OCEAN WINDS

Date: 22/07/2020

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General Remarks

Ocean Winds (OW) welcome the opportunity to respond to the consultation to inform a grid development policy for offshore wind in Ireland.

About OW

OW is a 50:50 offshore wind joint-venture, owned and created by EDPR and ENGIE in 2019. Both companies believe that offshore wind energy is becoming an essential part of the global energy transition, leading to the sector's rapid growth and increased competitiveness. That is why they have included all their existing and pipeline offshore portfolio in the new company.

OW has a strategic advantage and is well positioned to play a leading role in the offshore market. EDPR and ENGIE are combining their offshore wind assets and project pipeline in OW, starting with a total of 1.5 GW under construction and 4.0 GW under development, with the target of reaching 5 to 7 GW of projects in operation or under construction and 5 to 10 GW under advanced development by 2025. OW primarily targets markets in Europe, the United States and selected geographies in Asia, from where most of the growth is expected to come.

www.oceanwinds.com

About EDP Renewables (EDPR)

EDP Renováveis (Euronext: EDPR) is a global leader in the renewable energy sector and the world's fourth-largest wind energy producer. With a sound development pipeline, first class assets and market-leading operating capacity, EDPR has undergone exceptional development in recent years and is currently present in 14 international markets (Belgium, Brazil, Canada, Colombia, France, Greece, Italy, Mexico, Poland, Portugal, Romania, Spain, the UK and the US).

EDPR is committed to furthering social advances in terms of sustainability and integration. This is reflected by the inclusion of the company in the Bloomberg Gender Equality index and the fact that it has been certified as a Top Employer 2020 in Europe (Spain, Italy, France, Romania, Portugal and the United Kingdom), both of which recognize its employee-driven policies.

Energias de Portugal, S.A. ("EDP"), the principal shareholder of EDPR, is a global energy company and a leader in value creation, innovation and sustainability. EDP has featured on the Dow Jones Sustainability Index for 13 consecutive years.

About ENGIE

Our group is a global reference in low-carbon energy and services. Our purpose ("raison d'être") is to act to accelerate the transition towards a carbon-neutral world, through reduced energy consumption and more environmentally-friendly solutions, reconciling economic performance with a positive impact on people and the planet. We rely on our key businesses (gas, renewable energy, services) to offer competitive solutions to our customers. With our 170,000 employees, our

customers, partners and stakeholders, we are a community of Imaginative Builders, committed every day to more harmonious progress.
Turnover in 2019: 60.1 billion Euros. The Group is listed on the Paris and Brussels stock exchanges (ENGI) and is represented in the main financial indices (CAC 40, DJ Euro Stoxx 50, Euronext 100, FTSE Eurotop 100, MSCI Europe) and non-financial indices (DJSI World, DJSI Europe and Euronext Vigeo Eiris - World 120, Eurozone 120, Europe 120, France 20, CAC 40 Governance).

Grid Development Policy for Offshore Wind Consultation

This response sets out OW's position on the grid development policy to support offshore wind in Ireland. Through the adoption of a suitable grid development policy, OW believe Ireland can meet the national target of 5 GW offshore wind capacity installed by 2030, which will help reach the country's decarbonisation objectives. In order to meet Ireland's ambitious targets, all efforts should be made to expedite as many offshore opportunities in Ireland, and a suitable grid development policy is a key driver to achieving this objective.

The company welcomes the opportunity to engage with the Government of Ireland through this consultation response. As requested, the response follows the consultation structure around the preferred grid delivery model and the set questions provided in the documentation. We do however believe that there would be merit in further engagement around wider points and would welcome the opportunity for further engagement in due course.

Answers to consultation questions

1) ***With respect to key driver (i), cost levels, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

OW has reviewed the four models presented by Navigant in the report supporting the consultation and expressed the following views:

- **Model 1**: This option is the closest to OW's preferred model, with the exception of ownership of the transmission assets. Under EU regulations, a company cannot own both a generation and transmission assets. This law is the reason why in UK, developers are required to transfer the transmission assets within 18 months of reaching commercial operation date. Therefore this option is not legally acceptable and has not been deemed appropriate by OW. It is also noted that in regards to zone identification, it is apparent from the status given to the relevant projects that in these initial phases of offshore development this will be developer driven. OW assume that despite the progress on NMPF this will likely be the case for all fixed bottom development and other technology deployed until at least 2030.
- **Model 2:** We do not consider this model realistic, for the same reasons on zone identification noted above, with the current position also ensuring that developer's will drive the minimum distance from shore. It will of course remain that developers will need to provide adequate supporting documentation, and it will be up to the consenting process to determine the landscape and visual impacts of any scheme are acceptable. Furthermore this

model is also unviable due to the same competition law provisions noted above in regard to long term ownership. Therefore this model is also discounted.

