Port of Mostyn

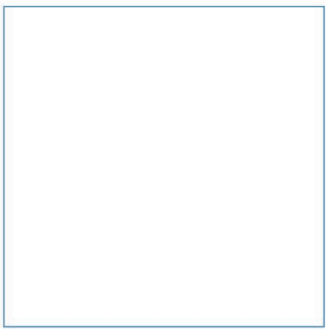
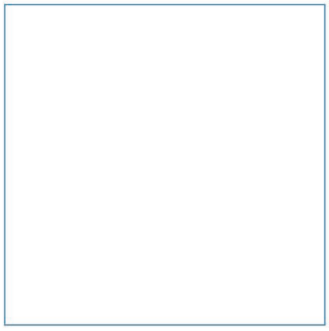
Mostyn Energy Park Extension

Environmental Statement

Chapter 2: Proposed Development

December 2022



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		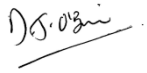

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Notice

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2.1 Introduction

This chapter is sub-divided into a number of sections. Section 2.2 explains the need for the Mostyn Energy Park Extension (MEPE) Project whilst Section 2.3 outlines the alternative ways in which this need could be met and why the proposed development is being taken forward by the Port of Mostyn. Section 2.4 provides a description of the key elements of the MEPE Project.

In summary, the rationale for the MEPE Project is based upon the need for the Port of Mostyn to deliver infrastructure upgrades to enable it to support and service the current and anticipated future growth in the offshore wind industry off the northern coast of Wales and in the Irish and Celtic Seas.

The proposed development will enable the Port of Mostyn to expand and enhance its current offering to the offshore wind sector, to provide construction, decommissioning, operations, maintenance and support facilities to meet both existing and future customer demand at the Port.

The advent of newer and larger wind turbines has made the existing facilities' (which have in the past serviced a number of wind farms) too small to cope with the larger vessels needed to build these wind turbines. The existing quay is too short to accommodate the required large jack-up barge and long blade/pile delivery vessel for these wind farm construction operations, as well as the existing fleet of Crew Transfer Vessels (CTVs).

2.2 The need for the MEPE Project

2.2.1 The significance of offshore wind

The UK has set a world–leading net zero emissions target, making it the first major economy to do so. The obligation to achieve net zero carbon emissions by 2050 is included in the Climate Change Act 2008 (2050 Target Amendment) Order 2019. To help achieve this, the UK Government has put, and is putting, in place various strategies and policies, including those set out in the recently published Energy White Paper (BEIS, 2020a).

In November 2020, the UK Government published 'The Ten Point Plan for a Green Industrial Revolution' (BEIS, 2020b) to lay the foundations to position the UK as a world leader of green technology and finance. The Plan sets out how the UK Government sees the country "*building back better, supporting green jobs and accelerating the path to net zero*". Amongst other things, the Plan reiterates that the UK is committed to tackling greenhouse gas emissions and that there is a need to switch to green technologies. Although this will only ultimately be achieved alongside other countries, the Plan sees Britain position itself as a leader in developing these green technologies.

Point 1 of the Plan seeks to advance the development of offshore wind. It is recognised that offshore wind is a vital source of renewable energy for the UK's economy with the UK already leading the world in this form of energy generation. This is also acknowledged in the Welsh National Marine Plan (WNMP) which states that "*Offshore wind has significant potential to contribute to renewable energy targets during the lifetime of this Plan whereas other technologies may take time to develop and may make a more limited contribution*" (Welsh Government, 2019 page 97).

Point 1 of the Ten Point Plan for a Green Industrial Revolution highlights that the UK Government's support for the offshore wind industry has seen the cost of offshore wind fall by two thirds in the last five years. Within point 1 of the Plan, the UK Government sets out an aim that the offshore wind sector should be producing 40 GW of energy by 2030, described as a quadrupling of current output. The Plan suggests that this target could encourage £20 billion of private investment into the UK and could double the number of jobs in the sector.

