Chambers Ireland
Advancing business together

Chambers Ireland's submission for the Public Consultation to Inform a Grid Development Policy for Offshore Wind in Ireland

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Chambers Ireland's Perspective on Offshore Wind

Chambers Ireland is the State's largest business representative network. We are an all-island organisation with a unique geographical reach; our members are the chambers of commerce in the cities and towns throughout the country – active in every constituency. Each of our member chambers is central to their local business community and all seek to promote thriving local economies that can support sustainable cities and communities.

Our network of chambers uses the Sustainable Development Goals to prioritise our policy analysis and recommendations. We are anxious to see the current regulatory regime reformed to ensure that offshore wind can be delivered efficiently and successfully by 2030. The existing regulations have delayed our development of an offshore wind industry which has damaged our country's capacity to meet our obligations under Climate Action (Goal 13) and Affordable Clean Energy (Goal 7). Reforms which do not deliver the 5GW necessary by 2030, or facilitate reaching that target while using grid assets inefficiently will hurt our economy's capacity to develop Sustainable Cities and Communities (Goal 11), Industry, Innovation and Infrastructure (Goal 9) and will ultimately undermine the challenge of creating Decent Work and Economic Growth (Goal 8).

Therefore, the Chambers Ireland Network is deeply interested and engaged with the development of wind, and other renewably sourced, energy.

Energy security is a principle concern for our membership

Sourcing our fuels from countries that are politically unstable imports political risks into our economy, we need to ensure that Ireland has a resilient energy supply which can sustain economic, social, political, and environmental shocks. Wind – and in particular **Offshore Wind – potentially has an enormously positive role to play in sustaining our**

economic future, if we bring in effective regulations to support the industry's development.

Climate Change

Climate change has become an unavoidable risk, and one with unbounded potential maximum costs - we cannot predict how much Climate Change will cost our economy. However, by shifting to renewably sourced energy we can reduce the damage to the environment which we are yet to do. Our geographic location, and with it the large area of the Atlantic which lies within our sovereign territory, will allow Ireland to participate in the European Union's de-carbonisation mission through the exportation of our excess watts. **Ireland has unfortunately delayed the readying of a regulatory regime which could facilitate the generation of offshore wind energy by a decade already, it is vital that we rapidly make progress in reducing our burden on the environment.**

Competitiveness

Energy costs for Irish business were significantly higher in 2019 than for their competitor businesses in the other EU-28 states[1]. Given the large amount of available capital, the unprecedented low interests rates, the creation of the European Green Deal Investment Plan, **this is the best moment in time to build capital intensive infrastructure, such as offshore windfarms, had we the regulatory regime to nurture them**, and to do so while minimising the cost impact for the consumer.

1 https://www.seai.ie/data-and-insights/seai-statistics/key-statistics/prices/

Export opportunity

With secular and technological change inducing significant disruption to global trade, and with this process being accelerated by the Covid-19 crisis, the exportation of offshore wind-derived energy should be a key part of the government long-term economic strategy for the State. With numerous proposed changes to international taxation regime likely to have a marked impact on government revenues **there is a great opportunity for Ireland to benefit from supplying electricity to other European Union states at zero marginal rates**. Further, as the technology matures, Ireland has the opportunity to use excess wind derived electricity to support Hydrogen production which can also have the benefit of replacing the CO_2 emissions that heavy goods vehicles, home heating, and our current generation of gas turbines are producing.

Regional Growth and Industrial development

While our domestic demand for electricity is largely focused on the Greater Dublin Area, the vast majority of our wind-derived energy potential will come from the more economically disadvantaged areas, with multiple positive effects. The maintenance and servicing of offshore windfarms is both highly skilled and labour intensive. SSE's Beatrice field[2], off Scotland, is 588MW and will require 90 employees to maintain it through the 30 year+ lifespan of the windfarm. With the programme for government targeting 5GW of electricity generation offshore, ten of our coastal towns on the East and South of the country can expect to become the recipients of these jobs. Combining the high-multiplier regional effect and the wage levels associated with high skilled engineering work,

