



BY EMAIL ONLY

offshorewind@dccae.gov.ie

Energy Division

Email: [REDACTED]

22 July 2020

Dear Sir / Madam

Ref: Offshore Grid Delivery Model Option Consultation

Thank you for providing us with the opportunity to respond to the above consultation. RWE Renewables Ireland is operating and developing a number of renewable projects in Ireland, across a range of renewable energy technologies. We have up to 1.3GW of projects, including onshore wind, offshore wind and battery storage.

Following the transfer of Innogy Renewables into RWE Renewables, RWE is now one of the world's leading producers of renewable energy: RWE now stands as the world's second largest offshore wind developer and third largest provider of renewable electricity across Europe.

We are working with Saorgus Energy to develop the two **Relevant Projects** - Kish and Bray (as confirmed by Ministers in May 2020), these projects are more commonly known as Dublin Array. Following the recent meeting with EirGrid on 16th July to discuss the potential grid connection and proposals to set up more in depth bilateral meetings, it is vitally important that whatever the outcome of the proposals for the **Enduring Projects**, which we take to mean, any projects which are not Relevant Projects or consented projects, does not impact the ongoing development being undertaken by the Relevant Projects. This is critical, given the risk to project delivery timelines, investor confidence and the ability for Ireland's nascent offshore industry to grow and develop to deliver the ambitious targets as set out in the 2019 Climate Action Plan and more recently, the increased 5GW target for offshore wind, as set out in the recently agreed Programme for Government.

We strongly believe that the continuation of a developer led model for the offshore grid to support the seven Relevant Projects must be allowed. However, we agree with many aspects of the benefits; as set out in the Navigant report of a more centrally planned, and coordinated approach to the offshore grid delivery for all future enduring projects.

Given the relative size of the Irish market, the high levels of new offshore wind capacity required, coupled with the existing need for significant investment in and reinforcement of the onshore grid, we believe moving to a more centrally planned model is likely to provide the best outcomes for Ireland in the longer term. This is because of the absolute need to ensure a coordinated approach to the onshore grid development, maximising the excellent wind resources and marine area will mean that an individual project (developer led) basis is unlikely to deliver the scale of transformation required.

Innogy Renewables Ireland Limited

Unit 5, Desart House, Lower New Street Co. Kilkenny Ireland

Registered Office: Innogy Renewables Ireland Limited - Unit 5, Desart House, Lower New Street, Kilkenny, Ireland.

Registered in Ireland no. 589120

Directors: Cathal Hennessy, George Tottenham, Peter Lefroy, Ben Freeman (British), Martin Andre-Ferreira (British)

Of the two central plan-led options, our preference is for option 3. Whilst we believe there are significant advantages of ensuring a centralised approach for zoning, grid planning and coordination of developments with the onshore transmission grid, we do not believe that the current TSO/TAO model is well-suited to accommodate the needs of offshore wind in Ireland in terms of experience and resources to deliver all the infrastructure delivery, in particular off shore. We further believe that the regulatory regime should not seek the transfer of ownership of the offshore transmission assets unless clarity and legal guarantees can be provided during the grid connection offer process for both future guaranteed availability of the cable, and the levels of compensation (and on what) for non-availability that would be paid in the event that the cable was unavailable.

It is also worth noting that the majority of offshore wind developers of the Relevant Projects are part of wider, global renewable development companies, who have many years of experience constructing and delivering the offshore transmission assets for fixed offshore wind parks. Many of these companies are also investing in the development of floating wind, which has the potential to provide Ireland with a globally competitive technology in the early 2030s.

We welcome the publication of the Navigant report and commend the Department of its willingness to engage with industry and key stakeholders as the report was being drafted.

With regards to the consultation itself, we are concerned with some of the assumptions, as set out on page 7 -8 of the consultation and highlighted in bold below, as we are unclear as to where some of these assumptions have originated from and whether they are in fact valid assumptions at this time.

