Technical Note – Mona and Morgan Offshore Survey 2022 NRW Band 2 Marine Licence Application Supporting Document

Version 2.0 – January 2022

1. Introduction

bp and Energie Baden-Württemberg AG (EnBW) have been awarded preferred bidder status for two offshore wind leases in the Irish Sea as part of The Crown Estate Offshore Wind Leasing Round 4, named Mona and Morgan. To inform the development of the projects, bp and EnBW intend to carry out a survey campaign commencing in Spring 2022.

The works proposed are an environmental, geotechnical and geophysical survey along the potential export cable routes, within the Morgan and Mona offshore windfarm bidding areas, and in the Zone of Influence around the bidding areas. MarineSpace is acting as the agent to obtain relevant consents for the environmental, geotechnical and geophysical survey.

This technical note sets out scope of the survey works, relevant legislative and policy context, associated potential impacts and mitigation measures to help inform the marine licensing decision making process.

2. Relevant Legislation and Policy

2.1. Marine and Coastal Access Act 2009

Under the Marine and Coastal Access Act 2009, a marine licence is required for carrying out a 'licensable marine activity', including construction works on the seabed, depositing of any object, certain removals from the seabed, dredging and aggregate extraction.

The Welsh Government is the licensing authority for the Welsh inshore and offshore region. The Marine Licensing Team (MLT) in Natural Resources Wales (NRW) administer marine licences on behalf of the Welsh Government.

Marine licensable activities, as defined under the Marine and Coastal Access Act 2009, can be summarised as:

- Deposit any substance or object, in the sea or on or under the seabed;
- Construct, alter or improve any works either in or over the sea or on or under the seabed;

- Use a vehicle, vessel, aircraft, marine structure or floating container to remove any substance or object from the seabed;
- Carry out any form of dredging, whether or not involving the removal of any material from the sea or seabed.

The proposed survey works include the removal of seabed samples using a vessel and constitute a marine licensable activity under the Marine and Coastal Access Act 2009. Therefore, a marine licence application is required from NRW MLT for the works within Welsh waters.

2.2. Welsh National Marine Plan

The Welsh Government adopted the first Welsh National Marine Plan (WNMP) covering Welsh inshore and offshore waters in November 2019. The plan has been developed in accordance with the Marine and Coastal Access Act 2009, the UK Marine Policy Statement and the Marine Spatial Planning Directive.

Under the Marine and Coastal Access Act, all public authorities must consider relevant Marine Plans when making decisions regarding the marine area, in this case the WNMP. This ensures that marine resources are used in a sustainable way in line with high-level marine objectives.

A summary of the WNMP policies relevant to the proposed works is outlined in Table 2.1. A full WNMP assessment accompanies the marine licence application as a supporting document.

Table 2.1: Summary of the WNMP policies relevant to the proposed works

Relevant Welsh National Marine Plan Policy	How the Survey Works Adhere to the Policy
ELC_01: Low carbon energy (supporting) wind **ELC_01 a**: Proposals for offshore wind energy generation will be supported where they contribute to the objectives of this plan. Proposals should comply with the relevant general policies and sector safeguarding policies of this plan and any other relevant considerations. Proposals for wind >350MW will be considered by UK Government in accordance with relevant national policy. In determining an NSIP for a wind proposal, the decision maker will have regard to this plan. Any determination in relation to energy developments of any scale will be taken in accordance with this plan alongside any other relevant considerations. **ELC_01 b**: In order to understand future opportunities for offshore wind development, including floating technologies, this plan supports strategic planning for the sector. Relevant public authorities and the sector are encouraged, in liaison with other interested parties, to collaborate to understand	The environmental, geotechnical and geophysical survey will inform the development of the two Round 4 offshore wind farm sites, Morgan and Mona, which will contribute up to 3 GW of renewable energy to Wales and the rest of the UK. Conducting comprehensive offshore surveys and using the data to inform the design and environmental assessments of the projects can help ensure sustainable marine development, getting the right project in the right location and avoiding environmental and other sensitivities where possible.

