

OFGEM Consultation – Changes intended to bring about greater coordination in the development of offshore energy networks (July 2021) – Siemens-Energy Replies to Questions

Returned by N Platt, Siemens Energy, 7th Sept 2021

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

We have the following comments about this section:

We see from our work with Windfarm Developers that offshore coordination has not been taken forward so far as there has been no commercial benefit offered to Developers to offset the additional risk of either providing additional facilities or to relying on others to have a transmission link available for when they are ready to export their first power.

If a bootstrap was in use to provide an alternative path for power transfer within the onshore network to relieve onshore system constraints then it should be noted that the capacity of the export system to transfer offshore windpower would be reduced. Would the offshore generator then be compensated for loss of revenue if they are unable to export their power and has this been taken into account in the modelling done so far?

As the weight of offshore platforms increase there is usually an increase in cost per tonne as there is often a reduction in the facilities (due to the platforms larger size) available for construction, transport and installation. Hence separate platforms may be the most economic solution especially when considering the value of additional losses in a potentially extended WTG array system needed for a centralised platform solution.

It should be noted that a Multi-Purpose Interconnector cannot be used to simultaneously import power from another country and a windfarm unless it has been oversized for this purpose.

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

If the anticipatory investment is for the benefit of consumers (and that includes the reduction of the number of assets as well as overall cost) then consumers should bear at least some of the cost of that anticipatory investment.

If a Developer builds a transmission system that includes Wider Network Benefit Infrastructure or Anticipatory Investment for a potential future Connectee who is not the same Developer then the first Developer should be assured that they will get the full cost of the WNBI or AI reimbursed at the OFTO transfer point.

Questions 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?

If the Holistic Network Design produced by the ESO indicates the need for WNBI or AI and the Developer is willing to incorporate this in their transmission system design then the Developer should be able to simply use the HND as demonstration of the need for the investment? The

proposed additional investment can be proposed by the Developer and then checked and authorised by OFGEM/ESO. If OFGEM/ESO do not agree with the proposed additional investment then OFGEM/ESO should propose an alternative.

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

A Grid Connection Agreement

Question 5: To what extent do you agree with our proposals to remove barriers to Early Opportunity concepts?

The proposals do not properly address the barriers that have stopped coordination and introduction of WBNI so far – it is still not clear if the Developer carries some of the risk of installing infrastructure that is not directly needed for their own project. It should be at least cost and risk neutral for the Developer and if anything should provide a tangible benefit such as a reduction in TNUoS charges if the AI is incorporated.

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

Certain aspects of the Grid Code and the compliance process may require a SCR depending on the level of coordination that would be required/achieved (e.g. requirements on performance, particularly infrastructure planned for future project developments), It would be prudent not to underestimate the complexity of changes required (e.g. GC0141)

Question 7: Do you agree with OFGEM’s proposed approach to deliver the objectives of Early Opportunities workstream?

When there is a clear system benefit and development case for AI the Developer should be reimbursed for any costs that they will not gain a benefit from and if they will share the benefits then they should receive re-imbursement in proportion to the benefit they and others will receive. A worked example may help clarify the proposal.

Question 8: We consider that a holistic design will result in a more coordinated, economic and efficient network. Do you agree?

A holistic design should result in a more coordinated and efficient overall network (onshore + offshore). The economic benefits of a coordinated network are yet to be made clear – the details of the analysis of coordinated vs uncoordinated network performed so far have not been made public so cannot be scrutinised.

When implementing a coordinated network it is essential that innovation by suppliers is possible. The Holistic Network Design should provide a functional requirement only and should not attempt to over-specify the solution to provide an opportunity for innovation and hence cost reduction.

Unrestricted

During analysis of the benefits of the holistic design care should be taken when creating cost assumptions for technology that is not already in use e.g. multi-terminal offshore platforms. Supply bottlenecks for new technology should also be considered.