d) Sites will be located within zones, see Table 1 below. these will be large areas (e.g. the Irish Sea Coast), typically including several sites. *[Table 1 states that the selection of location of offshore zone wherein wind farm sites (including Transmission assets) could be developed as well as the identification and appointment of exclusion zones (e.g. military, shipping, fishing etc). In all options, the responsibility for this will be undertaken by DHCLG / DCCA]. When will these strategic Maritime Areas be identified? It is unclear when these zones will be identified, confirmed and whether timing could become a barrier. Moreover, we believe that future Grid Development Policy should be developed independent of planning policy (e.g. such as marine zoning) as these may change over time.*

e) All offshore assets are built to TSO transmission standards and compliant with Grid Codes. *[We propose that this assumption should be amended, to: If Applicable and appropriate, all offshore assets are built to TSO transmission standards. Offshore shall be compliant to Grid Codes at the point of common coupling/point of connection as agreed with TSO/TAO. Derogations shall be allowed to be raised and appropriate support shall be provided by TSO/TAO to resolve the issue.*

h) EirGrid can seek to transfer grid connection ownership to the Transmission Asset Owner (TAO) in any option where the developer builds the asset. *- [This assumption must be clarified in advance of the development of the grid connection offer, given the impacts this could have on the cost of finance and financeability of the project.*

Furthermore, our responses to the consultation questions are predicated on the development of an enduring grid development policy for offshore wind, which will be in line with the Climate Action Plan (CAP 2019), and now the higher levels of offshore wind as set out in the recent Programme for Government), and that it would not apply to the delivery of the 7 **Relevant Projects and consented projects**, which are due to be managed under the transitional arrangements. This is critical to ensure there is no development and delivery hiatus between now and the date of the first (and subsequent) offshore RESS auction(s).

The timely conclusion of the recent EU Summit, and also the publication of the EU DG Energy's Roadmap and consultation into offshore wind are also important considerations within which the future framework for Ireland's future offshore potential should be assessed, we note in particular the reference to need for coordinated planning (highlighted in bold below):. The Roadmap document states:

*„ A massive scale-up of offshore renewable energy in Europe will require a sound assessment of its potential environmental impacts and a long-term regional cooperation and planning framework which brings together relevant Member States, National Regulatory Authorities, Transmission System Operators, renewable energy suppliers, local authorities, citizens and stakeholders. **Coordinated planning of cross-border offshore electricity grids development and onshore landing-points will be essential. The regulatory and support framework will need to ensure efficient and market based uptake of the energy in the onshore electricity system as well as to facilitate regional cooperation.** The sharing of experiences in auction design or cross-border cost-allocation could allow identifying best practices. An ambitious R&I to develop offshore renewables and grid technology is also important.*

The access to sea space will be a crucial factor in the development of offshore renewable energy. The strategy will propose ways to ensure the scale up in offshore energy can occur in a way that is sustainable, fair and respectful to other sea space users and natural capital, while considering the specific space constraints of each sea basin. Regional cooperation and European coordination will also be necessary to achieve results in this framework“.

If you have any questions regarding our response, please do not hesitate to contact me or our Senior Regulatory Affairs Manager, [REDACTED] Her email address is [REDACTED]

Yours faithfully

[REDACTED]
[REDACTED]
RWE Renewables Ireland

- 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?

Criteria for Cost levels considers both:

- *Minimising infrastructure costs*
- *Minimising cost impact on Irish consumers*

Of the cost drivers outlined, we agree that a plan led approach (options 3 & 4) is most likely to result in the lowest level of infrastructure costs, primarily driven through the need for extensive onshore grid reinforcements. The cost comparisons provided suggest a high likelihood that a TSO led approach to all transmission asset costs would be more cost effective, other than in the development of the Offshore High Voltage Station.

We note also that there are likely to be some cost savings available if offshore transmission asset roll out is more closely coordinated with the development of onshore grid development needs – given the expected level of likely reinforcements required.

On this basis, we agree that a plan led approach for **enduring projects** would likely be better facilitated through a plan led model (options 3 / 4). There appears to be little differentiation anticipated in terms of Option 3 and 4 benefits associated with the plan led approach; we would however expect Option 3 to deliver a more favourable outcome, given that the offshore network assets would still be built by the developer, thereby enabling experienced global developers to deliver more efficiently, on the basis of existing their knowledge, experience, best practice etc. The risk and associated cost of outages to the offshore cable being managed by the developer rather than EirGrid are also likely to be lower.

All things being considered equally, we would expect the plan led model to minimise the cost impact on consumers, as it would reduce the risk and therefore cost of uncoordinated onshore grid developments. We note the reduction in PSO levy costs which would arise in the Plan led model option 4 may be of greater benefit for the consumer, given the need for developers to account for the costs of the offshore network within their RESS bids rather than the costs being covered within the network tariffs, although there would still be costs that flow through to the consumer.

Overall, we would support the conclusions within the report that a plan led model would likely be marginally better than a development led model for the enduring solution, but we do not believe there is a significant difference between the options.