Relevant Welsh National Marine Plan Policy	How the Survey Works Adhere to the Policy
opportunities for the sustainable use of wind energy resources including identification of: • natural resources that provide potential opportunity for future use; • evidence to de-risk consenting for the sector; and • opportunities to define and, once in place, further develop and refine Strategic Resource Areas for offshore wind energy resource safeguarding; in order to support the sustainable development of the sector through marine planning. Relevant public authorities should make appropriate evidence available to support planning and decision making in order to support the sustainable development of the sector through marine planning, where it is appropriate to do so.	
ENV_02: Marine Protected Areas Proposals should demonstrate how they: • avoid adverse impacts on individual Marine Protected Areas (MPAs) and the coherence of the network as a whole; • have regard to the measures to manage MPAs; and • avoid adverse impacts on designated sites that are not part of the MPA network.	The environmental, geotechnical and geophysical data will directly support the identification of areas of sensitivity within MPAs along the proposed export cable corridors and will be used to inform the cable route design. This will help avoid and mitigate potential adverse impacts from the proposed offshore export cable installations. In terms of these survey works, minimal environmental and geotechnical samples will be taken within MPAs and where these are required, best practice measures and mitigation will be implemented, such as the use of drop down video/ cameras and the review of geophysical survey data prior to sampling to help avoid sensitive features.
SOC_05: Historic assets Proposals should demonstrate how potential impacts on historic assets and their settings have been taken into consideration and should, in order of preference: a. avoid adverse impacts on historic assets and their settings; and/ or	The survey works will not have a significant impact on marine historic assets. In areas of known archaeological features environmental and geotechnical sampling will be avoided where possible. Consultation has been undertaken with the relevant archaeological

Relevant Welsh National Marine Plan Policy	How the Survey Works Adhere to the Policy
b. minimise impacts where they cannot be avoided; and/ or c. mitigate impacts where they cannot be minimised. If significant adverse impacts cannot be avoided, minimised or mitigated, proposals must present a clear and convincing case for proceeding. Opportunities to enhance historic assets are encouraged.	stakeholders who have confirmed that they do not consider the environmental, geotechnical and geophysical surveys to pose a significant risk to archaeological interests or historic assets. The sample location will be chose based on geophysical survey data to help avoid potential archaeological features.
GOV_02: Cross-border and plan compatibility Relevant public authorities, in making their decisions, should have regard to: • any applicable policy in a relevant marine plan; • any applicable policy in relevant terrestrial development plans or related documents; • the Natural Resources Policy; • any relevant local well-being plan(s) (including the local well-being assessment); and • evidence in any relevant Area Statement(s) produced by Natural Resources Wales (NRW).	The proposed survey works are located within Welsh, English and Isle of Man waters. Relevant consents and exemptions are being sought from the different authorities as required, including the Marine Management Organisation, Isle of Man Department of Environment, Food and Agriculture and Seabed Survey Licence from The Crown Estate.

3. Survey Locations

A descriptive outline of the overall survey locations, including the Morgan and Mona offshore bidding areas, Zones of Influence of the bidding areas and six potential export cable corridors is provided below and depicted in Figure 4.1.

3.1.1. Offshore Array Areas

The Morgan site is located in English offshore waters, and the Mona site primarily within Welsh offshore waters with a small proportion within English waters. Both are located approximately 30 km offshore from the coast.

3.1.2. Zone of Influence

The Zone of Influence (ZoI) is a buffer around each of the offshore bidding areas that represents one tidal excursion. The ZoI is used to inform the Environmental Impact Assessment (EIA) on the likely extent of certain potential impacts.

3.1.3. Export Cable Corridors

Currently there are six options for the potential export cable corridor, within both English and Welsh waters. This results in a large study area for the surveys, as shown in Figure 4.1. It is expected that only two of these routes will be surveyed, however, this will not be known in advance of applying for consents. Therefore, all six have been included to ensure consents are in place to allow for any of the options to be investigated when the decision has been made. The maximum number of samples included in this marine licence application allows contingency should surveys be required along two export cable corridors in Welsh waters.

4. Overview of Survey Methodology and Timing

To inform the development of the Morgan and Mona offshore wind farms, including engineering design and environmental impact assessments, bp and EnBW intend to carry out the geophysical, geotechnical and environmental offshore survey commencing in Spring 2022. The number and volume of sediment samples is outlined in Table 4.2.

4.1. Environmental Survey

The environmental survey element will include:

- Drop down video/ camera; and
- Grab samples.

The environmental survey will cover the potential export cable corridors, the bidding areas of Morgan and Mona and the Zone of Influence of the bidding areas. Seabed conditions will be confirmed through the use of the drop down video/ camera, prior to a grab sample, to determine whether it is appropriate and safe for a grab sample to be take, for example avoidance of UXOs and sensitive habitats.

Grab samples will be taken from a survey vessel using either a 0.1m^2 Day Grab (100% redundancy), 0.1m^2 mini Hamon Grab (back-up). The grab sampler will be lowered to the seafloor from the vessels hydraulic A Frame. Once in contact with the seafloor, tension within the connected wire is released which in turn activates the grab, collecting a sample.