The Energy White Paper, which builds on the Ten Point Plan, recognises that energy is *"integral to everything we do, from work, to leisure, to just relaxing at home"* (BEIS, 2020a, page 20). The Paper builds on the UK Government's commitment to 'Transform Energy' by building a *"cleaner, greener future for our country, our people and our planet"* (BEIS, 2020a, page 4). It sets out the policy to put the country on course for net zero emissions.

The White Paper explains that to minimise the risk of dangerous climate change, the landmark Paris Agreement of 2015 aims to halt global warming at well below 2°C. However, the White Paper further indicates that, at a global scale, we are not presently on track to reach this temperature goal, and in order to do so, the world must collectively and rapidly reduce global emissions to net zero over the next 30 years (BEIS, 2020a, page 5).

Whilst recognising the steps that have been taken to decarbonise the UK's energy system, the Paper also makes clear that there is still much more to do and that decarbonising the energy system by 2050 will involve replacing, as far as it is possible to do so, fossil fuels with clean energy technologies such as renewables, nuclear and hydrogen (BEIS, 2020a, page 9).

These aims are also reflected in the Energy – Low Carbon Sector Objective 1 of the WNMP which is "*To contribute significantly to the decarbonisation of our economy and to our prosperity by increasing the amount of marine renewable energy generated*" (Welsh Government, 2019, page 96). Policy ELC_01b that falls under this objective "*encourages relevant public authorities and industry to collaborate to better understand and identify future opportunities for new development, including working through the Offshore Energy Strategic Environment Assessment (OESEA) and with The Crown Estate. Given the extensive wind resource, the geography of the seabed, developing technologies and the policy need for an increase in renewable energy generation, there is good opportunity in the Plan area for further offshore wind developments and these are encouraged during the lifetime of this Plan. Opportunities for both extending existing developments and for bringing forward new sites are encouraged. It is anticipated that the initial focus for offshore wind will be fixed foundation technologies but that within the lifetime of this Plan floating technologies may also become commercially viable and should be progressed where appropriate*" (Welsh Government, 2019, page 100).

The White Paper includes a clear commitment to increase offshore wind capacity as part of this drive to transform the energy system and its shift to clean energy technologies. It reiterates that by 2030 the UK Government plans to quadruple offshore wind energy capacity (BEIS, 2020a, page 12) to 40 GW – enough to power every home in the UK (BEIS, 2020a, page 3). To support the growth of the offshore wind industry, the UK Government indicate that, amongst other things, it will use the 'Offshore Wind Sector Deal' to ensure that domestic deployment creates jobs and raises skills levels across the country (BEIS, 2020a, page 55).

The current significance of the offshore wind industry is also recognised by the UK Government. The 'Industrial Strategy - Offshore Wind Sector Deal', published in March 2019 (BEIS, 2019) and updated in March 2020 (BEIS, 2020c), identifies that the offshore wind sector is a UK success story. The UK has the largest installed capacity of offshore wind in the world and the offshore wind sector has thrived, delivering ever larger projects to predictable timescales, at lower costs whilst also creating skilled jobs (BEIS, 2019, page 2). Since the publication of the Sector Deal, the costs of offshore wind have continued

to fall (BEIS, 2020c). This is also recognised in the WNMP which states on page 96 that "*Offshore wind energy is a proven and strategically important energy technology and the costs of deployment are decreasing rapidly, making this a viable and attractive renewable energy option for Wales, with considerable scope for further large-scale offshore wind activity*".

The current importance of the offshore wind sector is similarly set out in 'The Ten Point Plan for a Green Industrial Revolution' (BEIS, 2020b), which identifies that *"Offshore wind is a critical source of renewable energy for our growing economy, with the UK already leading the world"* (BEIS, 2020b, page 8).

Evident within all the policies and plans noted above is the current significance of the offshore wind industry and its critical role over the next few decades in helping to deliver the UK's transition to clean energy technologies and thereby put the country on course for net zero emissions.