We believe the most influential driver will be ensuring the optimal roll out and coordination of onshore grid developments, both because of the anticipated increase in reinforcements needed to accommodate both the higher 5GW offshore wind target (and in future the

potential 30GW offshore potential from the Atlantic coast) as well as the need for additional onshore wind capacity.

In our view, Option 3 has more advantages associated with it (e.g. enabling experienced developers to leverage their existing experience, supply chains, etc.) to construct the offshore assets compared with option 4.

- 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?

Criteria for environmental impact considers both

- *Minimising cumulative effect on the environment*
- *Reducing the impact of the power system on the environment by achieving targeted renewable developments*

With respect the environmental impact, we agree with the Navigant report's finding that there is little to distinguish between the likely environmental impacts associated with a developer led or plan led delivery for the Enduring Projects.

Given that the majority of Relevant Projects and consented projects under development are situated off the East Coast, some of which will be able to be connect to the current ca. 1.5GW onshore capacity available, and the nearshore locations of most of the Relevant Projects, there is less likely benefit of adopting a plan led delivery model for the Relevant Projects in the short to medium term.

However, given the recent announcements regarding the increased 5GW total for offshore wind by 2030 and the clear direction to enable Ireland to benefit from the excellent wind resources located off the West Coast of Ireland; which will likely require floating turbines, we believe a plan led approach for the enduring scheme will be required. This will be especially important in the future when the West coast is assessed and developed, given the potential for savings from a shared hub approach further offshore and limiting the number of landfall sites on the West coast.

For the developer led approach, we believe there is little to differentiate between options 1 and 2, other than better coordination of the planned onshore reinforcements, potentially setting a mandatory distance from shore under option 2 (intended to bolster social acceptance) and the reference to including grid parameters in offshore auctions.

We do have some concerns with the proposed "blanket approach" to setting a mandatory distance from shore which in and of itself may not account for the specific coastal requirements, although we would expect that the creation of marine spatial zones which would be undertaken by the state body across all of the options would be a better route to ensure site specific protection.

We also have concerns with the reference to including grid parameters in offshore auctions. On one hand, it introduces the risk that connection methodologies could substantially change post auction which introduces a significant level of uncertainty for projects in terms of their consent processes and risk of the need to re-consent elements of their projects which is unacceptable at this point. On the other hand, the proposal could have benefits where it is introduced to create a level playing field in terms of the allocation of east coast grid. This would be particularly relevant in terms of grid hoarding by projects, the avoidance of which is a principle we fully support.

It is critical to note that delivery of onshore grid reinforcements cannot be delivered in anything approaching a reactive manner – the stated targets have been clearly signalled by government and these are soon to become legally binding targets. Therefore, it is clear that between 3.5GW and 5GW of capacity is required to be delivered primarily on the east coast and the TSO/TAO should be mandated to develop the required transmission upgrades in parallel with Relevant Projects in the near future (i.e. not in parallel with or post auction).

Whichever approach is taken, it will be critical to ensure the EIA activities needed to remain compliant with the relevant EU and national legislation, set out the ways in which any environmental harm can be avoided, reduced and where still required, mitigated.

- 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?

Criteria for future proofing and technologies considers

- *Decisions today should not cause issues post 2030*

We note that there is ongoing and considerable uncertainty regarding the future designated marine zones for offshore renewables and how the future proofing requirements would / could manifest – and in relation to what timeframes.

Given the differing timescales, stages of development and requirements for the Relevant Projects; which must remain on a developer led basis, it is challenging for developers to know when such future proofing requirements could be established and also how these would / could interact with new low regrets onshore transmission reinforcements required – beyond those already identified (such as the North South Interconnector, CP966 and CP1021).

In order to ensure the requirements for future compatibility and a holistic approach to system development can be started now, clarity on the grid connection methodology to be used for the Relevant Projects must be provided ASAP. The CRU and EirGrid must ensure they both account for the need for a revised approach to the transmission development plan process, to take account of the need for the higher target of 5GW offshore wind as well as the likely developments to bring the ca. 4GW of

onshore wind onstream before the 2030 deadline, as set out in the CAP and Programme for Government.

With regards to the wider technological potential of Power to X, Tidal Range and Tidal Flow technologies, given the uncertainties regarding the likely timings and the need for more demonstration / project pilots, we would anticipate a plan led approach could be more beneficial, as the grid development would be coordinated with the funding of pilots, although we would note ensuring developers have sufficient freedom to innovate will be critical to enabling Ireland to develop competitive advantages in these new areas.