2 https://www.sserenewables.com/media/jqdhjrac/beatrice-socio-economic-impact-report-v2_bmf_final_200717.pdf

offshore wind has the potential to breath life and hundreds of jobs into these small towns. When floating turbine technology matures, we can expect that the west coast will see ten times as many towns benefitting from the maintenance and servicing of windfarms. We also have a narrow window where it may be possible to upgrade at least one of our deep-water ports along the East or South of the country so that they can be the focus for the construction efforts for these new windfarms. If we fail to commence the upgrading of a local port then it is likely that the construction of the windfarms in Irish waters will be conducted largely out of Liverpool, or another English port, with a double effect; firstly we will not benefit from the jobs that are associated with construction which will have an immediate impact on GNI*, secondly we risk not having sufficient infrastructure and industry to support the Atlantic windfarms once they commence construction in the post-2030 period, and so gravely reducing the long term economic benefits that will be associated with the wind-energy industry. **Offshore wind has the potential to transform the economies some of our most disadvantaged towns and regions, reducing the economic burden on our cities while also fuelling the growth of our economy.**

Ireland needs an ambitious and immediate programme of action from the government to ensure that the Marine Planning and Development Management Bill is quickly passed, the Marine Spatial Planning Framework needs to be rapidly finalised, a strategy for maximising the economic and social benefits of offshore windfarms has to be developed, a skills and apprenticeship training strategy to support offshore construction must be introduced, quays will need upgrading to support crane activity and the weight of larger offshore wind turbines, logistic hubs will need to be developed, and ports will need integration with the rail network.

Constraints to Wind Energy in Ireland

Time

Chambers Ireland is aware that there are a number of limiting factors to our capacity to benefit from our national wind resources. Time is the principle constraint upon the decisions that surround Offshore Wind Energy Production in Ireland. We are already not meeting our 2020 emissions targets. Had we been able to commence the development of offshore windfarms over the last two decades, the fines that we will have to pay this year would be considerably less than we expect them to be. Given the time it takes to bring offshore windfarms from planning to power generation, it is unlikely that our current situation will be much improved before 2027. This makes the next three years critical in terms of progressing towards meeting our agreed 2030 emissions targets. And further, given that as a consequence of the European Green Deal, our targeted emission reductions are likely to become much more ambitious, we will need to work even harder if we are to be successful in meeting these new lower emissions targets.

It is essential so that existing projects which are ready to commence are fast tracked so that they can start producing electricity at the earliest opportunities, while those projects that have been stalled as a result of uncertainties regarding the legal regime will have sufficient certainty over the medium and long run so that they can make good on their present outlay and be able to plan for the enormous efforts that are to be made between now and 2050.

Regulatory Certainty

The next concern is regulatory, and one outcome from this consultation process that we look forward to is the provision of certainty for those wind energy developers who have been operating within a legal lacuna over the last decade during which the Marine Area

and Foreshore (Amendment) Bill (MAFA) was commenced but failed to withstand legal scrutiny.

Many developments, which were to have been built by 2020, had to pause, and work on the planning of other windfarms had to go into a hiatus until the parameters of the new legal environment were made clear. Unfortunately, the absence of legal and regulatory certainty continues to be the case. Many of those companies which wish to commence work in Irish waters have considerable sunk costs associated with the research and planning for their projects. As we finally build an effective regulatory framework for facilitating the construction of offshore windfarms, and the landing of their electricity, we ought to be careful not to undermine the investments that have been made. To do so could discourage further investment by those that are already active in Irish waters. Worse, it would raise regulatory risk for those others who are considering investing in Irish offshore wind, but have seen those who have risked this already suffering as a result of MAFA Bill's constitutional issues and slow progress towards remedying these legal problems.

