

**Ofgem**  
10 South Colonnade  
Canary Wharf, London  
E14 4PU  
United Kingdom

Submitted via e-mail: [Offshore.Coordination@ofgem.gov.uk](mailto:Offshore.Coordination@ofgem.gov.uk)

21.09.2021

## **Offshore Transmission Network Review (OTNR)**

We refer to the OTNR consultation issued 14<sup>th</sup> July 2021 and welcome the opportunity to respond to the consultation.

Equinor is a global energy company, employing over 650 people in the UK. It is the UK's largest supplier of crude oil and the largest supplier of natural gas, meeting more than 25% of UK demand. It operates the Mariner oil field and three offshore wind farms including Hywind Scotland, the world's first floating wind farm. Equinor and partners are building Dogger Bank, the world's largest offshore wind farm.

Equinor shares the objective of the OTNR and agrees that a coordination of offshore transmission assets will be key to enabling the necessary development of offshore wind to meet the 2030 target and the net-zero target of 2050. The current consultation addresses important issues related to early opportunities, 2030 projects and early MPIs.

### Early Opportunities

Equinor shares Ofgem's view that establishing an Anticipatory Investment (AI) system that is fit for purpose will be key to enable and incentivize shared offshore transmission infrastructure. We have however concerns about Ofgem's proposal on how to share the AI risk between developers and consumers as described in the consultation where it appears to be the position that it is a developer that connect later to a shared offshore infrastructure system should be responsible for AI. It is our belief that the proposal as it stands will not promote shared offshore transmission infrastructure. It is important to take into account that the owners of projects that will connect later in time to a shared offshore transmission asset will not be able to commit to substantial levels of AI before the projects have received a CfD and the owners have made a final investment decision. The consequence is that AI needs to be underwritten by the consumer and socialized until the later project starts generating.

Furthermore, there is a need to clarify the principles for AI and the allowed level of AI at an earlier point in time than at the OFTO transfer stage since the cost of the transmission infrastructure is a significant part of

the investment in an offshore wind project and thus will impact the value of the project. The principles and allowed level of AI needs to be clarified in due time ahead of the relevant CfD Allocation Round to reduce risk for investments in shared infrastructure.

To ensure that the AI system is fit-for-purpose for Early Opportunity projects we suggest that the following changes are made:

- **Gateway Assessment Process:** A Gateway Assessment process should be introduced ahead of the CfD tender process for shared offshore transmission assets that will or may depend on Anticipatory Investments. The developers of the offshore wind projects should submit and get approval in principle of the development concept for a shared infrastructure including the proposed cost levels and split of costs between the projects. This would need to be approved by Ofgem in due time ahead of the CfD tender process. The aim is to reduce uncertainty for developer. For the developer, it is too late to assess Anticipatory Investments at the time of the OFTO transfer process.
- **Anticipatory Investment Risk:** Until the owners of a later project have the certainty of a CfD and has passed Final Investment Decision, it is necessary that the project's share of Anticipatory Investments is underwritten by the consumer and that the costs are socialized until the later project starts generating.

These changes to the system for Anticipatory Investments will in our view be crucial to be able to facilitate shared offshore transmission infrastructure. In addition, it is our view that the CfD system should be adjusted to allow for projects planning shared offshore transmission infrastructure to bid jointly and/or have contingent / dependent bid so that the projects will have the certainty of receiving a CfD at the same time.

We will in a separate submission present project and developer specific background information to support our consultation response related to AI for Early Opportunity projects.

### Pathway to 2030

We are supportive of the aim to coordinate projects from TCE Round 4 and CES Scotwind, and to assess this in light of a holistic network design. At the same time, it is important to ensure that the projects are not delayed and are able to contribute to meeting the 2030 targets. For projects to be delivered by 2030, the early design work will need to be undertaken, at the latest, within the next 3 years, and construction by the second half of this decade. Any of the proposed delivery models needs to take this into the account.