Recovered samples shall be sub sampled immediately after recovery to provide an individual sample for hydrocarbon, heavy metals, particle size analysis and infauna. Sub-samples shall comprise the top 4 cm of undisturbed sediment in cores (top 3 cm for hydrocarbon sample).

Sediment for infaunal subsampling shall be collected from the top 10-15 cm of sediment. Benthic samples must be taken with suitable equipment to avoid sediment compression. Infauna sediment samples shall be elutriated and wet-sieved on board through a 0.5-mm mesh.

4.2. Geotechnical Survey

The geotechnical survey element will include:

- Vibrocores, to an approximate depth of 6 m and up to 108 mm diameter; and
- Cone penetration tests (CPTs), to an approximate depth of 6 m.

The geotechnical surveys will cover both offshore bidding areas and along the potential export cable corridors. Samples will be taken at approximately 1 km intervals along the full length of the potential export cable corridors. Should the first sample attempt be unsuccessful (i.e. <6 m), a second attempt will be made in the same target area.

No sediment is removed through CPTs and this method is therefore a non-marine licensable activity. Vibrocore samples involve the extraction of sediment core samples from the seabed and therefore require a marine licence prior to works taking place.

Core samples will be taken from the vessel(s). The vibrocorer comprises a steel tube with an inner plastic liner which is lowered to the seabed from the vessel from an A frame or crane. It is then vibrated into the sediment by an electric motor to the required depth. The vibrocorer is removed carefully to avoid disturbance to surrounding sediment, the plastic liner is then removed to expose the collected core sample. It is expected that the vibrocore will vibrate at 1750 rpm using an installed power of 11 Kw.

4.3. Geophysical Surveys

Geophysical survey data (non-marine licensable) acquisitions will occur alongside the environmental and geotechnical surveys. The geophysical surveys will include:

- Multi-Beam Echo Sounders - operating frequency of between 200 - 400kHz or greater;
- Side Scan Sonar - simultaneous dual frequency of 300/600 kHz;
- Sub-bottom profiler – up to three SBP systems will be used: 1) 0.2 – 5 kHz; 2) 3.5 – 7 kHz; 3) 3.5 – 6.5 kHz; and
- Magnetometer Surveys.

The geophysical surveys are non-marine licensable activities, however, the information from the surveys will be input into the JNCC Marine Noise Registry pre and post survey, as well as complying with the JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys (JNCC, 2017). We have requested confirmation from NRW Species Licensing Team that they do not consider a European Protected Species (EPS) licence is required given the nature of the works.

4.4. Survey Programme

The survey is expected to commence in April 2022 and to last for up to four months, weather dependant as outlined in Table 4.1.

One survey vessel is expected to undertake all elements of this offshore survey, with one smaller vessel utilised for inshore areas of the export cable corridors.

Table 4.1: Indicative survey programme

Anticipated date	Activity
April 2022	Geophysical survey data acquisition within Mona and Morgan offshore bidding areas.
April – September 2022	Geophysical survey data acquisition along potential export cable corridors. Environmental survey data collection within the bidding areas and Zone of Influence of the bidding areas.
May-October 2022	Environmental and geotechnical survey data acquisition along potential export cable corridors. Deep geotechnical survey, including deep CPTs and boreholes (separate marine licence application to be submitted to NRW for this survey).

Although it is anticipated that the marine licensable survey works will be completed within three months, a marine licence is being sought for a 12 month period, 1st April 2022 to 31st March 2023, to allow for sufficient contingency and to reduce the likelihood of needing subsequent licence variations, should works be delayed.

4.5. Sample Volumes

A Day/Hamon Grab will be used to acquire grab samples. Each grab sample has a maximum volume of 0.015 m^3. The total volume of sediment to be removed through grab sampling will be under a maximum of 2.5 m^3 within Welsh waters.

The diameter of the vibrocore samples will be a maximum of 108 mm and sample lengths no greater than 6 m. The total volume of sediment to be removed through vibrocoring will be under a maximum of 7 m^3 within Welsh waters.

The maximum total volume of sediment removal within Welsh waters will not exceed 9 m^3. Estimates of the volume of sediment to be removed and the number of core samples are set out in Table 4.2.