Grid Capacity

There is currently, according to EirGrid, capacity to introduce 1.5 – 2 GW of wind energy along the East coast, and government has expanded from the Climate Action Plan offshore wind target of 3.5GW to 5GW over the 10 years to 2030. This means that we will need to use our existing grid infrastructure efficiently if we are to have sufficient capacity to be available to land all the potential offshore generated electricity. Changing the grid has proven to be a difficult task within the confines of Irish planning law. Repeatedly, grid upgrades, even those that would benefit the local population, are resisted which extends the time taken in planning considerably. This has increased the cost of planning significantly as now projects must budget for the inevitable judicial reviews. Even if EirGrid has yet to conduct a survey of the Southern grid to determine what the available extant capacity is, they will need to engage in considerable grid reinforcement if we are to be able to bring 5 GW onshore in the coming years. There are also structural restraints, e.g. Dublin is the home of the largest demand for electricity

but trying to route lines through the city is very slow and difficult, involving as it does a complex environment, historical built heritage, and a large number of land owners and occupiers. Alternative routes around the city are often congested with limited capacity to add new lines into the network. EirGrid must ensure that there is not only capacity for the planned 5GW that are to be built over the next ten years, they must also ensure that there is sufficient capacity for the other 5GW of wind sourced electricity that is available on our Eastern and Southern Coasts.

EirGrid, with ESB Networks, is so tasked with a very difficult challenge; to support the connection of all the 'Relevant projects', to allow for the connection of a number of other projects which have yet to be finalised while they are awaiting regulatory certainty; to support the connection of a further 5GW in the Eastern and Southern grid beyond the defined 'Relevant projects'; to do so with the minimum amount of onshore works to avoid the delays that are inevitable as a result of the planning system; to ensure that as much of the existing infrastructure is used to capacity thereby minimising the public service obligation that billpayers will be faced with. And to do so even as the Celtic Interconnector is introduced, a further 4GW of onshore wind in connected to the network, while the North/South Inter-connecter is being been laid, as a number of thermal plants will be decommissioned etc. The costs of these works will ultimately be paid for by the consumer, and given that these works must be completed quickly, the price of electricity is likely to rise further than was necessary relative to a baseline environment where a functioning offshore planning was introduced over the last decade. Those regulatory delays now mean that we are in a race to meet our 2030 targets.

Zoning and Setback Requirements

Setback requirements should not be considered as part of the process for developing a Grid Connection Policy, rightly they should be considered by the National Marine Planning Framework, and summarily rejected. The premise of having a nearshore

setback is mistaken as it reifies the principle that people can object to the mere sight of a wind turbine. Any form of token setback would set a precedent which the proposed Environmental and Planning court would have to consider in any and all future objections, as it is an acceptance on the part of the state of the claim that no one should have to bear the toll that is seeing a turbine at sea. At sea level the horizon is at a distance of 5km which means that any turbine constructed within that field will be wholly in view, but distancing them further from shore does not protect the casual observer from viewing them out to a distance of 30km, and someone seeking them on the horizon can observe turbines out to a distance of 40km, by night or day[3]. On a clear day it is possible to see Wales from Wicklow, we will just have to accept that if we are to have turbines at sea, they will be seen. Those few who will object to them will object regardless, but if we are to be closing our coal and peat fired electricity plants, as we must do, then we will have to have alternative sources of electricity production and a planning process which is sufficiently robust, with planning officials that are suitably competent and expert, to ensure that the decisions made can withstand the inevitable judicial scrutiny which will be brought to bear. The areas where it is easiest to build offshore windfarms are shallow, and the vast majority of shallow waters are near land, restricting the building of offshore windfarms from occurring in nearshore waters by default will reduce the available areas for windfarm development by an order of magnitude.

More broadly, on zoning, the Department ought to be appropriately conservative on what they hold their role to be, the department of planning has traditionally had few marine resources to consider, and so few who are expert in the marine environment. The current proposals suggest that the Department would review the available waters and then determine which of those would have waters where offshore windfarm