Wales was an early adopter of offshore wind, with North Hoyle being only the second offshore wind project to be commissioned in the UK followed by other developments including the larger scale Gwynt y Môr (576 MW) windfarm. Offshore wind currently provides the largest single contribution to marine renewable electricity in Wales with Gwynt y Môr capable of powering around 400,000 homes (Welsh Government, 2019, page 97). Meanwhile, the Energy Generation in Wales 2017 report identifies floating wind technology as offering potential for innovation, with the deeper waters of the Celtic Sea cited as possible sites for deployment (Welsh Government, 2017, page 29). The Gwynt y Môr Extension referred to as the Awel y Môr (AyM) Wind Farm Project submitted its application for development consent in June 2022. AyM will comprise an array of offshore Wind Turbine Generators (WTGs) in Welsh waters with an overall capacity greater than 350 Megawatts (MW).

Of particular significance to meeting the UK's net zero targets, is The Crown Estate's Offshore Wind Leasing Round 4 which is creating the opportunity for at least 7 GW of new offshore wind projects in the waters around England and Wales by the end of the decade (The Crown Estate, 2022). Round 4 has the potential to further strengthen the UK's world leading offshore wind sector, create jobs and investment, and deliver green, reliable, affordable energy to millions more homes. The projects identified through this process will join a strong pipeline of UK offshore windfarms already in operation, construction and planning, and will help put the UK on track to meet the government target for 40 GW of offshore wind capacity by 2030.

The North Wales and Irish Sea Bidding Area, comprising the North Wales and Irish Sea region, and the northern part of the Anglesey region, covers an area of approximately 8,500 km^2 (The Crown Estate, 2022). The Bidding Area has an average water depth of 34 m, with most of the bidding area within the 30 m to 50 m depth range, making it well suited to lower cost, fixed foundation offshore wind technologies.

Alongside offshore wind leasing, The Crown Estate has launched a partnership, to unlock offshore energy ambitions and protect the nation's marine environment, known as the Offshore Wind Evidence and Change Programme (The Crown Estate, 2022). This programme, is being delivered in partnership with Department for Business, Energy and Industrial Strategy (BEIS) and the Department for Environment, Food and Rural Affairs (Defra), and in collaboration with a wide range of other stakeholders. It will work to tackle the challenges posed by overlapping and conflicting demands for seabed space, providing the evidence for the future designs of productive seas in England and Wales. It will also help tackle the cumulative environmental impacts of offshore wind, and its effects on users of the sea and onshore communities. The ultimate aim is to facilitate the coordinated growth of the offshore wind sector, whilst supporting action to secure clean, healthy, productive and biologically diverse seas.

2.2.2 The significance of providing for the operation and maintenance (O&M) requirements of the offshore wind industry

Once the construction of an offshore windfarm is complete and the turbines are operational, it is necessary for the infrastructure to be regularly monitored, serviced and maintained to ensure that it continues to generate an efficient and reliable electricity supply. O&M activities are required to ensure safe operation, to maintain physical integrity of the wind farm assets and to optimise electricity generation.

Operational support is required 24 hours a day seven days a week, 365 days a year and includes both proactive monitoring and reactive response activities, for example where unexpected events and faults are identified and rectified. Maintenance and service activities includes scheduled and unscheduled activities and requires the regular mobilisation of staff and equipment to the wind turbines.

In terms of turbine maintenance and service, activity can be categorised as either preventative or corrective. Preventative maintenance is carried out according to scheduled services whereas corrective maintenance covers unscheduled interventions in response to events or failures and can be proactive i.e., before failure occurs. As preventative maintenance consists of planned activities, the bulk of this work is typically undertaken during periods of low wind speed to minimise the impact on production. Important factors in shaping O&M activities include:

(i) Ensuring that the individual wind turbines and the wind farm as a whole remain operational to generate electricity;
(ii) Ensuring that the necessary workforce can access the turbines and infrastructure to carry out required O&M activities. Factors such as transit time, the time taken to travel to and from the wind farm, and the time period over which a turbine can be safely accessed, which depends on sea and weather conditions, are critical to this; and
(iii) Ensuring that costs are minimised as far as possible. As a significant contributor to the overall cost of the energy being produced, reducing the cost of O&M activities and services and optimising asset performance have important roles to play to help drive down the cost of energy for the end-consumer.

The majority of O&M activities rely upon marine vessels such as Service Operation Vessels (SOVs) and Crew Transfer Vessels (CTVs) to transport technicians, as well as equipment and consumables from a land base to where they are needed offshore.