- **Model 3:** Model 3 also suffers from the issues noted above. Furthermore it is considered that the state/ TSO have no demonstrable reasons to be involved in site selection or consenting, which should remain the domain of the developer.
- **Model 4:** This model has been adopted in various countries and has recently proven to be successful in Netherlands. However, OW would reiterate the points noted above, commenting that placing a state body in charge of the whole consenting process in Ireland is not the optimal solution, as it would likely result in delays due to additional legislative preparations and preliminary work and a significant increase in timing risk and cost to the developer. Additionally, to achieve the 5 GW target for 2030, it is already considered that the resources required will already place significant strain on a number of state bodies in Ireland and on the TSO. If elements of this process can be left to outside parties, this will ensure adequate resources can be focussed on the core tasks of these agencies. We therefore consider that the majority of this model is unviable. However we do consider the TSO/TAO ownership, and depending on physical jurisdiction, construction of the assets is a viable long term position that is supported.

OW preferred option would see (at a simplistic level) all preconstruction responsibilities given to the developers, assuming the current backdrop to opportunity identification. Overall, this approach is mostly aligned with what has been done in the UK which is, to date, the world's largest offshore wind market and the proposed approach is expected to help reach the lower levelized cost of energy (LCoE) possible. OW preferred option can be seen in Figure 1 below.

Wind Farm Development	Developer	Developer	Developer	Developer	Developer	Developer	Developer
Grid Development	TSO	TSO		Developer		Developer	Third Party

Figure 1 OW Preferred Model

OW acknowledge that state lead spatial planning offshore wind projects could be beneficial, but as noted it would now appear unviable to deliver such a complex process and still support the relevant projects/enduring projects which will be vital in delivering against the 2030 targets.

OW have proposed a variant grid delivery model summarised in Table 1. This grid delivery model is expected to offer the greatest chances to achieve the 2030 targets whilst looking at optimising the LCoE. It has been split in three categories including the offshore wind farm, the wind farm transmission asset and the onshore grid.

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Table 1: OW Grid Delivery Model

	Activity	Responsible Party
Offshore Wind Farm (WTG, FOU, IAC)	Zone Identification	Developer
	Minimum Distance from Shore	Developer
	Site Selection	Developer
	Site Investigation	Developer
	Permitting	Developer
	Construction	Developer
	Ownership	Developer
Wind Farm Transmission Assets (Onshore/Offshore Substations, Export cables)	Export Cable Route Identification	Developer
	Site Investigation	Developer
	Permitting	Developer
	Construction	Developer
	Ownership	Third party[1]
	O&M	Transmission System Owner (TSO)[2]
Onshore Grid	Reinforcement Planning	TSO
	Reinforcement Work	TSO
	Ownership	TSO

Zone identification, minimum distance from shore, site selection, site investigation and permitting: An experienced developer will be able to identify zones applying a number of environmental, social, commercial, and technical criteria, which will mitigate challenges to viability in later development stages (i.e. consenting, site conditions, technical). For example, as part of the new offshore wind leasing rounds in the UK (Round 4 and ScotWind), OW have performed preliminary site selection exercises in Scotland and England & Wales, prior to the formal areas being finalised and published by the seabed authorities . Preliminary sites were fed into the formal planning processes through consultation responses and participation to steering groups and eventually co-shaped the final areas allocated by the seabed authorities to align industry technical criteria with environmental limits.

Construction and ownership of wind farm: This is considered standard for the developer to build and own the windfarm asset, and we note this is the position reflected in all consultation models.