3 Robert G. Sullivan, Leslie B. Kirchler, Jackson Cothren & Snow L. Winters (2013) Research Articles: Offshore Wind Turbine Visibility and Visual Impact Threshold Distances, Environmental Practice, 15:1, 33-49, DOI: 10.1017/S1466046612000464 https://www.cambridge.org/core/journals/environmental-practice/article/research-article-offshore-wind-turbine-visibility-and-visual-impact-threshold-distances/59A51F3CD207849FC7F5BD986F15B2CB

construction would be permissible, then developers would (by whatever process) contest for right to build within the allowed zones. The default however ought to be that outside of maritime navigation channels, our militarily sensitive waters, and absent any peculiar ecological or environmental sensitivity at the site, then the construction of offshore windfarms ought to be permitted by default. Again, it is inevitable that all proposed windfarm projects will suffer from planning objections; it is wiser to create a planning system that is sufficient to the challenging task of passing a judicial review than it is to think we can avoid these judicial reviews by creating a planning system that inadvertently makes offshore windfarms unviable in an attempt to reduce the likelihood of the judicial reviews which are unfortunately inevitable.

Grid Development Policy Observations

In the short run, the clear necessity is for a model which delivers on the 5GW of offshore wind energy which we will need to meet the 2030 targets. To accomplish this all parties will have to work closely together and commence action immediately.

Thus, Option 1 should be the default option, unless the utilisation of Option 1 at a particular location would prohibit the inclusion of other projects further down the development pipeline as a result of the limitations of the existing grid network. If that is the case, then there should be cause to consider Option 2, wherein a developer, in collaboration with the TSO, and ESB Networks, would construct an offshore substation which has excess capacity beyond what is necessary for the given windfarm that is under construction but would be of sufficient capacity to support the reinforcement of the existing grid, or would allow for the connection of further windfarms, or offshore substations, that might be needed to ensure that our 2030 targets might be met, while minimising the number of planning permissions that would need to be sought on land.

This could of course be burdensome for the developer and so the TSO should be obliged to finance the additional costs that these works make necessary to ensure that the primary developer is not unfairly burdened by the costs of developing new infrastructure which its late moving competitors would be able to use without incurring similar costs (thereby putting them at a competitive advantage). Without burden sharing between the state and the developers regarding the cost of the extra infrastructure which would be required then first movers could be discouraged from commencing construction works.

This option would, in the longer run, be of benefit to the enduing regulatory regime that exists in perpetuity as it would allow, in parallel with the construction of an offshore windfarm industry, the development of the skills needed to design, maintain, and upgrade an offshore grid infrastructure. This would have the potential to allow the TSO to upgrade and reinforce the onshore grid without needing to engage with the onshore planning system, (and the delays which onshore infrastructure involves). It could also allow the grid owner to build up the capacities and skills that will be required to support the eventual export focused offshore grid which will transport our excess electricity to continental Europe.

These skills would be useful if, as most stakeholders (including Chambers Ireland) believes, that it would be best to have the long run Grid Development policy more wholly integrated into a plan led model. The constraints on the Western Grid are different from the Eastern and Southern – primarily it is the absence of grid infrastructure which is the problem rather than the challenges of upgrading existing infrastructure. No offshore connections will be possible into the West without significant onshore investment in the grid. This is a process that must also commence immediately, as individual grid upgrades often roll out over a duration measured in decades, in the Irish context.

However, even under the long run model of planned offshore grid development it will be necessary for the TSO to work with the developers to identify the appropriate offshore sites as even by 2030 it is unlikely that the Grid owners and operators are not likely to have experience in the actual construction of offshore windfarms; merely with configuring the onshore grid to support their connection. The TSO may not be well placed to understand where the appropriate locations for windfarms might be. It will be capable of outlining how the grid could be extended and reinforced to facilitate the construction at particular sites, and how long that was likely to take, and map our potential development pipelines. Together this would allow the TSO and ESB Networks to collaborate with the developers to maximise the production of electricity, while operating under the TSO's and the developers' resource constraints.

Therefore, in the long run the department should aim to create a regulatory regime which is closer to Option 3, but one that is directed through collaboration between developers and the TSO rather than one which is centrally planned. There should be a plan, but it should be reasonable, coherent, and be flexible enough to accommodate the political, local, and legal difficulties which are part of the infrastructure building process.