In our view it is important to retain a delivery model where the developer design and build the shared infrastructure and where an OFTO operates the system. Furthermore, it is also important to retain the option to build radial connection according to today's system where this is the optimal solution.

### Multi-Purpose Interconnectors

Multi-Purpose Interconnectors (MPI) will be important to ensure that there is a cost-effective development of new offshore wind farms and interconnectors. The regulatory framework for MPIs will also depend on development in the connected countries, including development in the EU framework. Hence, it is important for the first MPIs to retain flexibility in how these are organized to be able to enable early developments of these projects.

We have in the appendix included our detailed response to the relevant questions.

We would welcome the opportunity to present our response to the consultation in more detail.

Yours sincerely,

  
Torkel Sjoner

Equinor ASA



## Appendix: Detailed response to the Consultation Questions

### Early Opportunities questions

#### **Question 1: Are there any concepts we have not identified developers may wish to progress?**

In our view the identified concepts provided by developers seem appropriate, however there are details and variations within the different concepts that Ofgem needs to make sure is covered within the same framework. The options cover electrical system coordination (integration) but there are also opportunities that can include physical coordination without or with a lower level of electrical system coordination, for example by sharing of cable corridor and onshore substation compound.

#### **Question 2: Should anticipatory investment risk be shared with consumers? If it should, what level of risk is it appropriate for consumers to bear?**

Consumers will benefit from shared infrastructure in several ways, e.g. by reduced impact on local communities, by less environmental impact and by reduced energy costs through cost reductions for the future energy system. Hence, we agree that anticipatory investment risk should be shared with consumers.

However, we have concerns with the proposed sharing of anticipatory investment risk in the consultation, in particular as described in Appendix 1 of the consultation document. It is important to take into account that the owners of projects that will connect later in time to a shared offshore transmission asset will not be able to commit to substantial levels of AI before the projects have received a CfD and the owners have made a final investment decision. The consequence is that to ensure that the system for AI is workable, the AI needs to be underwritten by the consumer and socialized until the later project starts generating.

To ensure that the level of AI that the consumer needs to underwrite and guarantee is appropriate, we propose that a Gateway Assessment process is introduced ahead of the CfD tender process for shared offshore transmission assets that will or may depend on Anticipatory Investments. The developers should submit and get approval in principle of the development concept for a shared infrastructure including the proposed cost levels and split of costs between projects. This needs to be approved by Ofgem ahead of the CfD tender process. The aim is to reduce uncertainty for developers and to ensure that costs are economic and efficient.

#### **Question 3: For concepts that intended to provide a wider system benefit, e.g. by mitigating an onshore constraint, how should the need for investment be demonstrated by the developer?**

No specific comments.

#### **Question 4: What options are available to developers in demonstrating a reasonable expectation they intend to connect to the system?**

For the Early Opportunities projects, we suggest that all offshore wind projects should be known projects and hold both an Agreement for Lease and a Grid Connection Agreement.

**Question 5: To what extent do you agree with our proposals to remove barriers to the Early Opportunity concepts? Please explain your answer.**

As described in our response to Question 2 we have concerns that the proposed approach to sharing of AI is not workable and will not promote shared offshore transmission infrastructure. It is important to take into account that the owners of projects that will connect later in time to a shared offshore transmission asset will not be able to commit to substantial levels of AI before the projects have received a CfD and the owners have made a final investment decision. The consequence is that to ensure that the system for AI is workable, the AI needs to be underwritten by the consumer and socialized until the later projects start generating.

A Gateway Assessment process for shared offshore transmission assets that will or may depend on Anticipatory Investments need to be introduced ahead of the CfD tender process. The developer should submit and get approval in principle of the development concept for a shared infrastructure including the proposed cost levels and split of costs between projects. This would need to be approved by Ofgem ahead of the CfD tender process. The aim is to reduce uncertainty for developer and to ensure that costs are economic and efficient. It is too late to assess Anticipatory Investments at the time of the OFTO transfer process.