Due to their location within the marine environment, it is necessary for offshore windfarms to be linked to a terrestrial base. As described above, the O&M activities and services must operate on a lean model to ensure the overall cost of generation and supply to the consumer is competitive. Consequently, the ability for the land base to service the needs of the windfarm quickly and efficiently forms an important part of the overall consideration as to where the land base is located.

Such a base must have the necessary 24 hour marine access to accommodate the vessels, as well as the appropriate land side facilities to service the vessels and the wider O&M activities. As a result, it is, therefore, necessary for the O&M base to be located within an existing port or at a site where relevant port facilities can be developed.

In terms of the need for such O&M facilities, the Port currently hosts three O&M bases. The National Policy Statement for Ports (NPSfP) (DfT, 2012), which whilst directed principally at Nationally Significant Infrastructure Projects (NSIPs) also, as discussed below, applies to port development projects that fall beneath the NSIP statutory threshold, and does state that the decision-maker should accept the need for future capacity to *"support the development of offshore sources of renewable energy"*

(paragraph 3.5.1). The Policy Statement continues at paragraph 3.5.2, that the decision-maker *"should start with a presumption in favour of granting consent for ports development"*.

In terms of the decision-maker, paragraph 1.6.1 of the NPSfP makes it clear that the policy statement is relevant for applications in Wales and in paragraph 1.6.2 notes that "*In considering any applications relating to Wales, the decision-maker should additionally take account of the Welsh Government's policies and plans in these areas*".

As the offshore wind sector grows, so will the demand for the components and facilities that are required to build, operate, maintain and service a windfarm. There is a clear need for additional O&M facilities to support the offshore wind industry to meet the planned growth of this sector over the next decade and beyond. Catapults Offshore Renewable Energy (ORE) Operations & Maintenance Centre of Excellence (OMCE) has been established to support the growth of a resilient UK O&M (Catapult ORE, 2022).

2.2.3 The significance of providing flexible, resilient and competitive port facilities in the right location that support the offshore wind industry

From the background provided in the preceding sub-sections, it is clear that the generation of offshore electricity relies upon a combination of the development of offshore windfarm infrastructure as well as O&M support networks to ensure that the windfarms, once constructed, continue to operate at the optimum level. The need for, and significance of, providing such supporting infrastructure is well accepted.

The National Policy Statement for Ports (NPSfP) (DfT, 2012), however, provides further advice and guidance of relevance to the provision of such supporting infrastructure and capacity at ports.

In the context of a broad recognition that UK ports operate in a free market environment (DfT, 2012, paragraph 3.3.1), the UK Government highlights that ports have a vital role to play in the construction and servicing of offshore energy installations (DfT, 2012, paragraph 3.1.5) and that the need for new port infrastructure depends not only on overall demand, but also on:

(i) The need to retain flexibility that ensures that port capacity is located where it is required;
(ii) The need to ensure effective competition in port operations; and
(iii) The need to ensure effective resilience in port operations (DfT, 2012, paragraph 3.4.1).

In respect of the location of development, the UK Government makes it clear that it does not want to dictate where port development should occur. Rather, because port development must be responsive to changing commercial demands, the UK Government considers that the market is the best mechanism for getting this right (DfT, 2012, paragraph 3.4.12). The importance of providing capacity in the right place, for effectiveness and efficiency reasons, is also highlighted (DfT, 2012, paragraph 3.4.11).

The UK Government also makes it clear that it supports competition between ports because this drives efficiency and lowers costs for industry and consumers (DfT, 2012, paragraph 3.4.13). It further details that this requires ports to operate at efficient levels, which is identified as not the same as operating at full physical capacity.

The UK Government highlights the importance of having resilient port capacity and indicate that such resilience is provided most effectively as a by-product of a competitive ports sector.

In reaching conclusions on the need for new port infrastructure, the UK Government conclude that excluding the possibility of providing additional capacity would be an outcome strongly against the public interest (DfT, 2012, paragraph 3.4.16).