Chambers Ireland would also be hesitant to commit to the benefits of a centrally planned social acceptance campaign. One benefit of there being many participants is that multiple strategies may be tried in parallel which would allow strategies to be more easily tailored to the local conditions on the ground. Also, multiple projects which involve multiple agents may be more robust to the tactic of wealthier areas financing and resourcing campaigns to object to elements of infrastructure projects elsewhere along the route, so that they can hinder projects which have been already permitted in their region, which has been a problem with some of the larger elements of grid reinforcement on land in the past, even though there was only a single state body involved.

Responses to questions specific to this consultation

1 Cost Levels

With respect to 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?

We should view the potential models as covering two different time periods, in the long run, Option 3, with appropriate flexibility (as addressed in the Grid Development Policy Observations above), will be the most appropriate for managing cost, for the State and for the customer. However, in the short run, because of the delay in refining the regulatory regime to facilitate offshore planning and development it now too late to expect to Ireland to hit our desired 2030 emissions targets, on time, and cheaply. Quality, price, and timeliness are an inconsistent trinity we have to pick two at most. Timeliness is important, but so too is the capacity to connect sufficient wind derived electricity to the grid, if the quickest route to generate 400MW excludes a further 400MW from connecting at some point in the future, then we may have to take a more expensive policy direction if we are to deliver the 5GW by 2030 through futureproofing technology when it is in development. Where this occurs, the burden for the excess costs ought to fall upon the State as it was the State that consented to the 2020 (and then 2030) emissions targets without dedicating sufficient legal resources to construct a planning regime that would have allowed that to be done to a high quality, and on time. Therefore, the TSO should be able to down weight price in their decision-making matrix when making it the primary concern would see the likelihood of delivering the 5GW by 2030 diminish. In cases where it would be necessary to build extra capacity into the offshore grid, Option 2 would be better, but the quickest road to delivering that would be to allow the developer to construct it, so the specifications determined to be appropriate by the TSO, with the TSO investing the requisite amount to ensure that the developer is not subsidising other developers.

2 Environmental Impact

With respect to key driver, 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?

Environmental impact should be an important driver of the consideration of any and all planning decisions, and care should be taken to ensure that construction doesn't occur in sensitive areas nor at sensitive times, but it should also be recognised that the environmental impact of not building a windfarm should be included in the weighing of a decision on the environmental impact of a given project. Every project should involve an environmental impact assessment, which ought to consider the positive environmental impacts as well as the perceived risks. Typically, while the construction phase is on going marine animals are disturbed by the activity which is occurring but returns to normal after that phase has been completed.[4]

As a result of the fishing exclusion zone around the windfarm, there is typically a habitat gain[5], with the areas where turbines exist becoming de facto marine wildlife sanctuaries[6] while there is known damage that windfarms do to flying animals, it is primarily an effect which occurs in tandem with migratory events suggesting that for the vast majority of the year there isn't a negative effect. And during those periods where there is a negative effect, the rotation rates of the turbines can be down regulated to minimise the consequences, or in combination with radar the turbines can pause their rotation to allow the passage of a migratory flock. The greatest effect on the area local to the windfarm is during the construction phase, which should look to compress as

4 Assessing environmental impacts of offshore wind farms: lessons learned and recommendations for the future https://aquaticbiosystems.biomedcentral.com/articles/10.1186/2046-9063-10-8

5 Effects of offshore wind farms on marine wildlife—a generalized impact assessment https://iopscience.iop.org/article/10.1088/1748-9326/9/3/034012#erl492511s4

6 Marine Renewable Energy in the Mediterranean Sea: Status and Perspectives https://www.mdpi.com/1996-1073/10/10/1512/pdf

much activity into as small a temporal window as possible, while remaining offsite during the breeding phases of any vulnerable species that breeds in the area.

If however the area is suffering from trawling disturbance, it's likely to benefit from the protections that the exclusion of fishing[7] and commercial vessels, particularly if accompanied with anti-scouring protections that simulate reefs and support the re-colonisation by local species of diverse habitats[8].

3 Future Proofing

With respect to key driver, 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?