While changes to the CfD regime is not a part of this consultation, we would however like to emphasize that this is an important factor in incentivising developers to coordinate. The CfD system should be adjusted to allow for projects planning shared offshore transmission infrastructure to bid jointly and/or have contingent / dependent bid so that projects sharing an offshore transmission system will have the certainty of receiving a CfD at the same time.

**Question 6: Do you believe a Significant Code Review is required to give effect to a potential decision to 'share' AI risk between consumers and developers?**

We do not think a Significant Code Review is required and are concerned that the current process for code changes might impose delays on the Early Opportunities projects. We would therefore recommend that ESO is given the responsibility to identify and bring forward the required code changes to facilitate for the Early Opportunities projects.

**Question 7: Do you agree with Ofgem's proposed approach to deliver the objectives of Early Opportunities workstream?**

Please see our response to Question 2 and 5.

**Pathway to 2030 questions**

**Question 8: We consider that a holistic design will result in a more coordinated, economic and efficient network. Do you agree? Please give reasons for your answer.**

Yes, we agree that a holistic design is required to give a more coordinated network and we also support that ESO is the most appropriate party given its current roles.



However, in introducing a system for the holistic design it is important to ensure that it does not jeopardize the timeline of the projects that has a delivery date within the 2030 timeframe.

We note that the Pathway to 2030 section in the consultation has limited references to how anticipatory investments (AI) will be assessed and who should bear the AI risk. It is important that Ofgem provides clarity on how AI will be assessed in Pathway to 2030. We refer to our answers to relevant questions in the Early Opportunities section of the consultation on this subject.

**Question 9: Do you agree with the planned work for a detailed network design offshore?**

Please see our response to Q 10.

**Question 10: Who do you believe is best placed to undertake the detailed design for assets that are in offshore waters?**

A detailed network design will require in-depth knowledge and experience in planning, designing, consenting, and constructing offshore transmission assets. Currently offshore generators have this competence and therefore is well positioned to undertake this work.

Depending on which delivery model is chosen other parties may also be relevant. We are however concerned about the TOs and OFTOs ability to build sufficient capacity and competence in time to be able to deliver on the government's goal of 40GW offshore wind by 2030.

A separate concern is also the timing of the detailed network design and possible delays to the overall timeframe. For delivery models 4 and 5 where the detailed network design will be a pre-requisite for an OFTO tender, this may result in a project hiatus of one year or more. Given the limited time available between now and 2030 this is a great concern.

**Question 11: Do you agree that the existing developer led model should be retained and applied where the HND indicates a radial solution should be used? Please explain your answer.**

We agree. The existing developer led model has proven that it can deliver radial solutions in a cost efficient and timely way.

**Question 12: Please provide your views on each of the delivery options we have described in this document. In providing your views, please comment on the issues we have raised. Please also give your views on the implementation issues we have raised.**

It is important that the delivery models are considered with respect to competence and capacity challenges, timing risk and incentives.

Delivery models 1, 2, 3, 4, and 5 all assigns project roles to parties who have not performed such work previously. Building competence and sufficient capacity will be challenging. It is important that Ofgem carefully assess if the ESO, TOs and OFTOs can acquire sufficient competence and capacity in the time available to reach the 2030 goals.

Delivery models 3, 4, and 5 all represent a significant timing risk. These models introduce project handover interfaces the industry has no experience with. This, in combination with the DND concern referred to in Q10, indicate that for Pathway to 2030 these three models should not be pursued.

Delivery model 1 and 2 may not represent the same timing risk as models 3-5, however there is a risk that the TOs do not have the sufficient incentives to provide a cost competitive infrastructure which will be necessary for projects to be successful in a CfD auction. Hence these models would depend on that the TOs can confirm competence and capacity as well as establishing appropriate incentives for the TOs to deliver the infrastructure on time and with an efficient and economic design. Similar incentive issues will also exist for delivery model 3 both for the TO and the OFTO.

Delivery model 6 is workable if Ofgem based on the HND can assess and approve any AI required. If certainty can be given from Ofgem on AI we are of the opinion that a first (leading) offshore generator could be able to take on this design, consent and construct a shared transmission system.

