Scottish & Southern Electricity Networks
TRANSMISSION

Submitted by email to:
Cap.Floor@ofgem.gov.uk

28 July 2021

Dear Interconnectors Team,

Thank you for the opportunity to provide further comments in response to Ofgem's working papers on interconnector policy. As noted in our previous response of 16 July, we have looked across the other working papers and have provided our response below to working papers 2 and 3.

Having noted the current consultation on the Offshore Transmission Network Review, we believe that will provide the best opportunity to provide full comments on WS4 and the use Multi-Purpose Interconnectors (MPIs) and so we will provide a response using that avenue in due course.

As invited in the working papers, we have offered feedback on the broad themes and overarching questions contained in the working papers. This includes views from The National HVDC Centre which as part of SSEN Transmissions has provided further technical expertise to support Ofgem's thinking.

Please let me know if you require any further information or want to discuss our response.

Yours sincerely

Josh Henderson
Senior Regulation Analyst

Interconnector policy review: Working paper for Workstream 2 – socio-economic modelling

Defining welfare and economic benefits

Ofgem's primary concern as part of its socio-economic modelling is energy prices for GB consumers. While this is an important aspect, it limits Ofgem's scope and wider issues should be considered as part of this modelling. For example, other issues that must be addressed include consideration of how interconnection will help achieve Net Zero and quantifying how much more renewable energy they will enable with a carbon displacement value also included. It is anticipated that there are significant potential environmental efficiencies from integrating MPI methods into the GB offshore wind connection strategy that will contribute towards Net Zero.

As well as the energy price itself, there could also be benefits through exportation of energy as part of realising wider economic gains. Any associated cost-benefit analysis should properly account for the socio-economic welfare as well as the price related impacts. Ofgem appear to acknowledge that there is some limit to the current view where the use of an Internal Rate of Return test suggests a focus on asset owner cashflows rather than accounting for wider whole-system issues. The Ten Year Network Development Plan is noted as including a number of other benefit categories and so this could serve as a starting point for future modelling.

The modelling should involve Ofgem's remit of considering how to deliver Net Zero at the most efficient cost to consumers and remain remindful of the ambitious legislative targets that require immediate action. This would also take on the intergenerational risks and costs where cost savings to consumers now could impact future consumers more in terms of cost but also health and wellbeing for individuals and communities.

The community impact will be of particular consideration for the environmental impact, especially marine environment, when considering the landing of offshore infrastructure too.

Explaining the dynamics of markets and interconnectors

Ofgem's working paper provides a simple case for the dynamics involved for cheaper energy supplied from one territory creating an increase for demand in another. We expect this sort of interaction requires a further and more detailed description and definition that involves a greater number of variables. This sort of dynamic will likely include implications on regulation, commercial development and competition and how they are considered in assessing the welfare impacts when connecting different energy systems.

Ofgem has noted the potential for additional revenue sources are not included within the modelling results and we consider it worthwhile revisiting as and when further clarity on this becomes available.

When considering the overall costs and benefits to consumers Ofgem need to take into account the costs and benefits of the project, Transmission Network Use of System (TNUoS) changes and Contracts for Difference (CfD) arrangements, all of which make up consumers bill or are passed onto consumers indirectly through generators.

Including MPIs and other arrangements

Our HVDC Centre has provided comments below about further arrangements, the prospective use of MPIs and their specific consideration under any socio-economic modelling.

While more details and eventualities are likely to reveal themselves in the future, it would also need to be known whether the considerations of MPI design have been taken into account as part of the proposed socio-economic method. We would welcome clarity on how the most cost effective capacity of an MPI is evaluated and how this analysis would change if an identified MPI option was not a unique option for connection to GB onshore but if other

options were available for connection to other elements of a co-ordinated offshore system. It should also be clarified if this decision would vary if the generation being connected was not just in GB but also providing ancillary services and energy to another external system/territory.

Other arrangements, and how they would be assessed, are not referenced in Ofgem's working paper and could result in a lost opportunity to GB consumers. The ESO phase 1 co-ordination work has discussed the efficiencies associated with integrating MPI methods into the GB offshore wind connection strategy with benefits relating to the pace of construction and achievement of Net Zero targets.

Possibilities also include combining HVDC arrangements with storage devices to provide network stability services as also discussed in the ESO planning work for a Holistic Network Design. At present, it does not appear that such an arrangement is considered in the intended socio-economic modelling.

Ofgem may also need to retain some ability to revisit and adapt any modelling should there be any review of the technical arrangements that are considered as MPIs and any knock-on effect in the socio-economic modelling.

Interconnector policy review: Working Paper 3 – Wider impacts

Benefit of ancillary services

Benefit assessments should have the scope to be able to take into account current ancillary services but also others being explored, include those that can be realised within the timescale of any interconnector development. This allows for a more efficient and economic introduction rather than being introduced at a later stage and incurring additional cost.

We previously illustrated the benefits of designing black start control capabilities within initial design rather than adding this at a later stage to minimise cost considerations[1].

System losses and curtailment costs

We would note that with suitable design, a Bi-pole design instead of the monopole design avoids these consequences. For a Bi-pole design, a maximum of 50% of the power flow would be lost to a secured fault condition; a feature that is also discussed within the ESO phase 1 work for a Holistic Network Design This Bi-pole approach is also beneficial to MPI design or other co-ordinated offshore arrangements where a maximum of 50% of wind farm capacity can be supported during other loss conditions- for example outages on the Bi-pole for maintenance/other access can be scheduled for times the wind output overall would be within that 50% capacity then available and the configuration of offshore connection for that outage then managed to minimise wind farm output curtailment and disruption.

Future needs case assessments

We expect that future needs case assessments could potentially operate differently depending on what kind of arrangement is being assessed and establish the value of. Regardless of the arrangement a robust cost benefit analysis must be used to aid decision making alongside a strategic long term plan. These arrangements will include:

- A point-point interconnector as today.
- A point- offshore connection point(s) MPI arrangement with additional wind farm connection benefit considerations.
- A stage of development within the MPI proposal with a subset of those benefits.

[1] https://www.hvdccentre.com/our-projects/maximising-hvdc-for-black-start/

- An MPI inter-linked with other co-ordinated offshore elements with a range of wind farm connection and onshore boundary and network support benefits.
  - Development stages of the above ultimately interlinked MPI with subsets of those benefits.
- Solutions across all the above with either monopole or Bi-pole HVDC design, with different availability and maximum loss of infeed impacts.