Chambers Ireland does not have a view regarding the technical solutions that are appropriate for the developers, TSO, or grid owner. However, we are concerned that the grid be utilised effectively, efficiently, and to its fullest extent, as under-utilised capital stock still has to be maintained and so drive up the already high price for electricity which the Irish consumer must pay. While we believe that the default option ought to be Option 1, we can foresee how that could exacerbate congestion, and how this could easily become an issue in the already congested Eastern grid. Therefore we believe that, in consultation with the regulator, if the TSO is able to make an argument that to maintain the long term sustainability of the grid it is necessary to use the Option 2 model at a particular location, and if Option 2 is used, then the TSO ought to invest in the local Grid infrastructure at that location through the mechanism of determining what the

7 Short-term effects of fishery exclusion in offshore wind farms on macrofaunal communities in the Belgian Part of the North Sea https://www.sciencedirect.com/science/article/abs/pii/S0160578361630049 2

8 Artificial Reef Effect in relation to Offshore Renewable Energy Conversion: State of the Art https://www.hindawi.com/journals/tswj/2012/386713/

upgraded requirements for a line, a substation, or whatever other grid technology is involved, must be at that location and compensate the developer sufficiently to cover the cost of upgrading the grid infrastructure beyond the capacity which is the immediate requirement of that developer.

4 Required Infrastructure

With respect to key driver, 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?

Chambers Ireland does not hold a view about the particulars of the infrastructure required for the development of the offshore grid.

5 Compatibility with Relevant Projects

With respect to key driver, 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?

During the period in advance of 2030, the default model for the Eastern and Southern windfarm projects, in their entirety, both the relevant projects and those others that may be delivered in that timeframe ought to be Option 1, unless the TSO can make an argument which satisfies the regulator that to maintain the long term viability of the grid infrastructure they should operate under the Option 2 model on any particular site.

6 Social Acceptance

With respect to key driver, 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?

Social acceptance is unlikely to be derived from the model of Offshore Grid Development which this Consultation determines to be the appropriate one. Social acceptance is a process that takes time, and only after the change has occurred.

The most important thing that the Department can do is to ensure that the process that it prescribes is sufficiently robust, and the institutions involved are sufficiently capable to ensure that when these projects do pass through the inevitable judicial review, then they will succeed as they will have been conducted fairly with adequate concern for all the relevant interests, within the confines of well-articulated legislation.

There has been some discussion regarding the possibility that the presence of one single entity which rolls out all the grid infrastructure across the country might lend itself to a more easily attained social acceptance, this is probably very unlikely – given the long history of planning activism that is part of the civic process.

Arguably, a developer that finds themselves building offshore infrastructure and which cannot profit from their investment until the connection is made to the grid is both better incentivised, and has more degrees of freedom in its engagement with a local community, when it comes to making a deal – compared to a state body which may find itself in the midst of a political controversy over its construction of grid infrastructure.

7 Timeliness

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?

The time for timeliness has passed. There is perhaps a 30-month window to ensure that we are progressing towards meeting our 2030 targets. The default strategy, Chambers Ireland has argued, should be to build all the relevant projects, and all others that are necessary to meet the 5GW targets, under Option 1 – unless such a course of action may prove to be limiting to the capacity of the grid to deliver on that 5GW transmission target, in which case the option should shift towards Option 2, but where the TSO invests in the upgrades necessary to support the long term capacity of the grid. Where that is built by the developer, and designed in ongoing partnership with the TSO, this should not delay the delivery of the project.

8 Rankings

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

1. Timeliness
2. Futureproofing
3. Compatibility with Relevant Projects
4. Environmental Impact
5. Cost
6. Social Acceptance
7. Required Infrastructure

9 Indigenous Offshore Wind Energy Industry

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

Critically important to the future economic prosperity of the country, not least because the likeliest location of the port that will be used for the construction phases of the windfarms that are to be built on the Eastern and Southern coasts of Ireland is Liverpool. Our delay in creating a robust and constitutional regulatory and planning regime for offshore windfarm development has resulted in Ireland losing significant opportunities in the offshore wind electricity generation sector already. However Brexit may be of benefit to Ireland in this circumstance, as Britain moves from the Customs Union there is likely to be regulatory, tariff, and certification issues involved in the exportation of finished goods, such as a wind turbines, into Irish territory. This could allow for Irish companies to have a competitive advantage relative to Britain, which is likely to be hindered by its trade designation for a considerable period.