**Question 13: Please describe any feasible delivery options that we have not set out in this document.**

No specific response

### **MPI questions**

**Question 14: Do you think we are focusing on the right models at this stage, or are there other models we should be considering? Is it also necessary to consider the evolution of such MPIs from pre-existing assets? Ultimately, should Ofgem accommodate multiple MPI models (e.g. IC-led and OFTO-led) or just one? What factors influence your answer?**

The presented models seem appropriate and sufficient at this stage. Ofgem should accommodate both the IC-led and OFTO-led models for MPIs, as this might drive technology development and open up for different business models and make a better fit with other countries regulative landscape for such projects. The regulation should have sufficient flexibility to facilitate early MPI's.

**Question 15: Do you agree with this position with regard to ownership structures of MPIs under the current framework?**

This is consistent with our understanding of the existing legislation.

**Question 16: What are the commercial, operational and regulatory factors that would drive a developers preference for either the OFTO-led or IC-led MPI model? and do you envisage a different usage of the component assets of an MPI depending on the MPI model?**

From the OWF-developer point of view the MPI model should secure high availability at a low cost and priority of dispatch. It is also important that the regulation has flexibility for relevant parties to agree commercial terms beneficial to all. For early MPI's it is also important to focus on the model's ability to deliver projects within 2030, and thus both models should be pursued.



**Question 17: How would the line to shore (L1) be used in practice and what would you consider to be the primary and secondary activities from a practical perspective? Please provide views for both the IC-led and OFTO-led models, highlighting any differences between L1 usages across the two models.**

For both models we expect the MPI-project to be a part of a market solution where the physical flow on the MPI will be determined by how the electricity market clears.

**Question 18: Are there any barriers within the current frameworks, such as definitions within the CUSC, SQSS or other industry codes, that might prevent the line to shore (L1) being classified as either an OFTO or an interconnector while undertaking other secondary activities?**

No specific response

**Question 19: What are your views on the feasibility of adopting a regime that requires developers to submit evidence to support their licence application (for assets that form part of an MPI) and commit to regular performance reports? Would this be practicable, proportionate, and effective? Are there other options that work well for industry that we could explore further?**

No specific response

**Question 20: What are your views on the practicality of transposing obligations from one licence into another, which obligations would be the most important to incorporate into a remaining licence?**

No specific response

**Question 21: Do you think the exemption provision with the Act offers any solutions to licencing MPIs within the current framework, even if only a temporary solution until a potential enduring solution is implemented?**

No specific response

**Question 22: Are there any aspects of the priority dispatch and curtailment arrangements, the TCA, or the cross-border trading arrangements that are adopted in UK that might influence the choice of MPI models?**

No specific response

**BEIS Question 1: What do you consider to be the key challenges to the establishment and operation of MPIs in the UK presented by current and proposed regulatory requirements applicable in EU Member States or other countries which MPI projects may connect with, or by the TCA? (e.g. regarding the efficient operation of MPIs under both the Home Market and Offshore Bidding Zone approaches). Are there further domestic challenges to these possible market design options**

The EU framework for MPIs ("hybrid projects") are currently under development and will be important when establishing MPIs. For early MPI options it is important to retain a flexibility on how projects are organized and under which market design principle the projects would operate. The system for the early projects should allow for both a Home Market approach and an Offshore Bidding Zone approach. It is important that the framework also considers whether any support would be offered to the offshore wind generation (for



example through the CfD mechanism, ref question in the BEIS Call for Evidence<sup>1)</sup> and whether congestion income should be re-distributed between the grid owner and the offshore wind farm owner (as discussed in the EC Offshore Renewable Energy of November 2020<sup>2)</sup>).

<sup>1</sup> Enabling a high renewable, net zero electricity system: call for evidence - GOV.UK ([www.gov.uk](https://www.gov.uk))

<sup>2</sup> EU strategy on offshore renewable energy | Energy (europa.eu)