Export cable route identification, site investigation, permitting and construction: This can be split in two sections offshore and onshore. For the offshore activities, similarly to the windfarm asset, an experienced developer will be able to define an export cable route, perform the relevant survey work and secure permitting through identification of the key stakeholders and suitable mitigations. Additionally, having the developer doing this work will generate cost savings, which will help ensure the LCoE for the consumer in due course. It is recommended that the construction of the transmission asset is performed by the developer. Whilst this potentially limits the room for optimisation with nearby developments it ensures that the projects will not be constrained/curtailed

[1] Within a given period from COD, the developer will transfer the transmission assets to the TSO. 18 months in UK. The owner would be named the transmission asset owner (TAO)

[2] The TSO will be looking for a contractor to perform the O&M work.

due to insufficient export cable capacity and temporal mismatches between delivery of assets. An example of this issue can be observed in Germany, where the projects have experienced increased curtailment due to insufficient transmission capacity both onshore and offshore. This decision is further advisable for the Irish market that is expected to face a surge in the offshore wind capacity until 2030. A more optimised approach could be taken once the initial targets have been reached and the offshore wind projects installation pace reduces.

The TSO will be responsible for the onshore reinforcement works and the developer will be responsible for the offshore transmission assets. When designing a project, developer look to maximise the export cable capacity which leaves no spare capacity for other connections.

Lastly, having the offshore transmission assets built by the developers reduces the risk of grid connection delay which is seen as a key risk for investment decision. By taking into consideration the offshore wind global market, it is important for Ireland to be attractive in order to increase the chances of achieving the 2030 targets.

Transmission Assets Ownership: Due to EU regulations, a generator cannot own transmission assets. OW therefore consider the only viable ownership positions are for the transmission assets to be transferred to either the incumbent Transmission Asset Owner (TAO) or a third party following commercial operation date of the windfarm asset. By allowing for third party ownership a competitive tender process, ensuring a transparent transfer of value. This is aligned with the UK process, which has proven to be successful.

O&M: The O&M of the offshore transmission asset is to be performed by the owner. In the short term this is therefore likely to be the developer, but the long term embedded responsibility will sit with the owner – whether that is the TAO or other third party.

2) ***With respect to key driver (ii), environmental impact, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

The environmental impact of a project is decided by its size and location regardless of the model chosen. However, splitting the consenting process between two parties could lead to gaps and an inability to undertake a competent whole project environmental impact assessment. This could lead to a significant increase to the development risk for the project. Therefore, OW preferred option ensures that one actor is responsible for the whole consenting process.

3) ***With respect to key driver (iii), future proofing and technologies, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

The model proposed by OW is considered to be the best option to guarantee continuous innovation and use of state-of-the-art technologies and installation methodologies.

Developers through their presence in numerous international markets are aware of the latest innovative technologies and methodologies that will ensure the LCoE. Therefore, having the developer in charge of selecting the key equipment's and design for their project is deemed to be the most suited option to future proof grid development. It is also possible that their scalable order books will create cost reductions for these assets that would not be open to a single domestic entity.

Additionally, in a market where the government is defining specific requirements or constraints there is a possibility that these become obsolete in a short period of time and impact negatively on the industry. One example is the recent issues faced by the onshore wind industry in Ireland, where the limitations in maximum tip height have led to the impossibility of deploying larger WTGs, which has and kept the LCoE of onshore wind high compared to other European countries[3]. OW position would ensure that the developers have the option to use the latest technologies and installation methodologies available in the industry whilst still being required to carry out the standard permitting process. This option would allow the developer to aim to reduce the LCoE whilst ensuring that the impact on the environment is assessed and minimised as per industry standard. It is noted that in the UK OFGEM play a key role in ensuring that innovation and value are delivered to the consumer, and it could be that similar role should be delivered in Ireland by a body such as the CRU.

Lastly, with OW model there is a reduced possibility of grid capacity saturation which is expected to further increase the developers' interest as the likelihood of project curtailment will be reduced.

4) ***With respect to key driver (iv), required infrastructure, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

The proposed model would lead to the grid being reinforced on a first-come-first-served basis following each grid connection application submitted by the developers. The model is similar to that being used in the UK. The model presents several advantages listed below:

- In the UK, the CION process allows for TSO and developers to be informed early in the development of the planned reinforcement and connection date to facilitate the integration of projects and pick points of connection with optimised cost. There would be a need for a similar process in Ireland which would increase the TSO view on the future projects being developed and allow for optimised reinforcement works as well as accurate connection dates for the developers. The process would also ensure that the ownership of all assets is well limited and defined between the TSO and developer.
- Reinforcement of the grid on a project basis would reduce the commercial risks (grid curtailment, delay in the connection date of the project) making the Irish market more attractive. These are considered as critical points for the developer as it reduces uncertainties and therefore facilitate competitive financing and faster development, both of which will have a positive effect on LCOE. OW proposed model would therefore likely result in an increased interest from developers in the Irish market, which will help achieving the 2030 government target and maximum commercial tension.

