nationalgridESO

Offshore Coordination project
Consultation feedback form

We launched our consultation on **30 September 2020** and it closes on the **28 October 2020.**

Please use this form to send in your written feedback If you would like to feedback via this route. We are also working with stakeholders to receive verbal feedback. Please contact us if you would prefer to provide feedback verbally.

We would like to publish responses to our consultation following its closure. Please can you confirm whether you would like us to treat your response confidentially by selecting one of the options below: (delete those that do not apply)

- **Confidential - you can publish the feedback without our name but you are welcome to identify which sector we come from**

Throughout the consultation document we have asked some questions on our three reports that we would like your feedback on to shape our final documentation. These are below and do not need answering if you do not have views. If you would like to provide any other feedback, please feel free to do so.

Holistic Approach to Offshore Transmission Planning Report

Q1. Do you agree with our assessment of the key technology and system risk barriers coming from the Holistic Approach to Offshore Transmission Planning Report?

We broadly agree with the assessments made except for the points mentioned within this response.

Q2. Do you have any proposals on how to most effectively bring the technology to market for when needed?

The Ijmuiden Ver project, currently being developed by Tennet, aims to standardise offshore building blocks whilst being HVDC technology supplier agnostic. Detailed manufacturer studies and designs commissioned and coordinated by Tennet has significantly increased the likelihood of success and future deployment. Lessons learned from such an endeavour can be utilised for the UK.

The crux of bringing any such future coordination to the market will be the overall requirements and, as mentioned in the report, "line-of-sight" for future applications. It is imperative that the requirements are made clear, practical and future proof. Once this critical step is achieved, through collaboration with industry and authorities, the solutions can be developed in a relatively straightforward manner. This includes both the hardware and software elements.

Consequently, synchronisation with mainland European efforts in this regard is crucial and needs to be established in the next phase. As already mentioned in the report, any UK based requirements have to harmonise with European equivalents for 2 main reasons:

- It ensures that manufacturers/designers can save significant time and effort developing a single set of applicable solutions for meshed offshore grids.

- It ensures that any offshore projects can involve and connect to multiple TSOs and developers, irrespective of their country of origin (at least at the European level)

Finally in order for suppliers to work together to produce standard designs, we need to ensure that this is properly incentivised and that competition laws are not violated.

Q3. Do you have any additional evidence to inform the assessment we have made?

Q4. Do you have any further feedback on the report?

Table 6-1: Given the rather dramatic cost developments stated within the table, we would like to have more granularity and understanding on the methodology and assumptions made as basis for these estimations. Without knowing the details, we note the following:

- Cost of offshore wind construction reduced dramatically as the market matured and more efficient construction methods, risk management, resource capacity and resources emerged. However, this is now levelling off. If the rationale used is to mirror such assumptions in the offshore grid space it is questionable that the same reductions would be repeated as many of the lessons have already been carried across into the offshore AC substation / DC converter solutions. A good example would be offshore platforms where the cost is largely proportional to tonnage and, hence, steel commodity prices. Without smaller, lighter solutions it is difficult to understand how such reductions would be materialised. Tonnage is also a function of size which in turn is a function of plant sizes and electrical clearances etc. These items are hard to dramatically reduce as they are based on electrical parameters and properties.
- Such reports invariably form a reference point for many organisations including regulators etc. Hence setting the wrong expectations with respect to cost development can drive decision making in the wrong direction and set unrealistic targets.
- HVDC is a very specialised high technology environment with increasingly more demanding functionality and enhanced quality/reliability to achieve availability and security of supply demands. Ambitious cost targets will drive the wrong behaviours towards dumbing down the technology, reduced quality etc. This is particularly important as there is a push towards more sophisticated design and control schemes, which results in higher costs to engineering, installation, commissioning etc.
- HVDC technology is derived from huge investment in R&D etc. Technology companies need business certainty and continuity to underpin such investment decisions. Unrealistic cost reductions could create uncertainty towards business viability and not stimulate the right motivation towards investment.
- Ultimately market forces will dictate price development naturally.
- Finally, the graphs have a "race to the bottom" feel about them which seems counter intuitive given the rest of the objectives of the Offshore coordination project.

With the impact that this planned coordination may have on designs and execution, and consequently the price, how can it be ensured that an effective competition and innovation roadmap can be maintained throughout?