The Energy White Paper includes the target to quadruple offshore wind capacity and recognises that this will also require investment at ports (BEIS, 2020a). The diversification of ports into new activities and the need for ports to adapt and maximise their land banks is recognised in the Government's Maritime 2050 Strategy (DfT, 2019).

The Port of Mostyn is ideally placed to support the offshore wind sector. The Port benefits from a number of physical attributes that make it an attractive site for supporting the construction of offshore wind farms and the location of O&M facilities. The WNMP recognises the significance of the Port of Mostyn in supporting offshore wind construction and services and identifies Mostyn as one of the ports in Wales that have the greatest competitive advantage in exploiting opportunities arising from low carbon and renewable energy generation (Welsh Government, 2019, page 124). Furthermore, the ports and shipping sector objective of the WNMP is to safeguard established shipping routes and support sustainable development in the shipping and ports sector (Welsh Government, 2019, page 12). The WNMP states that "*Port development must be responsive to changing commercial demand*" (Welsh Government, 2019, page 124). Policies P&S_01 and P&S_02 recognise this requires flexibility to ensure that port capacity is located where it is required in order to ensure effective competition and resilience in port operations.

As a result of its attributes, the Port of Mostyn already provides support to a number of offshore windfarms. Commencing in 2004, the first two major offshore windfarm construction projects in UK waters were undertaken using the Port of Mostyn. Since that time, seven Irish Sea offshore windfarm projects have been undertaken from the Port namely: Burbo Bank in the River Mersey, Robin Rigg, located 98 nautical miles (NM) away in the Solway Firth, and Walney 1 and Walney 2 off the Lancashire coast.

Off the Welsh coast, both the North Hoyle and Rhyl Flats projects were constructed from Port of Mostyn. The seventh and largest project to be undertaken to date is the 160-turbine Gwynt y Môr windfarm located approximately 15 miles off the Welsh coast.

In addition to being a windfarm construction port, Mostyn is also the O&M base for RWE Npower's North Hoyle, Rhyl Flats and Gwynt y Môr windfarms for the duration of their 25 years operational lifespan.

Windfarm developers who have used Mostyn include RWE Npower and Dong Energy; the major contractors and turbine manufacturers such as Siemens Wind Power A/S and Vestas Wind Technology; and the major construction contractors Van Oord and MT Hojgaard A/S.

Overall, the Port of Mostyn is in the right location to provide the flexible, efficient and competitive facilities required to the growth in offshore wind within the area.

2.2.4 The significance of reducing the costs of offshore wind energy

Throughout the various policy, guidance and strategy documents referred to in the sections above, considerable emphasis is placed on the importance of energy supplies being affordable. For example, the recently published Energy White Paper identifies that we all rely on secure and affordable energy every day and makes clear that the UK Government is committed to ensuring that the transition to net zero is fair and affordable and sets out actions for a low-cost, clean electricity system by 2050 (BEIS, 2020a).

With the UK Government working in partnership with the offshore wind sector to increase energy generation, costs have fallen faster than could have been envisaged 10 years ago (BEIS, 2019). For example, offshore wind prices in renewable Contracts for Difference auctions have fallen from £120/MWh in 2015 to around £40/MWh in 2019 (BEIS, 2020a, page 3).

The Offshore Wind Sector Deal suggests that the fall in costs is *"driven by competitive allocation of support and underpinned by long-term policy certainty, which enabled the sector to invest in technological innovation, and benefit from learning by doing and reductions in the cost of capital due to the risk profile of this technology coming down"* (BEIS, 2019, page 27).

In addition to technological developments and the reduction in the cost of capital, the reduction in costs has also been influenced by competition between developers.

The drive to reduce costs has been successful across the industry as a whole, which is demonstrated by recent examples of contracts to build offshore windfarms being awarded in the absence of any subsidies on top of the wholesale energy price.

As described in the preceding sections of this chapter, O&M activities have a key role to play in the overall cost of offshore wind energy. In this regard, the industry within the UK considers that offshore wind costs can and need to be reduced yet further. Ongoing technological innovation and collaboration across the sector are seen as the key ways in which costs can further be reduced over the next decade. Ongoing cost efficiencies, cost reductions and economies of scale are all potential opportunities helping to lead to the industry becoming entirely subsidy free.