[3] https://www.iwea.com/images/files/final-iwea-70by30-saving-money-report_may-2020.pdf

- It would potentially lead to a minor over capacity in the grid, which in the long term could lead to small projects being developed at a faster pace having grid capacity available and therefore requiring a lesser grid reinforcement. This would work well with other small scale projects including floating offshore demonstrator, wave and tidal projects.
- It would open greater opportunities for transboundary country interaction where a project could connect to two different grid with different export cables. This approach is still in a demonstration phase however it could help reducing the LCoE of a project and help reduce curtailment in the event of grid capacity saturation. A developer will likely be willing to take more risk than the TSO in connecting a project to two different countries. Depending on the project localisation the countries could be Ireland, Northern Ireland, Wales, Scotland and France. Such projects are already being developed in European country, one of the main example is COBRA cable[4] project linking Netherlands and Denmark.

The OW model would also help the TSO have foresight on the upcoming projects and therefore will be able to plan the reinforcement works accordingly. On the other side, the developer will have a good visibility on the connection.

5) ***With respect to key driver (v), compatibility with Relevant Projects, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

The model proposed by OW is compatible with the Relevant Projects. There will be no need for further considerations for these projects other than the ones emerging from the update marine plan expected to be adopted and published in 2021. OW proposed model does not create new risks for the Relevant Projects. The proposed model is seen as robust and enduring, and would remain the core model even if spatial planning was brought to bear on the system by the NMPF in due course.

6) ***With respect to key driver (vi), social acceptance, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

OW considers that there are two key parameters to consider for social acceptance: LCoE (as a cost to consumer) and environmental disturbance (in terms of conservation and local acceptability).

Regarding the LCoE, OW proposed model is considered to lead to the best LCoE which will result in higher levels of social acceptance.

Regarding the environmental disturbance, OW considers that none of the proposed models would reduce the volume of construction and deployment of assets required compared to the model proposed by OW, with these factors being the drivers of environmental disturbance.

[4] http://www.cobracable.eu/

Therefore, the model proposed by OW is considered to provide the highest level of social acceptance of the projects.

7) ***With respect to key driver (vii), facilitating the timely development of offshore wind capacity to achieve the 2030 target, which of models 1,2,3,4, or variant of these, delivers the most satisfactory results? Which features of the model, or variant, are the most influential for your given choice?***

A reasonable timeline to build a project starting from lease agreement date is approximately 7 years. When considering the target for 2030, it is expected that the proposed model will offer the highest chances of success of delivery. OW considered that a state body led model would not deliver suitable capacity for sufficient installed projects by 2030. The time taken to identify the zones, select the project areas and pre-empt the consenting of windfarm and transmission assets would all curtail the ability to deliver a significant mass of generation ahead of this deadline.

The Relevant Projects have already undertaken preliminary work that would potentially help reduce the time needed to deploy a project. It would be counterproductive to discard these efforts by supplanting their position to date with either the state of TSO.

OW model ensures that the developers are responsible for justifying and delivering the development process. The experience obtained developing project in various markets will also help reduce the time needed to build project and help Ireland in its effort to achieve the 2030 targets.

8) ***Rank the key drivers in order of importance 1-7, which have the greatest impact on the choice of model.***

OW considers that the order of importance of the drivers in question 1 to 7 is as follow:

Table 2: Drivers Ranking according to OW

Ranking	Driver
1	Environmental Impact
2	Cost Levels
3	Facilitating Timely Development of offshore wind
4	Compatibility with Relevant Projects
5	Required Infrastructure
6	Social Acceptance
7	Future proofing and technologies

9) ***How important is it for Ireland to develop an indigenous offshore wind energy industry? How best can an indigenous industry be developed?***

The development of an indigenous offshore wind industry should be seen as a critical step for Ireland. As nations look to stabilise their economy in the wake of the current pandemic, infrastructure investment is likely to be of huge benefit, ensuring that government intervention

leads to long term benefits for the wider economy. Ireland has worked hard in recent years to bring in high tech internet driven investment to the country; this is both demanding in its consumption of power, but crucially it is a sector that places significant value on corporate social responsibility; it will require that these demands are met with an ethical and sustainable source of energy. An offshore power revolution therefore goes hand in hand with this sector. If done the right way, this offshore power revolution could also ensure that Ireland is finally in control of its own power requirements, breaking dependencies on foreign fuel providers.