Overall, we believe that a centrally led option will enable Government and the TSO to better plan delivery for the longer-term; preferably Option 3 would be progressed as it likely provides the greatest flexibility and ability to deliver system future proofing, thereby better facilitating future proofed solutions. It would also provide the Irish Government greater transparency and opportunities to fast track trials for new technologies (such as floating wind, tidal and wave) if any specific needs can be factored in early / or allow reduced grid cost considerations for the developer.

- 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?

Criteria for required infrastructure considers

- *Effective use and coordination of onshore and offshore grid development*
- *minimising onshore grid reinforcement needs (interface/ planning /coordination)*
- *limitations related to largest single infeed requirements*

We agree with the observation within the Navigant report that developing and delivering up to 5GW of offshore wind (alongside additional onshore wind and solar generation in line with the CAP targets) will require significant new infrastructure assets to be built and onshore grid reinforcements delivered. To ensure there is a coherent approach to planning, we believe it is critical that EirGrid along with ESB Networks sets out its vision for the future grid requirements which accounts for all the likely infrastructure developments required to meet the Ireland's decarbonisation targets. This must go beyond simply accommodating the additional capacity required but should also include consider future demand requirements and associated system services in a holistic manner, rather than a piecemeal approach.

EirGrid must begin the planning process for the no regrets onshore infrastructure requirements now, to ensure projects can connect and export during the second half of the 2020s, and that any anticipatory investment that is required to meet the baseline CAP requirements, as identified following the TES process in 2019 should be expedited and approved within the PR5 submission as a matter of urgency.

With regards to the issue of the single largest infeed, we note that the Navigant does not suggest any specific benefits to either a developer or plan led option, although we would anticipate a plan led approach would consider the likely required level of reserve and other system service and could factor these requirements in at an earlier stage.

Of the associated variables, we would anticipate the ability to coordinate and minimise delays to the onshore grid connection would provide the biggest benefits.

- 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?

We would note that since the drafting of the Navigant report, on 19th May 2020, 7 Relevant Projects were confirmed by Ministers, and therefore our response is predicated on the basis of those 7 Relevant Projects and consented projects (which equates to ca. 3.4 - 4.2 GW as noted in the EirGrid meeting on 16th July), rather than the ca. 10GW as suggested in the Navigant report (section 2.4).

It is clear that of all the options available, the developer led options (1 & 2) would deliver the most satisfactory outcome in terms of ensuring compatibility with the current 7 Relevant Projects. Whilst option 1 would provide the most seamless transition, we believe option 2 (whereby the zones are selected by the State Body) and proactive, coordinated onshore grid planning is undertaken by EirGrid, but the majority of the pre-development work continues to be led by the developer would provide the best overall fit, in terms of ensuring that the enduring regime can account for wider Marine Spatial planning requirements and also reduce conflict with other stakeholders / maritime users.

We believe an important consideration will be, how (in future) would the Relevant Projects, which are currently being progressed under a clear developer led model, with the expectation of full transition into the MPDM framework would be treated, if they are unsuccessful in the first offshore auctions, given the current Transitional Protocol makes clear that the awarding of a MAC is dependent upon the successful bid within a competitive auction.

We urge that a decision be taken as soon as possible on future auction design to incorporate the opportunity for the 7 Relevant Projects to be eligible to bid into at least the first and second offshore auctions, to ensure competitive pressure is maintained, to enable the timely delivery of the generation and to avoid any future construction hiatus.

That said, we do not fully agree with the assessment in the Navigant report that a plan led approach would be incompatible with the Relevant Projects (assuming they were unsuccessful in a future offshore RESS auction), as there are opportunities for a transition from the developer led to a planning led regime, assuming the projects are located in an area likely to be designated for offshore renewables. (This was the case in Germany when

they transitioned from a developer led to a more centrally planned, and eventually fully planned model).

The planning approval which would be granted by An Bord Pleanála will need to take into account the suitability of the site in advance of the marine planning decisions, as well as the EIAs which will be undertaken as part of the current Relevant Project work.

So long as the 7 Relevant Projects are allowed to continue on a developer led basis - given the maturity of the current projects and the risk of delay if the project approach were changed, we do not believe the need to ensure compatibility with those schemes should be considered a central criterion upon which the decision for the **enduring** scheme would be assessed, as that could risk further policy uncertainty, and given the likelihood of additional developments on the East Coast (beyond the Relevant and Consented Projects already confirmed) it would seem unlikely that there would be any direct relevance of establishing such criteria.

- 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?