It is clear from the preceding sub-sections that supporting port activities, located in the right place and available at the right time, have a key role to play in delivering overall value to the offshore wind energy sector. It has already been identified that the Port of Mostyn forms a key player in supporting the growing number of offshore windfarms in the area and is able to enhance its offer to provide even further benefits.

2.2.5 The significance of achieving policy aims and objectives

There is clear policy support for the ongoing development of the offshore wind industry to support the UK's decarbonisation and transition to net zero emissions to help fight climate change and deliver clean energy growth.

As set out in preceding sub-sections, the role of ports in supporting the growth of the offshore energy industry is strongly supported by policy and guidance. For example, the NPSfP (DfT, 2012) identifies the essential role of ports in the UK economy, specifically identifying that "*Ports have a vital role….in the construction and servicing of offshore energy installations"* (paragraph 3.1.5). The NPSfP goes onto say that ports will need to be responsive to changes in different types of energy supply needed and highlights the need for facilities to support the development and maintenance of offshore renewable sites (paragraph 3.1.5). Similarly, the Maritime 2050 strategy (DfT, 2019) highlights that ports, which operate in a competitive market, are diversifying into new activities and recommends that ports actively engage in the energy sector to identify new market opportunities.

The WNMP identifies the significance of the offshore wind industry in the area and the importance of this industry to the growth and regeneration of Wales. The achievement of the aims and the objectives of relevant policy, at both the national and local level, is itself significant and in the public interest.

2.3 Consideration of alternatives

The Marine Works EIA Regulations make clear that, amongst other things, an ES must include, *"a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment."*

In addition, the NPSfP (DfT, 2012) sets out (at paragraph 4.9.3) a series of principles to guide the consideration of alternatives by the relevant decision maker. These principles are reproduced for completeness in Table 2.1. Certain aspects clearly relate specifically to the process and procedures that need to be followed in applying for consent for a port project which constitutes a NSIP. That said, as noted above, the NPSfP also applies to port development projects that fall beneath the NSIP statutory threshold.

Table 2.1. The NPSfP principles to guide decision makers consideration of alternatives

Guiding Principles	
1.	The consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner.
2.	Whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security and climate change benefits) in the same timescale as the proposed development.
3.	An application should not be rejected for development on one site simply because fewer adverse impacts would result from developing similar infrastructure on another suitable site, and regard should be had as appropriate to the possibility that other suitable sites for port infrastructure of the type proposed may be needed for future proposals.
4.	Alternatives not among the main alternatives studied by the applicant (as reflected in the ES) should only be considered to the extent that the decision maker thinks they are both important and relevant to its decision.
5.	If – in respect of a port development proposal that constitutes a Nationally Significant Infrastructure Project – the relevant decision maker concludes that a decision to grant consent to a hypothetical alternative proposal would not be in accordance with the policies set out in the NPSfP, the existence of that alternative is unlikely to be important and relevant to the decision.
6.	Suggested alternative proposals which mean the primary objectives of the application could not be achieved, for example because alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the decision.
7.	Potential alternatives to a proposed development should, wherever possible, be identified before an application is made in respect of it. Where, therefore, an alternative is first put forward by a third party after an application has been made, the person considering that application may place the onus on the person proposing the alternative to provide the evidence for its suitability as such, and the applicant should not necessarily be expected to have assessed it.

Taking into account these legislative and policy requirements this part of the chapter provides a description of the consideration which the Port of Mostyn has given to potential alternatives to meeting the need that has been identified and indicates the reasons why the MEPE Project has been selected as the best solution.

2.3.1 The approach taken to the consideration of alternatives

A staged approach has been taken to the consideration of possible alternative solutions.

The first stage in the process consisted of the identification and analysis of potential broad options that might be available to meet the need. The result of this analysis was the identification of a preferred broad option to be taken forward to the next stage.

The second stage consisted of the identification and analysis of initial potential alternative solutions to meeting the need that fall within the parameters of the preferred broad option identified at the first stage. This has involved an identification of the main functional requirements which any potential alternative solution would have to meet. From the analysis undertaken a preferred solution was identified.