There is also a degree of certainty to be attained, even with matters as simple as currency, never mind political risk, or the risk of divergence in labour standards, and the problems regarding cumulations and certificates of origin for products that may be complicated for a product delivered at a significant distance from shore.

The most important thing that can be done is the selection of an Irish port which can act as a hub for the Irish indigenous offshore wind energy construction sector, which could, as part of the European Green Deal, upgrade its facilities to ensure that it is capable of delivering the services that Irish entities will be borrowing billions of Euro to invest in.

It is critical that we move immediately on such a port, as not only will it be useful in the construction of the 5GW out to 2030, but because it will create the skill base, the knowledge base, the expertise, and the personnel which will be needed to deliver on the promise of offshore wind out to 2050 and beyond.

Aside from the construction industry, the operation and maintenance phase of these windfarms has the opportunity to transform regional coastal towns given the scale and quality of employment involved, and more so because of high investment multiplier effect that we can expect in regional towns because of the current low demand for employees.

If SSEs BOWL project in Scotland is a model that can be replicated here in Ireland We can expect as many as 20 towns along the Eastern and Southern coasts re-enervated by the Operations and Maintenance requirements of approximately 10GW of Windfarms. Estimates that relate to the Atlantic coast range between three and five times that number. Such activity, particularly if coupled with a second construction port on the Western coast, would create the potential for developing an oceanic energy industry cluster. This could also serve as a test bed for an indigenous wave-energy industry into the future too.

10 Optimisation of onshore and offshore grid connections

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

Chambers Ireland does not have a view on the Optimisation of onshore and offshore grid connections.

11 Reducing the cost for consumers

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

While the members of Chambers Ireland desire a lower rate of costs for consumables such as electricity, we are also aware of the need to maintain and upgrade our grid infrastructure. Ireland is a high cost economy, and high cost electricity limits productivity, but the costs are felt the greatest when construction and investment is limited because there is an absence or deficiency in our supporting infrastructure.

12 Developer Compensation Arrangements

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?

Chambers Ireland does not have a view on Developer Compensation Arrangements.

13 Further Drivers

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

Chambers Ireland does not have a view on other further drivers.

14 Enduring Grid Delivery Model

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

In the pre-2030 period the Chambers Ireland View is that we should be using Option 1 wherever possible, and wherever Option 1 does not reduce the grid's long run efficacy, otherwise Option 2, but developer built in partnership with the TSO, should be the option we engage with.

The post-2030 period will see us having used up most of the easily accessible sites on the eastern and southern coasts, though some may still exist. The gains post-2030 will be found in the Atlantic, which will require significant additional new infrastructure if that energy is to be made accessible. That should involve a centralised approach, however it is the developers that will have the technology, the skills, the research, and the experience to build significant pieces of infrastructure off shore, so while the onshore ought to extended by normal means, the offshore

connections themselves should be built by the developers to the specifications of the TSO and ought ultimately be owned outright by the grid owner.

15 Transition

It is accepted that a transition towards the chosen enduring grid delivery model will be required to leverage the development of the Relevant Projects in the short term. Taking into account the high level roadmaps set out at Figures 5 and 6 above, what should this transition look like?

The transition should primarily be geographical, if the windfarm is to be on the Eastern or Southern coast, and if it is deliverable and connectable within the 2030 timeframe then it should be covered by the Option 1, or if necessary, the Option 2 model as suggested throughout this paper. There should also be some leeway allowed for projects that are progressing but are not fully complete by 2030. Beyond 2030, and for all Atlantic projects, the Model should be primarily planned, but with the strong involvement of the developer community, and with decisions about where and when grid infrastructure is to be delivered signposted and delivered well in advance of the 2030 commencement date of the enduring grid delivery model.