Criteria for social acceptance considers both

- *Increasing social acceptance and public engagement*

With respect to this key driver, it is difficult to estimate how much better (or worse) a plan-led delivery option would be, given only 25MW of offshore renewables have been developed in Ireland to date as well as the risk of cumulative dissatisfaction from either a larger project basis or referencing previous poorly managed engagement. For the enduring projects (not the 7 Relevant Projects), we would expect that both the plan led and developer led models would work, so long as clarity is provided on future network reinforcement needs, and that all parties ensure that there is effective stakeholder engagement and participation with regards to the siting of future offshore renewables and associated onshore grid reinforcement.

Based on our years of experience of successfully delivering offshore wind farms, we firmly challenge any suggestion that a plan led approach would [usually] result in better outcomes than a developer led one as the necessary engagement will be site and project specific (even in the plan led scenarios) given the differences in population / visual amenities, existing commercial impacts etc. It is too simplistic to suggest good or bad practice can be considered symptomatic of either a developer led or more central approach.

On balance, we would expect experienced global developers, who have a track record of delivering high levels of public engagement and social acceptance, to be better able to deliver tailored community engagement and ensure the minimum standards of community engagement are delivered, with the opportunity to deliver best in class engagement as a potential commercial consideration.

It is also worth considering that having established technologies in place tends to reduce the level of consumer concern and antipathy, i.e. once people can see and experience the offshore renewable site, in our experience, there are significantly increased levels of support and positive engagement. In our experience this has been due to better than feared experiences (both in terms of the disruption caused during the construction phase, visual impacts) as well as the demonstrable economic benefits local communities have received, typically from the economic investment in the local area, and local procurement, improved skilled job opportunities and apprenticeships as well as the positive impact of dedicated community benefit funds.

We do not believe that it is possible to determine whether a developer led or plan led approach would be optimal, as both can be done well and deliver the necessary increased levels of social acceptance; under both approaches it could also be done badly and be seen to ride roughshod over local community concerns, particularly if that local community would be the most directly impacted.

- 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?

Criteria for facilitating the timely development considers

- *Achieving the climate ambitions as stated in the CAP and the timely realisation of at least 3.5 GW offshore wind capacity by 2030*
- *Ensuring speed of delivery of offshore wind projects*
- *Ensuring capacity to deliver from involved parties*

Again for clarity, we would reiterate that this consultation response is predicated on the basis that the 7 Relevant Projects and projects with Consent; which were confirmed in May 2020 would continue to be developer led, with the developer responsible for the construction of the offshore assets, working with EirGrid to coordinate delivery with any necessary onshore grid developments. We recognise that decisions on lease costs and other considerations are still outstanding, so we would urge that this is clarified as soon as possible.

There are inherent uncertainties in both the developer led and plan led grid delivery options with regards to the timely realisation of the climate ambitions in the CAP and the target for 70% of final demand to be met through renewables (with at least 3.5GW of offshore wind) - as well as the additional 1.5 GW offshore wind announced in the recent Programme For Government.

On balance, we would expect a developer led approach could deliver more quickly (given the commercial imperative to start generating as soon as is possible), coupled with the existing experience of most of the developers of the 7 Relevant Projects and site investigation work and public consultations already underway. We note that option 3

would also enable developers to build the offshore grid assets, and would therefore enable the expertise, and existing supply chains to provide capacity, potentially sooner than option 4, within which the TSO /TAO would be responsible for building multiple offshore assets.

However, beyond the first 7 Relevant Projects & consented projects and the need for substantial onshore grid reinforcement, it is not clear to what extent the benefits of a developer led approach would outweigh the benefits of a more plan led approach to onshore grid planning and investment.

As we have previously articulated, it will be critical and a low regrets option to ensure EirGrid is instructed to start the planning and development analysis of the whole system to deliver the CAP and programme for government targets to ensure that the required onshore community planning, engagement and permitting can begin now, so as not to delay future projects (irrespective of whichever party ultimately leads the development of the offshore grid).

Assuming a proportion of the 7 Relevant Projects continue to be developed, noting the need for up to date EIA data and community consultation, there are several critical actions which will need to be will in any case be required for the enduring projects (irrespective of the future grid development options chosen); these would include (and are not limited to): -

- Finalising the National Marine Planning Framework
- implementing the Marine Planning and Development Management Bill and associated guidelines and secondary legislation,
- developing the necessary additional terms and conditions for offshore technologies within RESS auction and realistic auction timelines
- Procuring / training sufficient staff at An Bord Pleanála (ABP) to be capable of managing the planning development consent process
- Designating marine spatial zones

Those timescales (potentially 2+ years) will allow sufficient time for the additional resources and expertise needed for a more plan led delivery system (site selection, investigation and permitting) to be run in tandem. It would also likely provide sufficient time for EirGrid/ ESB Networks to develop the necessary levels of expert staff and begin the procurement processes to manage such a significant infrastructure development programme.