The relocation of generation from traditional thermal generation centres will require some restructuring of grid assets, but this can come with the co-benefits of modernisation of the existing network, ensuring greater resilience and adaptation to future demand patterns. Grid investment also naturally carries a high local content value, due to the requirement of an onshore local workforce and the pre-existence of local supply chains.

Work now needs to be done to ensure that an indigenous offshore energy industry is developed in a way that captures as greater percentage as possible of local spend in the nation's economy. OW note Enterprise Ireland believe that over 20% of this multi-billion Euro sector can be captured by a domestic supply chain and that furthermore they believe that with adequate support this value could be as high as 35%. OW applaud this ambition and look forward to working with stakeholders in due course to help maximise the huge opportunity available.

10) How should onshore and offshore grid connections be optimised? For example, should consideration be given to common hubs for adjacent projects?

Regarding the potential optimisation of the offshore transmission assets, OW view is that such optimisation would lead to increased risk of not achieving the 2030 targets. Common hubs or shared transmission assets could be introduced post 2030. OW considers that the point of connection should be the interface between the TSO reinforcement work and the offshore transmission assets. As such, the developer would not be able to share common hubs but it is recommended to potential common hubs are looked after for the projects to be built post 2030.

A common hubs approach was taken in Germany which helped increase the pace of the projects delivery. However, after installation of the projects, the shared assets capacity was not sufficient for all the installed projects and led to high curtailment. Germany market growth was greatly reduced as developers identified curtailment risks as critical. Similarly to the process in UK and as discussed in question 4, the connection date of each project either onshore or offshore should be on a first come first serve basis. Once a grid connection application is issued and granted by the TSO then the grid reinforcement requirements for the projects can be defined and a connection date provided. The TSO will be aware of all the projects expecting to be operational and will therefore be able to plan the grid reinforcement work accordingly to provide earliest possible connection date to each individual project.

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11) Are there any further considerations which might reduce the cost to the consumer?

OW consider that the main driver to reduce the cost of the consumer is to reduce the LCoE. An additional cost to the customer could be related to the cost of grid reinforcement carried out by the TSO.

Regarding the LCoE, the proposed model is considered to be the one offering the best outcomes. This has been identified as a key driver in question 8 and all the questions are answered with considerations on the LCoE.

Regarding the grid reinforcement cost. As explain in question 4, a process between the developer and the TSO would help identifying the most optimised point of connection. This process is already used in other countries where the aim is to look at estimate the best cost optimised solution for the developer and the TSO. This process has proven to be robust in the UK and could be used in Ireland to ensure the overall cost to the consumer is as optimised as possible.

Whilst this consultation is focused on the grid delivery model, OW would like to highlight that another key consideration which might reduce the cost to the consumer is the use of Contract-for-differences awarded through tenders. Long term contracting creates a win-win situation that reduces cost for the system over projects lifetime and achieve targeted deployment. The best way to minimise the cost for the electricity system is to create a scheme that provides investor with the higher visibility over the remuneration as possible. Lower required remuneration will be passed to final consumers that will benefit from lower electricity tariffs for the same level of renewable penetration.

12) Currently, developer compensation is not provided for delayed delivery of grid connections to renewable generators connecting to the network. Should developer compensation arrangements be provided for delivery of offshore grid connections to renewable projects? Similarly, who is best placed to bear the outage risks under the various options?

The approach to compensation in the event of delayed delivery of grid connection varies from a country to another. The preferred option to increase the developer's interest and reduce the risk of delays achieving the 2030 targets would be to add a compensation mechanism in the event of delays. The compensation would not be applicable if the event causing delays is not the fault of the TSO and its subcontractors (i.e. force majeure, change in law, etc). It is recommended that these clauses are defined with law firms specialised in the renewable energy industry. From a country to another, the compensation paid by the grid owner to the developers vary.

A compensation mechanism would offer guarantees to lenders and therefore reduce the cost of a project for a developer which is viewed as an extremely important criteria when deciding to proceed with investment. In the UK such compensation mechanism has not been put in place and instead developers are using delays to the grid as a force majeure event to limit the impact of grid delays on the Capex. This approach has proven its limit and therefore OW preferred option would be a compensation mechanism.