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

The detailed network design should be undertaken by the party delivering the offshore assets – design and delivery responsibility should do together. The Holistic Network Design should provide all the high level technical requirements for the individual links in a coordinated network and these should be used by the delivery party in the detailed design of the link they are responsible for.

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

Windfarm Developers (or Very Early OFTOs) are best placed to deliver the detailed offshore network design. This will allow the Developers to engage with the market and deliver the offshore Grid infrastructure with the same project team as the offshore generation – a method which has driven innovation and reduced costs over the last decade.

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?

Absolutely yes. The Developer led model has successfully delivered all the transmission systems for UK offshore windfarms over the last decade and there is no reason it should not going forwards. On the same basis the Developer led model should be an option for the delivery of links that are to be shared or will form part of a meshed network.

The Developer led model has been successful because it allows a Windfarm Developer to control the availability of their transmission link to coincide with the availability of their first generation – they are the appropriate party to control the risk of a delayed or stranded transmission link.

Question 12: Please provide your views on each of the delivery options we have proposed in this document.

TO Build and Operate

TO not expected to be as agile as a Developer so delivery of the 40GW target may get delayed.

From what we have been told in OTNR sessions, the TO does not have the capacity to develop the needed onshore infrastructure let alone the offshore – this is especially critical given the timescales for the introduction of a more coordinated approach.

Will the TO take on the financial liability of generator losses if the transmission infrastructure is not available on time – a Developer would have to if they were building the infrastructure?

TO Design, OFTO Build and Operate

Same issues as TO Build and Operate. Plus how will the responsibility for Grid Code compliance be shared between the parties – will the TO underwrite this?

Early OFTO Competition

If the TO or ESO creates the detailed design then opportunities for innovation by suppliers will be lost resulting in higher costs.

ESO should concentrate their limited resource on creating a robust Holistic Network Design.

OFTOs have so far not wanted to take on construction management, risk etc. To get the low cost finance OFGEM expect them to be able to attract they look to take over the assets only once they are built and commissioned when construction risk has been removed.

Developer design and build, OFTO operate

A well proven solution for delivering offshore transmission assets. Has driven innovation in the transmission systems design as the Developer is incentivised through the TNUoS charge to build the most efficient system to meet the functional requirements. This is in addition to the scrutiny of Transfer Value during the OFTO transfer process.

Risks sit with the party that are best placed to manage them.

No reason that assets that include WNBI or AI cannot be delivered by the Developer so long as they are guaranteed to get back any (reasonable) additional costs that they incur incorporating functionality that is required by the Holistic Network Design.

For this option why do frameworks have to change – this is what is happening today?

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

No comment.

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?

Has the operation of the interconnector and the windfarm connection been modelled to ensure that there is no adverse interaction between the need to trade electricity and evacuate offshore wind power with the same equipment. We need to remember that while we are proposing to use the infrastructure for two different tasks simultaneously, the electrical systems have a finite capacity. So far no analysis overlaying the needs of a windfarm power export system and of one of today's interconnectors has been published.

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The addition of a 3rd terminal to an existing system will involve significant hardware and software modifications which will involve significant system downtime.

A degree of flexibility should be retained here as different models will suit different multi-purpose interconnectors depending on the balance of electricity trading vs windpower evacuation.

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

No comment.

Question 16: What are the commercial, operational and regulatory factors that would drive developers preference for either the OFTO-led or IC-led MPIT model?

No comment.

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?

No comment

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 with undertaking other secondary activities?

Qn to Marko G – do interconnectors need to deliver the same Voltage Support etc as a generator connection?

Question 19: What are your views of adopting a regime that requires developers to submit evidence to support their licence application and commit to regular performance reports?

Why put this uncertainty into the project? If it turned out that a MPI was used more for windpower evacuation than country-country trading and it started life as an “interconnector”, then why reclassify it if this means the business case could change? This uncertainty will add risk and hence cost to the project.

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 comment.

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

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No comment

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

No comment.

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?

No comment.