a	Not applicable
NE	Natural England
NRW	Natural Resources Wales
SAC	Special Area of Conservation
SPA	Special Protection Area

1.1 Cable Route Protocol Requirement 9 Criteria

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
Dee Estuary SAC	See Figure 2 of main report	There is no overlap between the AoS and the SAC	<p>https://sac.jncc.gov.uk/site/UK0030131</p> <p>Annex I habitats that are a primary reason for selection of this site</p> <ul style="list-style-type: none"> •Mudflats and sandflats not covered by seawater at low tide; •Salicornia and other annuals colonizing mud and sand; and •Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>). <p>Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site</p> <ul style="list-style-type: none"> •Atlantic salt meadows; •Estuaries; •Annual vegetation of drift lines; 	<p>http://publications.naturalengland.org.uk/publication/6124489284780032</p> <p>It is not clear from NE documentation which if any of the features have a restoration objective</p> <p>If the western part of the AoS is used for cable corridors and landfalls are utilised there will be a >10km between the project boundary and the site.</p> <p>Eastern options would be <2km from the site. There would need to be major infrastructure in the inshore area for there to be any pathway for indirect impact upon the site.</p>	There is no direct interaction between the AoS and the SAC, therefore no pathway for impact

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
			<ul style="list-style-type: none"> •Vegetated sea cliffs of the Atlantic and Baltic Coast; •Embryonic shifting dunes; •Shifting dunes along the shoreline with <i>Ammophila arenaria</i>; •Fixed coastal dunes with herbaceous vegetation * Priority feature; and •Humid dune slacks. 		
Dee Estuary SPA	See Figure 2 of main report	There is no overlap between the AoS and the SPA	<p>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/851105/Dee_Estuary_SPA_and_SAC_Factsheet.pdf</p> <p>The site has been designated as an SPA for supporting the following over wintering species: bar-tailed godwit (<i>Limosa lapponica</i>), black-tailed godwit (<i>Limosa limosa islandica</i>), curlew (<i>Numenius arquata</i>), dunlin (<i>Calidris alpina</i>)</p>	<p>http://publications.naturalengland.org.uk/publication/6557770283220992?category=4582026845880320</p> <p>It is not clear from NE documentation which if any of the features have a restoration objective</p> <p>If the western part of the AoS is used for cable corridors there will</p>	n/a

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
			<p><i>alpina</i>), grey plover (<i>Pluvialis squatarola</i>), knot (<i>Calidris canutus</i>), oystercatcher (<i>Haematopus ostralegus</i>), pintail (<i>Anas acuta</i>), redshank (<i>Tringa totanus</i>), shelduck (<i>Tadorna tadorna</i>) and teal (<i>Anas crecca</i>). The site has also supports breeding common tern (<i>Sterna hirundo</i>) and little tern (<i>Sterna albifrons</i>), as well as supporting on passage sandwich tern (<i>Sterna sandvicensis</i>) and redshank (<i>Tringa totanus</i>). The SPA also regularly supports at least 20,000 waterfowl.</p>	<p>be a >10km between the project boundary and the site.</p> <p>Eastern options would be <2km from the site. There would need to be major infrastructure in the inshore area for there to be any pathway for indirect impact upon the site.</p>	
<p>Liverpool Bay/ Bae Lerpwl SPA</p>	<p>See Figure 2 of main report</p>	<p>Within the AoS</p>	<p>http://archive.jncc.gov.uk/default.aspx?page=7507</p> <p>Liverpool Bay is classified for the protection of red-throated diver (<i>Gavia stellata</i>), common scoter (<i>Melanitta nigra</i>), and little gull (<i>Hydrocoloeus minutus</i>) in the non-breeding season; common tern</p>	<p>http://archive.jncc.gov.uk/default.aspx?page=7507</p> <p>http://archive.jncc.gov.uk/default.aspx?page=7507</p> <p>It is not clear from NE documentation which if any of the features have a restoration objective</p>	<p>Sandbanks may be considered supporting features of the SPA. If these cannot be avoided by cable corridors, then there may be a</p>

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
			<p>(<i>Sterna hirundo</i>) and little tern (<i>Sterna albifrons</i>) in the breeding season, and an internationally important waterbird assemblage.</p>	<p>There is potential for construction impacts wintering or foraging birds (i.e. disturbance) however these could be managed as per methods agreed for the Outer Thames Estuary SPA (e.g. management of vessel traffic).</p> <p>Operational impacts would be minimal. If cables use the western part of the AoS (i.e. west of the existing cable corridor) cables may cross non-designated Annex 1 Sandbank, therefore cable protection may be a concern if required (this is dependent upon site specific surveys). Eastern routes would not affect this and therefore there would be no operational impacts.</p>	<p>small loss of habitat if cable protection is required.</p>