Table 4.2: Estimate of volume of environmental and geotechnical sediment samples

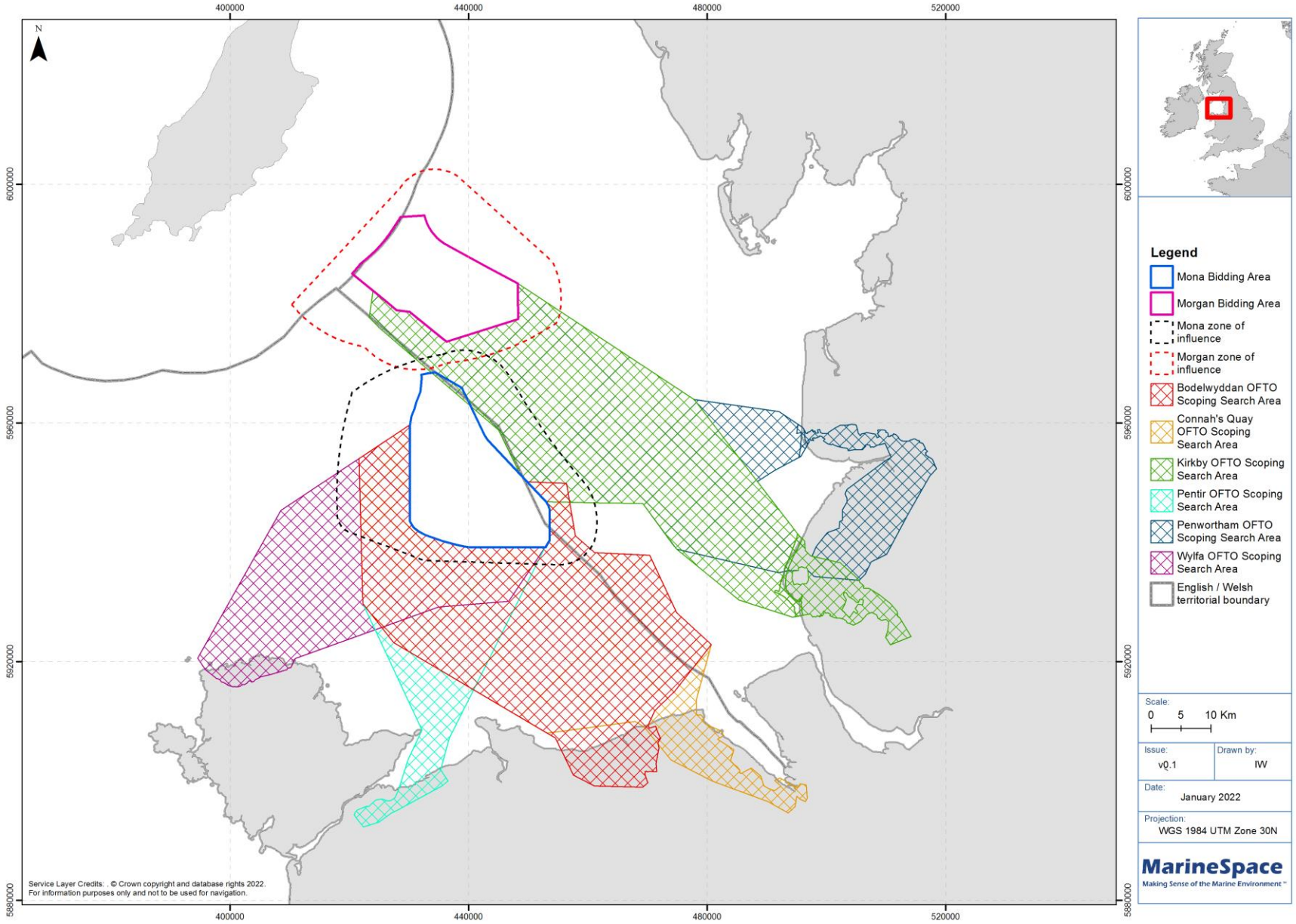
Sample type	Area	Max. no. of samples (m^3)	Approx. volume per sample (m^3)	Approx. total volume of samples (m^3)
Grab samples	Zone of Influence around Mona Offshore Bidding Area	20	0.015	0.3
Grab samples	Within Mona Bidding Area	15	0.015	0.225
Grab samples	Along potential export cable corridors	60	0.015	0.9
Grab samples	Along potential export cable corridors – contingency route	60	0.015	0.9
Vibrocores	Within Mona Bidding Area	10	0.06	0.6
Vibrocores	Along potential export cable corridors – contingency route	50	0.06	3.0
Vibrocores	Along potential export cable corridors	50	0.06	3.0
Maximum Total volume of all samples				**8.925**
Most Likely Scenario Total volume of sample (one export cable corridor only)				**5.025**

As outlined in Section 3.1.3, currently there are six options for the potential export cable corridor, within both English and Welsh waters from the Morgan and Mona sites. This results in a large study area for the surveys. It is expected that only two of these routes will be surveyed, one in English and one in Welsh waters. However, this will not be known in advance of applying for consents. Therefore, all six have been included to ensure consents are in place to allow for any of the options to be investigated when the decision has been made. The maximum number of samples included in this marine licence application allows contingency should surveys be required along two export cable corridors in Welsh waters.