Section 3.1.1: We would like to highlight that 275kV HVAC connections are already being offered.

Figure 3-1: It is extremely unlikely to place any kind of harmonic filtering offshore, given its considerable impact on the eventual footprint. The figure should be updated to highlight this.

Section 5.4.4.2: Modular (lighter) structures that require lower crane lifting capacities are only really applicable to HVAC, which isn't clear in the report. HVDC platforms are significantly heavier than HVAC platforms and will always either need heavy lift vessels or other installation methods, as described in the report.

Section 5.4.4.2: HVDC "ancillary assets" such as filters can certainly be reduced but other assets such as smoothing reactors can't. These are always required in one configuration or another for a number of purposes.

Section 5.7.1.2: Going forward with greater coordination and information exchange, how can we ensure that company IP is sufficiently protected?

Table 5-1: Regarding "Improve maturity of multi-vendor, multi-terminal solutions", Actions should be updated to include engagement with stakeholders at a European level, including pilot projects.

Cost-benefit Analysis Report

Q1. Do you agree with our assessment of the costs and benefits?

We broadly agree with the assessments made.

Q2. Do you have any other evidence to support or challenge the assessment made?

We strongly urge for the next phase of this report to consider Hydrogen to a greater extent within its analysis and assessment. The benefits with respect to CAPEX, number of landing points, etc., are clear and expected but we would also add that the offshore and onshore coordination could then potentially stifle some "Wind to Hydrogen" collaboration projects. At this stage, the 'green' hydrogen industry is nascent and requires a lot of flexibility, collaboration and support. Bunching a significant number of future wind farms together may unintentionally hinder such potential collaborations at the individual project level.

The FES report stated that hydrogen will be required to reduced emissions for all scenarios. Given that hydrogen is going to play a major role in our Net Zero ambitions, we must therefore ensure that any offshore coordination does not disrupt/delay this emerging industry.

Q3. What do you see as the potential impact on the environment of these proposals, particularly the reduction in the number of assets and landing points?

We would like to question the overall benefit to the environment with respect to the reduced number of landing points. We agree that the number of landing points and total assets would be reduced if there was a holistic coordinated approach. However, the space required and impact of a 'landing point' is minor given the overall length of coastline available (Scotland alone has 11,800km worth of coastline). We of course agree that the less impact there is to the natural environment, the better but the scale of the benefit needs to be made relative and clear in the report.

Q4. Do you have any further evidence on the potential social and community impacts of these proposals? We would particularly welcome responses from local authorities on this question.

Q5. Where do you see value for further work to build on and test these findings? Either from the proposed list or beyond?

The proposed list is comprehensive, but it would benefit from a priority review. It would be helpful to understand which actions would have the greatest impact in facilitating the coordination of offshore infrastructure.

Offshore Connections Review Report

Q1. Do you think that if the areas we are highlighting were improved, that the ability to coordinate projects would be significantly increased?

Q2. Do you think we have missed anything in our offshore connections review that would add value and increase coordination?

Do you have any other feedback, if so please add below. Many thanks for taking the time to provide written feedback. When we publish our final documentation, we will let you know what we have done with the feedback and how it has shaped our work.

Offshore Consultation Report

Page 32: Regarding the 3 bullets points advocating that the integrated solution provides an overall benefit to the counterfactual with respect to system security, we note the following on bullet point 3 - It is not immediately clear how the bundling of connections in to coordinated links improves the impact of outages. The status quo option has significantly more individual connections at many more network locations (see Figure 2-3 in the CBA report). Any outage of these transmission links should therefore have less of an impact than if the larger, more bundled links went out of service. Finally, the many individual HVDC links defined in the status quo option would all be just as capable at providing voltage support and other system services as the integrated option (perhaps excluding the overarching ability to better distribute active power around the system).

Cost Benefit Analysis Report

Section 2.7.3.2: It would be helpful to gain a better understanding of the differences in curtailment between the counterfactual and integrated, particularly as the counterfactual is better performing in this regard.

Page 11: It is assumed that windfarms are moved so that they are clustered around a hub and that 1.8GW of WTGs can connect into the one hub. Can you please confirm if the windfarm output has taken in to consideration turbulence effects due to these windfarms being closer together? Additionally, it is worth noting that there could be a penalty in the cost of the offshore foundation costs as windfarms often take advantage of subsea features that minimise local depth to reduce cost of the foundations.