We agree that that there are concerns as to the current resource capability of both EirGrid and the state bodies to select sites and provide the initial site investigation and permitting work, required for in the pre-development. That said, assuming that the 7 Relevant Projects are supported and the above actions are taken, then we would anticipate the first site would be able to start generation by 2026, the associated capacity of successful Relevant Projects will certainly support the learnings and development necessary to

enable a more centrally planned approach to be bedded in, without the risk of future development / construction hiatus with the impacts on the wider 2030 targets.

As we have seen in different jurisdictions, such as the Netherlands and Germany, transitioning to a more central led delivery in a relatively short time is achievable, but it will require sufficient investment in the necessary resources and political will to deliver the necessary changes.

We also welcome the recent press release from DCCAIE, confirming that State Aid approval for the RESS scheme has been granted with auctions planned until at least 2025. Having clarity on the volumes to be procured and the timings for the offshore auctions will also be very important in terms of post 2025 arrangements.

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

Of the seven drivers identified in the Navigant report, we would note that the need to ensure the sustainable development of an Irish offshore wind industry would, by definition include the intertwined aspects of economic, environmental and social impacts, and that these will be required as a minimum, irrespective of the eventual grid connection option.

In that context, we believe the most important drivers are (with 1 being the most important):

1. Required infrastructure,
2. Facilitating the timely development of offshore wind capacity to achieve the 2030 targets.

With regards to the other drivers, we would suggest the following rankings would provide context:

- 3, 4, 5 Sustainable development (which would incorporate the following 3 drivers)
 - a. social acceptance
 - b. environmental impact
 - c. cost levels
6. Future proofing of policies and technologies
7. Compatibility with Relevant Projects - (we would suggest this is likely to be the least important driver, as we consider meeting the 2030 targets will require the Relevant Projects to proceed and therefore, the grid will options will need to be designed to be compatible.

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

In our view, it is critical that Ireland develops an indigenous offshore wind energy industry, given the extensive and excellent wind resources available, together with the extensive marine area. These resources are coupled with the current physical and technological situation that Ireland is an Island market, with limited interconnection with other electricity markets (and no direct link to the EU market until at least 2026), fast depleting indigenous natural gas resources, with forecasts of strong and consistent growth in energy demand.

We believe Ireland's indigenous industry could be best developed through the provision of the necessary long-term clarity regarding volume and timings for RESS auctions, with ringfenced or technology specific auctions for offshore (similar to the Pot 1 and Pot 2 approach in the UK for mature and less mature technologies).

Delivery of all the necessary legislation and regulatory frameworks and economic investment in local infrastructure and wider supply chain (including ports, network infrastructure, education and skills development and contribution to local economies). Clarity on the intended Grid Delivery options and if relevant, details of any transitional approaches to be used. More than anything, there needs to be a coherent and demonstrable plan and commitment to delivery, including provision for investment and funding in the next Annual Budgets, setting the medium to longer term commitment.

Given the global opportunities available for offshore wind, it is critical that the positive signals for decarbonisation and increased renewable electricity generation contained within the Programme for Government agreement are translated and transferred onto the statute book.

There is significant potential for floating offshore wind to develop within Ireland and unlike fixed-bottom structures, there are currently no countries who have demonstrable (and exportable) leadership within this space. This could provide Ireland with an opportunity (time limited) to develop a world class development opportunity and future industry.

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

There are number of ways onshore and offshore grid connection can be optimised. We would recommend ensuring the excellent collaboration which has been possible to date between industry, TSO, TAO and the regulator continues as projects continue their development.

As previously stated, our expectation remains that the 7 Relevant Projects and consented projects will continue to be developer led in the near to medium term, building on a point to point, radial grid basis with the acceptance that:

a) not all the Projects will be successful at auction and

b) not all unsuccessful projects will be able to seamlessly transition into the final grid design following the Transitional Protocol approach.

The connection offer process should allow collaboration between EirGrid and the Relevant Project developers to ensure the optimum design of grid connections. The grid application process should allow developers and system operators to interact to jointly decide the optimum connection capacity/MEC having regard to the capacity of the network to receive the power in the short, medium and longer term.