4.6. Vessel Types

The vessel(s) to be used to undertake the proposed survey will be confirmed prior to the commencement of the works. It is anticipated that one integrated survey vessel will be required for the offshore elements of the works and a nearshore survey vessel for the inshore/coast elements with water depths less than 15 m.

Figure 4.1. Survey area for Morgan and Mona environmental, geophysical and geotechnical surveys


400000
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Legend
Mona Bidding Area
Morgan Bidding Area
Mona zone of influence
Morgan zone of influence
Bodelwyddan OFTO Scoping Search Area
Connah's Quay OFTO Scoping Search Area
Kirkby OFTO Scoping Search Area
Pentir OFTO Scoping Search Area
Penwortham OFTO Scoping Search Area
Wylfa OFTO Scoping Search Area
English / Welsh territorial boundary
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0 5 10 Km
Issue:
v0.1
Drawn by:
IW
Date:
January 2022
Projection:
WGS 1984 UTM Zone 30N
MarineSpace
Making Sense of the Marine Environment ™
Service Layer Credits: . © Crown copyright and database rights 2022.
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5. Designated sites and proposed mitigation

5.1. Designated sites

Table 5.1 outlines the designated sites and their classified features that the survey works may fall within or nearby.

Figure 5.1 outlines the proposed survey area for the Morgan and Mona offshore biding areas, zones of influence and potential export cable corridors in relation to designated sites.

Table 5.1: Relevant designated marine sites and associated classified features

Relevant Designated Marine Site	Classified Features	Distance from works
North Anglesey Marine / Gogledd Môn Forol SAC	Annex II species that are a primary reason for selection of this site: - Harbour porpoise *Phocoena phocoena*	0 km
Anglesey Tern / Morwenoliaid Ynys Môn SPA	Breeding Season - Roseate tern *Sterna dougallii* - Common tern *Sterna hirundo* - Arctic tern *Sterna paradisaea* - Sandwich tern *Sterna sandvicencis*	0 km
Traeth Lafan/ Lavan Sands, Conway Bay SPA	- Oystercatcher *Haematopus ostralegus* - Red-breasted Merganser *Mergus serrator* - Curlew *Numenius arquata* - Great Crested Grebe *Podiceps cristatus* - Redshank *Tringa tetanus*	0 km
Liverpool Bay / Bae Lerpwl SPA	Non-breeding Season - Red-throated diver *Gavia stellata* - Common scoter *Melanitta nigra* - Little gull *Hydrocoloeus minutus* Breeding Season - Common tern *Sterna hirundo* - Little tern *Sterna albifrons* - Internationally important waterbird assemblage.	0 km
Y Fenai a Bae Conwy/ Menai Strait and Conwy Bay SAC	Annex 1 habitats that are a primary reason for selection of this site: - 1110 Sandbanks which are slightly covered by sea water all the time	0 km

Relevant Designated Marine Site	Classified Features	Distance from works
	- 1140 Mudflats and sandflats not covered by seawater at low tide - 1170 Reefs Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site - 1160 Large shallow inlets and bays - 8330 Submerged or partially submerged sea caves	
Dee Estuary/ Aber Dyfrdwy SAC	Annex I habitats that are a primary reason for selection of this site - 1140 Mudflats and sandflats not covered by seawater at low tide - 1310 Salicornia and other annuals colonizing mud and sand - 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site - 1130 Estuaries - 1210 Annual vegetation of drift lines - 1230 Vegetated sea cliffs of the Atlantic and Baltic Coasts - 2110 Embryonic shifting dunes - 2120 "Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes')" - 2130 "Fixed coastal dunes with herbaceous vegetation ('grey dunes')" - 2190 Humid dune slacks Annex II species present as a qualifying feature, but not a primary reason for site selection - 1095 Sea lamprey *Petromyzon marinus* - 1099 River lamprey *Lampetra fluviatilis* - 1395 Petalwort *Petalophyllum ralfsii*	0 km
The Dee Estuary SPA	Non-breeding Season - Common shelduck *Tadorna tadorna* - Eurasian teal *Anas crecca* - Northern pintail *Anas acuta* - Eurasian oystercatcher *Haematopus ostralegus* - Grey plover *Pluvialis squatarola* - Red knot *Calidris canutus* - Dunlin *Calidris alpina alpina* - Black-tailed godwit *Limosa limosa islandica* - Bar-tailed godwit *Limosa lapponica*	0 km