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13) Are there any further drivers which should be considered when assessing a grid delivery model suitable for offshore wind development in Ireland?

The initial drivers identified in Navigant report for the grid delivery model are cost, environment, future proofing, infrastructure, Relevant Projects, social acceptance and timing. OW consider that there are other additional drives that should be taken into consideration when assessing the grid delivery model

- **Risks achieving 2030 targets**: When looking for new opportunities, a developer will assess the market where a potential opportunity has been found. If during that assessment a number of financial risks are observed regarding the grid delivery model in place then there is a risk of the developer being less keen on proceeding with the opportunity at a fast pace. This could reduce the development of offshore projects and Ireland could miss on the 5 GW of offshore wind capacity by 2030. On the other hand, a grid delivery model viewed as presenting limited risk on connection date and grid curtailment would likely positively impact the pace of the project delivery.

- **Local Content**: Whilst not directly impacted by the grid delivery model, the local content could be indirectly impacted by the choice of grid delivery model. A developer identifying risks of delay to the connection day and risk of curtailment during operation will be further looking at minimising the Capex of the project. As such, some expected local content could be transferred to other geographies where the total cost would be lesser. Additionally, as aforementioned, a reduced interest in developing projects in Ireland could reduce the opportunities for local workforce which would negatively impact the local content as well.

There are other drivers of minor importance that could be considered. However, most would fall under the main drivers identified in question 8 including cost levels, environmental impact and timing of project delivery.

14) Overall, which model, or model variant, is most appropriate as an enduring grid delivery model for offshore wind in the Irish context?'

The model proposed by OW is considered to be the most appropriate for the delivery of an enduring grid. The model is based on our work performed to date to assess the grid in Ireland, the estimated grid reinforcement required to reach the 3.5 GW installed capacity by 2030 and our knowledge of different grid reinforcement process in other countries. The Irish grid requires significant reinforcement to be able to deliver on the 2030 objectives.

The approach of having the TSO in charge of planning the whole grid reinforcement and transmission assets has proven to be efficient in the short term (i.e. Germany). This has led to a fast pace of project development and construction up until 2017-2018. However, in the recent years, German projects have suffered high level of curtailment due to a saturated grid. This has had multiple negative effects including but not limited to:

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- The projects have underperformed which has, to some extent, reduced the confidence in the offshore wind industry for some investors and lenders. It has also reduced the appetite of developers in the German market which has resulted in a decrease of offshore wind projects planned in Germany in the upcoming years.
- This has had a negative impact on the German offshore and onshore wind industry and has also impacted the local actors. Turbine manufacturers like Senvion which have declared bankruptcy and Enercon which is facing financial difficulties have been impacted by the reduced pipelines of projects in Germany as it was their main market.

As such, the proposed solution of triggering grid reinforcement after a developer submits a grid connection application is considered the best considering the Irish context. This would attract developers as they would get guarantees to be provided with a firm connection date and a sufficient grid capacity. This solution also ensures that the interest remains over time and would help having a steady pipeline of projects helping to maintain local workforce employed in the industry for the long term.

Lastly, this grid option would potentially lead to available grid capacity which could be used to develop smaller renewable energy projects with little reinforcement work (floating offshore wind, wave and tidal).

Taking an optimised approach would send a negative sign to developers as there are increased risks of delay to the connection date and curtailment due lack of grid capacity. These issues have been seen in the German offshore wind industry and has impacted the future development of German offshore wind projects.

Considering the number of projects needing to be operational by 2030 a standard approach to grid reinforcement is preferred as it provides the developer with better guarantees regarding the connection date.

Conclusion

OW believes that the preferred model is the most suited to deliver 5 GW of offshore wind projects by 2030. Additionally, this model has been defined with considerations towards optimising LCoE and reduce environmental impact which are viewed as the most important criteria when developing the offshore wind industry. The model (on a simplistic level) is mostly aligned with what has been done in the UK which is, to date, the world's largest offshore wind market.

OW welcomes the opportunity to engage with the Government of Ireland through this consultation process and remains available for further engagement on this point as well as the wider offshore wind industry.

Signature: [redacted]

Full Name: [redacted]

Position: [redacted]

Date: 22/07/20