Pending the decision on grid delivery options, we would strongly recommend that EirGrid initiates wider analysis of the future grid needs, likely reinforcements that will be required following the anticipated increase in speed and scale of decarbonisation, taking into account the known volume of renewable generation, and the least regret solutions to address future system needs.

EirGrid must identify early and start the permitting process in 2021 for the onshore grid reinforcements which will be required for the Relevant Projects. EirGrid and ESB Networks need to be supported with funding and resources from the Price Review 5 process to progress early with the consenting and development of these works.

In relation to the development of common hubs for adjacent projects, this could be appropriate for future **enduring** projects, especially if (within options 2, 3 & 4) the projects were in locations where groups of projects may be clustered / and or where environmental/ impacts on other sectors are likely to be a particular concern.

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

We do not have any additional specific areas of consideration regarding the offshore grid design that would reduce the cost to the consumer in relation to the choice of the offshore grid model. However, we do believe the following improvements would help reduce the overall cost to the consumer:

- Ensuring sufficient competitive pressure is available within the RESS auction, particularly for the Relevant Projects intending to compete in the first [and /or second Offshore auctions timing time dependant].
- Revert RESS back to Pay As Clear.
- Encouraging CRU and EirGrid to swiftly develop the new methodology for determining and delivering Firm Access (as set out in the recent CRU decision on ECP2).
- Ensuring the timely delivery of increased electrification of transport and heating, will help provide sufficient investment drivers to continue to develop and deliver the volume of new renewable capacity that required.
- Ensure the coordinated procurement and development of System Services necessary to operate a low carbon network capable of operating at the proposed SNSP levels (90% by 2030).

We would also add the need to resolve the outstanding issues, identified in the recent SEM consultation regarding the implementation of the Clean Energy Package requirements. This will include how in future large, offshore and (onshore) renewable projects will be able to access the SEM in a market-based way. Those decisions will also provide insight as to how in future developers should account for the risk of increased constraint and curtailment redispatch, which must in future be managed in a market-based way.

- 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?

We would suggest that in any grid development model within which the developer is not responsible for the construction of the offshore grid assets, there will need to be some form of compensation arrangements in place should there be any delay to the grid delivery date, as the developer must not be penalised for any failures outside of its direct control. It will also be important to ensure that any future Terms and Conditions for offshore RESS Auctions recognise that such a risk is outside of the developer's purview and should there not be considered as a failure to meet any associated long stop dates by the specified time. In such circumstances, compensation must be payable on the full amount of lost revenue – as otherwise the risk of this will have to be included in future RESS bids, increasing costs to consumers.

We would note, based on our experience of the UK model where there are options for the developers to manage and deliver the grid offshore infrastructure rather than allow the OFTO to build, they will do so, given the commercial risk associated with delays to the grid.

Once the offshore assets have been constructed, unless they are owned and operated by the developer, any outages / non-availability of the offshore assets - other than for routine, planned maintenance (maximum of ca. 5 days p.a.) should be compensated for both the lost revenues and lost support subsidy – similar to the models used in Germany and the Netherlands

In any future variant of the offshore development model, if the TAO / TSO were to be responsible for the development and construction of the offshore assets, their future revenues and any associated bonuses / penalties must be explicitly linked to the timely delivery and optimum operation and maintenance of the offshore connection assets.

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

We do not have any additional drivers to raise, but we would note that the need for clarity on the capacity and capabilities for the necessary levels of legislative and regulatory change what will be needed to delivered, in a timely fashion should not be underestimated, and ensuring the Relevant Projects are able to continue to be developed must be

considered a critical criteria, given the time required to bring offshore projects to FID and eventually to generate.

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

Overall, excluding the 7 Relevant Projects and consented projects, which must all be managed on a developer led basis; we believe that for the longer-term certainty and level of onshore grid development and delivery required, that a more centralised, plan led delivery would be optimum.

We believe that with sufficient political will and public support to tackle the climate emergency, deliver the necessary levels of decarbonisation the necessary legislation can be passed swiftly, authorising the set-up of the new government bodies that will be required to manage the site investigation and permitting of future offshore renewables sites (not just offshore wind).

Our response is in part predicated on the understanding and appreciation that entire new regulatory and legislative regimes will be required to be set up to manage the development of offshore projects beyond the Relevant Projects already confirmed. We do not believe that it would be in the interests of the Irish offshore wind industry to continue to face uncertainty and delays with regards to the development of grid policy (on and offshore) and with the significant increases in the volume of variable generation, ensuring a coordinated approach to both on and offshore grid planning and development will be key. Please note that this should also include a coordinated approach to the procurement of the necessary system services that will be required to ensure a stable and secure grid to support the longer-term target of net zero by 2050.