Relevant Designated Marine Site	Classified Features	Distance from works
	- Eurasian curlew *Numenius arquata* - Common redshank *Tringa totanus* - Sandwich tern *Sterna sandvicensis* Breeding Season - Common tern *Sterna hirundo* - Little tern *Sterna albifrons* - Internationally important waterbird assemblage.	
Cemlyn Bay SSSI	Breeding bird assemblage - Common redshank *Tringa totanus* - Sandwich tern *Sterna sandvicensis* - Roseate tern *Sterna dougallii* - Arctic tern *Sterna paradisaea* Coastal lagoon Vegetated shingle which is characterised by sea kale, yellow horned poppy and sea radish.	<1 km
Traeth Lafan SSSI	Dwarf eel Grass (Zostera noltei) Moderately exposed sand Rockpools (pools and depressions in the mussel bed supporting hydroids or sea firs) Oystercatcher *Haematopus ostralegus* Curlew *Numenius arquata* Redshank *Tringa totanus* Red-breasted merganser *Mergus serrator* Great crested grebe *Podiceps cristatus*	<1 km

As outlined in Section 3.1.3, the decision on which of the export cable corridor will be included in the survey campaign will not be made until after the marine licence application is submitted. It is expected that only one export cable corridor will be surveyed, therefore certain designated sites listed in Table 5.1 will not be impacted by the works. All potentially impacted designated sites have been included in this technical note as a worst-case scenario.

5.2. Potential impact pathways

5.2.1. Temporary, localised increase in suspended sediment levels

The proposed works may pose a risk to these protected areas, particularly benthic habitats, through increases in turbidity, suspended sediment or contaminant concentrations following disturbance of sediments. However, the volume of sediment disturbed is expected to small and spread over a large area, as indicated in Figure 4.1, therefore it is expected any disturbance will be rapidly diluted to background levels. Any changes will be highly localised in terms of spatial extent and limited in duration to within a single tidal cycle. Any changes can, therefore, be classed as temporary and will not pose a threat of adverse impacts upon any of the designated sites identified.

5.2.2. Potential biosecurity risk from introduction of Invasive Non-Native Species

The proposed works presents the possibility of the introduction or spread of Invasive Non-native Species (INNS) through the presence of vessels and use of surveying equipment. Where hard substrates are present, there is risk of transfer of sessile species such as the non-native carpet sea squirt *Didemnum vexillum* and leathery sea squirt *Styela clava* from vessel hulls to existing hard surfaces. The growth of these species can present a threat to both local fishermen and native marine habitats. Exchange of ballast water at sea, or flushing of bilge tanks before reaching destination port, can potentially introduce INNS carried to site within the vessel.

To mitigate and reduce this risk, best practice will be adhered to. All survey equipment, materials and machinery to be in a clean condition prior to their arrival on site and operations crew will be vigilant throughout the survey works. Therefore, a negligible impact is predicted.

5.2.3. Underwater noise from geophysical surveys

The offshore geophysical surveys present a risk of increased underwater noise that may impact certain marine mammal and fish species. The proposed geophysical survey and operating frequencies include:

- Multi-Beam Echo Sounders - operating frequency of between 200 - 400kHz or greater;
- Side Scan Sonar - simultaneous dual frequency of 300/600 kHz;
- Sub-bottom profiler - up to three SBP systems will be used: 1) 0.2 – 5 kHz; 2) 3.5 – 7 kHz; 3) 3.5 – 6.5 kHz; and
- Magnetometer Surveys.

To support the 2021 offshore survey campaign, bp commissioned an underwater sound assessment which was undertaken by Xodus Group. The report concluded that the potential impacts to marine mammals and fish via sound from the offshore survey activities are negligible based on the underwater noise modelling undertaken (Xodus, 2021). NRW and Natural England were consulted on the report and were satisfied that the surveys did not pose a significant adverse impact on marine mammals or fish species. The 2022 offshore geophysical survey will use the same survey

techniques and operating frequencies. Therefore, it is predicted that there will be a negligible to low impact to marine mammals and fish from underwater noise.

