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Dear Sam,

Offshore Electricity Transmission: Consultation on the Enduring Regime

Introduction

This response is from National Grid plc, the parent company of National Grid Electricity Transmission (NGET - the transmission licensee responsible for system operation and onshore transmission assets in England & Wales) and other separate companies that are bidding or may make future bids for activities requiring an offshore transmission licence.

The Government has set ambitious targets to increase the establishment of renewable energy and this forms a key component of the UK's broader strategy to reduce its carbon emissions. National Grid is determined to play its part in ensuring that these targets are met.

A vast wind resource is available in the waters surrounding the UK and it is vital that the enduring off-shore regime maximises the potential for this resource to be harvested in an efficient manner. It is therefore essential that the enduring off-shore regime facilitates the meeting of all the significant challenges we face which include progressing the required technological developments, meeting the time pressures and managing the associated supply chain logistical challenges.

The size of the offshore network challenge results not just from the large capital investments required (last estimated by Ofgem at £15bn for offshore assets alone) but also from the need to develop in a very short period new network technology to connect unprecedented offshore wind farm developments to new onshore network facilities (up to 33GW with Round 3 leases) through difficult and environmentally constrained terrain, shorelines and sea bed. It is vital that these networks are delivered in the most cost-effective way to minimise the cost to both the UK economy and UK consumers. A sub-optimal approach would not be sustainable from either an economic standpoint or in the context of ensuring that climate change targets are met.

The offshore networks comprise two types of infrastructure:

> Firstly, there are discrete, single user assets which utilise tried and tested technology in existing applications. These assets have limited need for onshore interconnectivity today and limited potential for future European interconnectivity. The development of this form of infrastructure can be achieved using a variety of commercial/regulatory options at relatively low risk to end customers.
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> Secondly, there are assets that will serve multiple users, that will need to rely on new and emergent technology and, due to their impact on the development of the wider internal European market, will have a significant strategic importance for customers. These assets – the "trunk roads" of the system – need to be coordinated by a party which is willing and able to share the risks associated with taking this strategic and facilitating role.

The current proposals for the enduring offshore regulatory regime has a single buyer (Ofgem E-Serve) procuring network services on behalf of end consumers on the basis of a limited view of strategic capacity requirements and in the face of complex technology choices and performance trade-offs. As identified in RPI-X@20, this is a high risk approach to delivering a fit for purpose offshore network solution.

National Grid's proposal

Our suggested alternative approach is that that offshore developments should be taken forward by industry parties that have the capability to make the required cost/performance assessments and are able to provide a coordinated approach by sharing the consequential risks and benefits of the strategic decisions with consumers.

With a suitable alignment between the interests of companies and end consumers, Ofgem might come to the same view on the development of offshore networks as they have stated on the development of interconnectors in their recent parallel consultation. That is that key variables in the specification of the required network service may be better determined by developers with incentives to make the best choices rather than centrally specified for a competition.

Our approach also has scope to better meet the desired objectives for network regulatory regimes as recently set out in Proposition 1 in the RPI-X@20 emerging thinking consultation:

- *facilitating delivery of a sustainable energy sector, and*
- *delivering value for money network services over the long term for present and future customers*.

We are aware that generation developers have strong incentives to ensure fit for purpose connections are delivered in a timely fashion. However we note that there are benefits for end customers from coordinating solutions that do more than just meet the immediate needs of developers seeking to get present projects operating.

This alternative approach would require further detailed work on the selection of the trunk infrastructure provider, the nature of the strategic investment incentives, and the contest for selecting the developers of non-trunk infrastructure. Nevertheless, we observe that:

a) Sufficient information should already be available to Ofgem (through the transitional regime process and the onshore enhanced investment work) to establish suitable parameters for risk sharing arrangements.

b) There is likely to be a rather small number of parties that have the capabilities and willingness to accept risk sharing incentives on trunk routes (National Grid believes it would be a suitably qualified candidate for this role).

c) Ofgem would be greatly assisted in the task of conducting contests for non-trunk infrastructure by the information that can be provided by suitably incentivised trunk infrastructure providers.

Such an approach would avoid the risks and significant costs associated with responding to only short-term user-commitments using an overly simplified specification of the required service in order to permit a simple tender.

In summary, the approach set out here by National Grid would enable industry to select suitable long-term and robust approaches addressing strategic technology, supply chain and timing issues. In this way it is able to deliver the optimum solution for UK consumers and the UK economy.

Considerations for the Enduring regime

We believe our suggested approach will allow optimal decisions to be taken around the following key choices:

1. What is bought The need for the required offshore transmission service to be specified and solutions selected from potential options such that:

    - Appropriate cost/performance trade-offs are selected in all aspects of the network design thereby efficiently meeting user needs.

    - Network designs are sufficiently extensible and flexible to meet subsequent phases of offshore development (including future international interconnection/supergrid infrastructure to facilitate the European internal market).

    - Technology is chosen and developed to achieve economies in the longer-term. This requires technology choices which go beyond meeting just the needs of those users able to make commitments at the present time but fosters emerging technologies so that future networks are facilitated (this activity is particularly important given the need to demonstrate and evaluate new voltage source converter and multi-terminal HVDC technology options).

2. The timing of purchases The need for streamlined and coordinated network development processes in order to meet the time challenges associated with progressing offshore networks in a manner that will permit offshore wind to make an effective contribution to meeting the UK's renewable energy and climate change ambitions. This requires decisions on who does what and when in the very near future.

3. Who delivers The selection of an appropriate party best able to bear the delivery risks (including procuring and integrating new and emergent technology) whilst developing future capabilities and technologies to foster innovation over the medium term. In addition it is vital that the delivery party is able to effectively coordinate with European market developments such as the North Sea Grid Initiative.

Given the scale of this challenge, there is significant risk that the current proposed regime would incentivise network investment in cheapest way of meeting a minimal set of immediate needs (step by step, point to point) rather than addressing the wider strategic issues (of what, when and by whom) summarised above.

Conclusion

It is vital that off-shore networks are delivered in the most cost-effective way to minimise the cost to both the UK economy and UK consumers. A sub-optimal approach would not be sustainable from either an economic standpoint or in the context of ensuring that climate change targets are met. In our view, the assets that will serve multiple users, that will rely on the development of the European market and will have significant importance for customers – the "trunk roads" of the system – need to be co-ordinated by a party which is willing to share the risks that are inherently associated with the taking of a strategic and facilitating role. We believe that this approach and the more detailed model outlined in this response represents the best way forwards.

Yours sincerely,

Paul Whittaker
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