2.3.2 Stage 1 – Identification and analysis of potential broad options

Consideration was initially given to whether it was possible to expand and enhance the offering of the Port of Mostyn to the offshore wind sector through the use of facilities within the Port as they currently exist. This option was, however, considered to be operationally impracticable in that existing facilities within the Port are either not capable of serving the offshore wind sector, are in use for another port activity or contractually already committed to a specific offshore energy or other customer.

This scenario, which effectively represents a 'do nothing' scenario, would mean that the identified need set out in Section 2.2 could not be met.

Since the offshore energy sector has to take a commercial view, the 'do nothing' course of action would inevitably result in the Port of Mostyn being less attractive to the market. In the context of an acceptance at the national level that port facilities such as the Port of Mostyn have a vital role in the construction and servicing of offshore wind farms, that port facilities operate in a market led industry where they need to be competitive, resilient and in locations able to efficiently and effectively serve the needs of the market, and that there is a need for future capacity to support the development of offshore wind energy, adopting a 'do nothing' strategy at the Port of Mostyn is considered, to quote national ports policy, "*an outcome strongly against the public interest*" (DfT, 2012, paragraph 3.4.16).

For the reasons summarised above, it is, therefore, concluded that to adopt a do-nothing strategy is neither a realistic nor operationally sensible option.

For similar reasons, the potential development of offshore wind support facilities at locations elsewhere other than at the Port of Mostyn is not considered to be a realistic broad alternative option to meeting the need which has been identified.

Amongst other guiding principles on the consideration of alternatives, the NPSfP (see Table) clearly states that *"suggested alternative proposals which mean the primary objectives of the application could not be achieved .... can be excluded on the grounds that they are not important and relevant to the decision"* (DfT, 2012, paragraph 4.9.3). Developing offshore wind support facilities on other sites away from the Port of Mostyn would not meet the primary objective of the proposals for which consent is being sought.

That is not to say, however, that facilities at other Port locations will not also be needed to serve the overall future market demand. Future offshore energy market demand in and around the Irish and Celtic Seas area is likely to be significant and require various facilities to be provided at different ports.

A suggestion that an alternative site or location should be developed as an alternative to facilities within the Port of Mostyn also runs counter to the market led, competitive and resilient aspects of national ports policy, which are outlined in Section 2.2.3.

From the analysis carried out it was concluded, therefore, that the only broad option available to meet the identified need was to develop further offshore wind support facilities within the Port of Mostyn.

2.3.3 Stage 2 – Identification and analysis of potential alternative solutions within the Port of Mostyn

The next stage in the consideration of alternatives was the identification of potential solutions that fall within the parameters of developing facilities within the Port of Mostyn.

In order to be able to identify whether there were any potential solutions within the Port of Mostyn, the functional requirements which any potential solution should provide were identified at a high level.

In simple terms, a port's ability to meet demand is the measure of capacity required by the port's existing or potential customers. To better understand the likely level of future demand, the Port of Mostyn consulted with the market in the form of both existing and potential future offshore wind developers and turbine suppliers for a number of Welsh coast and Irish Sea fixed foundation and floating offshore windfarm projects.

Due to the extent of existing activities and operations within the Port of Mostyn, the only area where the functional requirements for the offshore wind sector could potentially be provided is within the existing harbour on the eastern and south-eastern side of the breakwater.

Preliminary engineering design work has considered the following alternative options for the proposed development:

- Option 1 – a complete new quay wall of 500 m length; and
- Option 2 – the replacement of the existing 200 m Roll-on Roll-off (Ro-Ro) berth with a new 360 m quay and retention of 200 m of existing quay.

The advantage of Option 1 is that the entire length of quay can be designed for deeper drafted vessels which would maximise operational flexibility. From an environmental perspective, however, it would involve a larger reclamation and area of habitat loss, and a greater volume of capital dredging and infill material. As a result, it would be a more costly and environmental damaging option and would result in significant disruption to existing port operations during the construction works.