5.3. Best practice and proposed mitigation measures

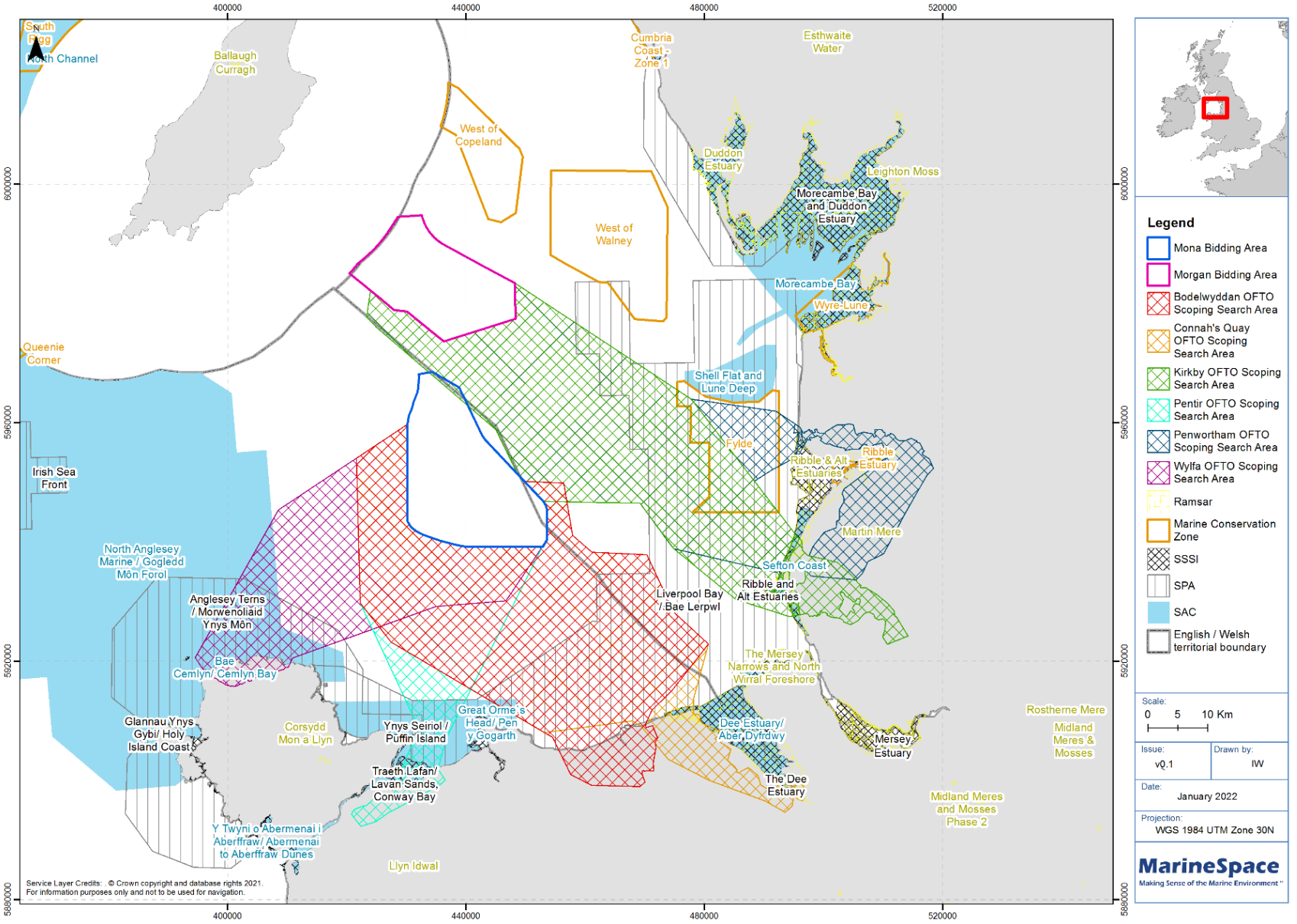
The following mitigation measures and environmental best practice will be adhered to throughout the survey work to minimise risk to the marine environment and designated sites:

- Relevant Guidance for Pollution Prevention (GPP) including PPG 6: Works and maintenance in or near water;
- All equipment associated with the works will be removed on completion of the works;
- Bunding, storage facilities and spill kits will be employed to contain and prevent the release of fuel, oils and chemicals associated with the equipment into the marine environment;
- Coatings and treatments will be suitable for use in the marine environment and are used in accordance with best environmental practice;
- All equipment, materials, machinery and PPE used will be in a clean condition prior to their arrival on site, and upon removal from site, to minimise risk of introducing non-native species into the marine environment;
- Sample locations will be planned and a drop down camera/ video will be utilised before the grab sample is taken;
- A magnetometer will be deployed prior to sampling to ensure that the seabed is clear of Unexploded Ordinance (UXOs) and/ or debris;
- No sampling will be undertaken in areas identified as potential Annex I habitat;
- Adherence to Welsh Offshore Marine Plan Area policies and objectives; and
- Use of suitably qualified marine mammal observers (MMO) during daylight and passive acoustic monitoring (PAM) systems where required.