Overall, we believe option 3 would deliver the most benefits; primarily because the developer would still construct and be responsible for the operation and maintenance of the offshore grid assets (unlike option 4). We believe this will ensure future competitive pressure can be brought to the grid delivery process and would also avoid the TAO / TSO from having to significantly increase its capital expenditure and resources to deliver multiple offshore assets within a limited timeframe.

Option 3 would also not prevent any future option 4 variation for activities post 2030 - particularly to capitalise on the floating wind potential in the deeper seas off the West coast.

15) 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?

With regards to the start-up phase actions that are no regret across all 4 options, we agree that the assessment on the current hosting capacity of onshore grid and offshore zone selection will be required, irrespective of the eventual model option chosen.

Neither the consultation document, nor the Navigant report are entirely clear as to what “leveraging the development of the Relevant Projects in the short term” might mean. So, to be clear – we agree that there are some clear opportunities to leverage the development of the Relevant Projects, which we have listed below. However, these do not include any suggestion of subsequent changes to infrastructure standards or future proofing (providing additional capacity beyond the requirements of the individual project) unless this is contained within the connection agreement methodology now.

- Policy and legal resource for CRU, DCCAE & DHCLG to manage the significant level of new regulations, legislation and guidance that will be required for both the Relevant Projects and Enduring scheme.
- Resource requirements for EirGrid & An Bord Pleanála – both organisations will need to employ additional resources to manage and develop processes for the permitting and approval of both the offshore transmission grid assets and the onshore connections.
- EirGrid begin planning and permitting of onshore reinforcements required (as identified in TES 2019)
- Future planning of the system requirements and need for anticipatory investment (low regrets) investment that will be required to deliver beyond 1.5GW of offshore capacity on the East coast to meet the interim on and offshore renewables targets.

As referenced in the Navigant report, both Germany and the Netherlands have moved away from a developer led approach to a full, centrally planned offshore grid system (with centrally planned auctions).

Both jurisdictions can offer insights and learning. In the case of Germany, there was a long transitional period, incorporating a move from developer led projects (site selection and grid). In Germany, following the early developer led model (feed in tariff, not competitively procured auctions), the number of connection and sites became unmanageable and in 2012 a systemic grid planning for 8 clusters within the North Sea was introduced. This approach was further refined in 2017, with plans set out for a full centrally planned system (coordinating the grid build out with auctions for volume and delivery). Sites which already had grid connection offers, and could reach COD by 2021 were allowed to continue under the old system.

Furthermore, two transitional auctions were introduced for sites within the specified clusters, which had met the necessary permitting milestones. However - if they were not successful within those 2 transitional auctions, the developers lost their project rights; (termination of permitting process), but they could obtain a “*last call option*” in return for handing over their site information to the federal agency to be used if those sites were tendered again in a future centralised auction.

This transitional approach provided an opportunity for developers to derive some value from the previous DEVEX in exchange for handing over their project’s site investigation /

relevant information. Whilst it may be considered a loss of value, it could be seen as a fairer approach for developers than the one taken in the Netherlands.

In the Netherlands, the original developer led approach had also led to multiple site developments and an unmanageable level of grid connection offers, with a very small proportion of sites actually being developed, and in 2013 the regime was changed to a fully centrally planned model for grid build out, timings of site specific auctions to deliver specified volumes. Unlike the transitional regime in Germany, all existing developers lost the right to their sites (and their associated DEVEX).

It is however worth noting that the Dutch experience enabled the first tender in 2016 (following the decision in 2013) with all pre-development work and information available to allow bids, for delivery in 2020. Close collaboration between the Government, TSO, regulator and industry ensured that the right information was available to be provided to developers to make informed bids, and sufficient resource was provided to ensure the necessary regulatory and legislative changes were introduced in order to meet the Roadmap to 2020 targets.

Whilst the Netherlands experience may be seen as a "*ripping the plaster off*" type approach, their transition has been much quicker, with the first centrally planned projects at Borssele starting to generate in April 2020.

Depending on the degree of work that has already been undertaken by the Irish Government on likely marine spatial zoning, the German transition model could work, providing an interim step for projects that have started development within the "right" area to continue and have already achieved significant permitting milestones (in terms of met ocean studies, EIA work being completed).