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC	See Figure 2 of main report	There is no overlap between the AoS and the SAC.	https://sac.jncc.gov.uk/site/UK0030202 Annex I habitats that are a primary reason for selection of this site: <ul style="list-style-type: none"> •Mudflats and sandflats not covered by seawater at low tide; •Sandbanks which are slightly covered by sea water all the time; •Reefs; Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site; <ul style="list-style-type: none"> •Large shallow inlets and bays; and •Submerged or partially submerged sea caves. 	https://sac.jncc.gov.uk/site/UK0030202 It is not clear from JNCC documentation which if any of the features have a restoration objective. If the eastern cable corridors are utilised there will be around 10km between the project boundary and the site (assuming cables are to the east of the existing cables). Eastern options would be a minimum <1km from the site. There is potential for indirect impact upon features (i.e. due to sediment transport) during construction. Even if site features are in unfavourable condition any indirect impact would however unlikely be a key issue for stakeholders and unlikely to affect condition.	There is no direct interaction between the AoS and the SAC, therefore no pathway for impact.

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
Anglesey Terns / Morwenoliaid Ynys Môn SPA	See Figure 2 of main report	There is no overlap between the AoS and the SPA	https://naturalresources.wales/media/681970/spa-uk9013061-register-entry001.pdf Classified for the protection of Roseate tern (<i>Sterna dougalli</i>), Common tern (<i>Sterna hirundo</i>), Arctic tern (<i>Sterna paradisaea</i>), Sandwich tern (<i>Sterna sandvicencis</i>).	https://naturalresources.wales/media/681970/spa-uk9013061-register-entry001.pdf It is not clear from NRW documentation which if any of the features have a restoration objective The minimum distance between the AoS and the site is >10km therefore there is no pathway for direct interaction or disturbance. Indirect impact (i.e. sediment transportation during construction) would be negligible and unlikely to affect the birds.	There is no direct interaction between the AoS and the SPA, therefore no pathway for impact.

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
North Anglesey Marine / Gogledd Môn Forol	See Figure 2 of main report	There is no overlap between the AoS and the SAC.	https://jncc.gov.uk/mpa-mapper/ Harbour porpoise (<i>Phocoena phocoena</i>)	http://archive.jncc.gov.uk/page-7244 Harbour porpoise are at Favourable Conservation Status (FCS) in UK waters. The site is over 20km from the AoS. Whilst there may be impacts upon the site from offshore construction (i.e. foundation piling noise) there would be no pathway for impact from cable installation.	There is no direct interaction between the AoS and the SAC, therefore no pathway for impact.

HABITATS REGULATIONS SITES RELEVANT TO THE OFFSHORE AOS	REFERENCE FIGURE	INTERACTION	FEATURES OF THE HABITATS REGULATIONS SITES (INCLUDING PRIORITY HABITATS AND SPECIES)	CONSERVATION OBJECTIVES TO RECOVER FEATURES TO FAVOURABLE CONDITION	HABITATS THAT ARE KNOWN TO BE IRREPLACEABLE OR VERY DIFFICULT TO REPLACE
Traeth Lafan/ Lavan Sands, Conwy Bay SPA	See Figure 2 of main report		The site is of importance for wintering waterbirds, especially Oystercatcher (<i>Haematopus ostralegus</i>) and Curlew (<i>Numenius arquata</i>).	<p>https://naturalresources.wales/media/674184/Traeth%20Lafan%20SAC%20Plan%2021[1].4.08%20English.pdf</p> <p>It is not clear from NRW documentation which if any of the features have a restoration objective.</p> <p>The site is over 20km from the AoS. There would be no pathway for impact from cable installation.</p>	There is no direct interaction between the AoS and the SPA, therefore no pathway for impact.
Non-designated Features (Annex1)	See Figure 2 of main report	Within the AoS	<p>https://jncc.gov.uk/mpa-mapper/ (downloaded from the viewer)</p> <p>n/a</p>	<p>The sandbanks qualify as Annex 1 but are not designated as such. Condition is not recorded / relevant.</p> <p>The sandbanks may be considered supporting features of the SPA. If these cannot be avoided by cables, then there may be a small loss of habitat if cable protection is required.</p>	If these cannot be avoided by cables, then there may be a small loss of habitat if cable protection is required.

This page is intentionally blank



RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.innogy.com

Registered office: RWE
Renewables UK Swindon
Limited Windmill Hill
Business Park Whitehill
Way
Swindon
Wiltshire SN5 6PB