The surveys will be undertaken in accordance with the JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys (JNCC, 2017).

Given the number of samples, their limited size and the types of survey works to be undertaken over a wide area, alongside best practice ways of working and mitigation measures, it is not anticipated that likely significant effects to any of the designates sites or features outlined in Table 5.1 in will occur.

Figure 5.1. Survey area in relation to designated sites


400000
440000
480000
520000
6000000
5960000
5920000
5880000
South Rigg
North Channel
Ballaugh Curragh
Cumbria Coast Zone 1
Esthwaite Water
West of Copeland
West of Walney
Duddon Estuary
Leighton Moss
Morecambe Bay and Duddon Estuary
Morecambe Bay
Wyre-Lune
Queenie Corner
Shell Flat and Lune Deep
Fylde
Ribble & Alt Estuaries
Ribble Estuary
Irish Sea Front
Martin Mere
North Anglesey Marine / Gogledd Môn Forol
Sefton Coast
Ribble and Alt Estuaries
Liverpool Bay / Bae Lerpwl
Anglesey Terns / Morwenoliaid Ynys Môn
The Mersey Narrows and North Wirral Foreshore
Bae Cemlyn/ Cemlyn Bay
Rostherne Mere
Midland Meres & Mosses
Glannau Ynys Gybi/ Holy Island Coast
Corsydd Môn a Llyn
Great Orme's Head/ Pen y Gogarth
Ynys Seiriol / Puffin Island
Dee Estuary/ Aber Dyfrdwy
Mersey Estuary
Traeth Lafan/ Lavan Sands, Conway Bay
The Dee Estuary
Midland Meres and Mosses Phase 2
Y Twyni o Abermenai i Aberffraw/ Abermenai to Aberffraw Dunes
Llyn Idwal
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Legend
Mona Bidding Area
Morgan Bidding Area
Bodelwyddan OFTO Scoping Search Area
Connah's Quay OFTO Scoping Search Area
Kirkby OFTO Scoping Search Area
Pentir OFTO Scoping Search Area
Penwortham OFTO Scoping Search Area
Wylfa OFTO Scoping Search Area
Ramsar
Marine Conservation Zone
SSSI
SPA
SAC
English / Welsh territorial boundary
Scale:
0 5 10 Km
Issue: v0.1
Drawn by: IW
Date: January 2022
Projection: WGS 1984 UTM Zone 30N
MarineSpace
Making Sense of the Marine Environment

6. Navigation and other sea users

The Maritime and Coastguard Agency (MCA) and Trinity House have been consulted regarding the proposed environmental, geophysical and geotechnical surveys and the MCA have provided best practice advice.

The works will adhere to the following MCA advice:

1. Comply with all maritime safety related legislation and guidance, including COLREGs;
2. Issue local notification to marine users - including fisherman's organisations, neighbouring port authorities and other local stakeholders - to ensure that they are made fully aware of the activity; and
3. Notify HM Coastguard, in this case zone31@hmcg.gov.uk and zone32@hmcg.gov.uk of the works prior to commencement.

7. Archaeology

The relevant archaeological bodies[1] have been consulted regarding the proposed geophysical, geotechnical and environmental surveys. Gwynedd Archaeological Trust and Clwyd-Powys Archaeological Trust had no additional comments at this time given the offshore nature of the surveys. The Royal Commission for Ancient Historic Monuments Wales advised that reference is made to the most recent UK Hydrographic Office (UKHO) data to identify known shipwreck sites and these be avoided where possible.

Best practice archaeological guidance will be adhered to minimise the risk to sites of archaeological interest. These include:

- Archaeological desk-based assessment to inform a Written Scheme of Investigation (WSI) by the survey contractor;
- English Heritage (2013) Marine Geophysics Data Acquisition, Processing and Interpretation: Guidance Note;
- Standard Guidance for Archaeological Geophysical Survey (CifA, 2020);
- Wessex Archaeology (2007) Historical Environment Guidance for the Offshore Renewable Energy Sector (COWRIE); and
- Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector (Gribble and Leather, 2011).

Although unlikely given the nature of the survey works, should any artefacts be recovered during the survey activities, these will be retained and a notification reported through the Portable Antiquities Scheme, including the location of the find. This will be detailed within the WSI.

[1] Clwyd-Powys Archaeological Trust, Gwynedd Archaeological Trust and Royal Commission for Ancient Historic Monuments Wales.

8. References

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