The 200 m length of existing quay that would be retained by Option 2 will not be as deep as the new quay and, therefore, limit operational flexibility compared to Option 1. However, it will involve a smaller reclamation and less dredging/infill material, thereby minimising the footprint and scale of the works and associated environmental impact. It will also result in a less costly option that will be quicker to build and result in less disruption to the existing facility during the construction works. Option 2 is, therefore, the preferred option that is being taken forward for the MEPE Project.

2.4 Proposed development

The key components of the proposed development are detailed in the Project Methodology Chapter but in summary, comprise the following:

- Construction of 360 m length of new quay, involving a reclamation (approximately 3.5 ha) to provide a continuous berthing frontage for the construction and O&M requirements of the offshore wind sector;
- Capital dredging to create a new berth pocket alongside the new quay wall, dredge the berths along the existing quay and the main navigation channel;
- Reuse a selected proportion of the suitable capital dredge arisings as engineering fill material for the reclamation and dispose of the remainder at the existing Mostyn Deep disposal site (IS102);
- Potential relocation of four existing dolphins (piles) to create a berth for Service Operation Vessels (SOVs) to provide O&M requirements of the offshore wind sector;
- Potential construction of a Ro-Ro pontoon linkspan;
- Maintenance dredging for the new berth, existing berths, navigational channel and harbour area;
- Disposal of maintenance dredge material at the existing marine disposal sites at Mostyn Deep (IS102) and Mostyn Breakwater (IS103) and/or reused as is currently permitted under the existing maintenance dredge and disposal marine licences;
- Use of reclaimed area as a storage/laydown area; and
- Providing environmental enhancements to support natural mudflat restoration.

2.5 References

BEIS (2019) (updated in 2020). Policy Paper Offshore wind: Sector Deal. Available at: https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal#further-information (accessed October 2022).

BEIS (2020a). Energy White Paper: Powering Our Net Zero Future. HMSO, London.

BEIS (2020b). The Ten Point Plan for a Green Industrial Revolution. BEIS, London. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936567/10_POINT_PLAN_BOOKLET.pdf (accessed October 2022)

BEIS (2020c). Policy Paper Offshore wind: Sector Deal – one year on: https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal-one-year-on (accessed October 2022)

Catapult ORE (2022). Operations & Maintenance Centre of Excellence. Available at: https://ore.catapult.org.uk/wp-content/uploads/2020/10/9174-Catapult-OMCE-Brochure-V4.pdf (accessed October 2022)

DfT (2012). National Policy Statement for Ports (NPSfP)

DfT (2019). Maritime 2050 – Navigating the future. DfT, London

The Crown Estate (2022). Offshore Wind Leasing Round 4. Available at: https://www.thecrownestate.co.uk/en-gb/what-we-do/on-the-seabed/offshore-wind-leasing-round-4/ (accessed October 2022)

Welsh Government (2017) Energy Generation in Wales 2017. Available at: https://www.regen.co.uk/publications/energy-generation-in-wales-2017/ (accessed October 2022)

Welsh Government, 2019). Welsh National Marine Plan. Available at: https://gov.wales/sites/default/files/publications/2019-11/welsh-national-marine-plan-document_0.pdf (accessed October 2022).

2.6 Abbreviations/Acronyms

AyM	Awel y Môr
BEIS	Department for Business, Energy & Industrial Strategy
CTV	Crew Transfer Vessel
EIA	Environmental Impact Assessment
ELC	Energy Low Carbon
ES	Environmental Statement
GW	Gigawatt
HMSO	Her Majesty's Stationary Office
MEPE	Mostyn Energy Park Extension
MV	Motor Vessel
MW	Megawatt
NM	Nautical Miles
NPSfP	National Policy Statement for Ports
NSIP	Nationally Significant Infrastructure Projects
O&M	Operation and Maintenance
OESEA	Offshore Energy Strategic Environment Assessment
OMCE	Operations & Maintenance Centre of Excellence
ORE	Offshore Renewable Energy
SOV	Service Operation Vessels
UK	United Kingdom
WNMP	Welsh National Marine Plan
WTG	Wind Turbine Generator

Cardinal points/directions are used unless otherwise stated.

SI units are used unless otherwise stated.

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