Email to:

[WMReform@ofgem.gov.uk](mailto:WMReform@ofgem.gov.uk)

15 November 2023

Dear Eleanor Warburton,

**Response to Ofgem’s Open letter on strategic transmission charging reform**

Scottish Renewables is the voice of Scotland’s renewable energy industry. The sectors we represent deliver investment, jobs and social benefits and reduce the carbon emissions which cause climate change. Our 340-plus members work across all renewable energy technologies, in Scotland, the UK, Europe and around the world. In representing them, we aim to lead and inform the debate on how the growth of renewable energy can help sustainably heat and power Scotland’s homes and businesses.

Scottish Renewables welcomes the opportunity to respond to Ofgem’s Open letter on strategic transmission charging reform. We also welcome the broad thinking undertaken by Ofgem in preparing this letter and applaud both the presentation of the key issues and the range of potential solutions under consideration.

Still to add summary/key points

In keeping with our involvement with the TNUoS Task Force and other industry bodies, Scottish Renewables would be keen to engage further with this agenda and would be happy to discuss our response in more detail.

Yours sincerely,

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**Background for Reform**

**1. Do you agree with the need to consider the future role and design of transmission charges in light of system changes and developing policy reforms? Which of these policy areas do you deem as more or less material?**

We are firmly in agreement with the need to reform the transmission charging methodology and regime considering the wide-ranging changes that have impacted the transmission system since the current regime was established.

We agree that, on policy reforms, the two most material considerations are (i) REMA and (ii) the move towards strategic and spatial planning. REMA with its potential for introducing locational marginal pricing in some form, is going to be more material. CfD reform is also significant and needs to align with broader reforms and mitigate the impact of increasing transmission charges, inevitable if the current methodology is not changed, and likely under any future regime, if a net zero system is to be achieved.

The development of spatial planning as proposed in the Winser report is also materially significant as it provides a basis for providing a locational signal for the type and volume of generation that is needed to deliver a net zero system. This could be much more efficient than relying on market forces to determine where and when generation and demand is developed.

For example, an offshore wind locational signal is primarily provided by the Crown Estate leasing rounds and other external factors such as seabed conditions, wind utilisation etc. A charging signal based on expansion factor provides an unintended barrier to development as offshore wind will always be developed at the extremities of the existing grid network. The consequence is that the high charges developers face particularly in the north of Scotland can only be fed through into the CfD strike price and passed onto consumers. This tension, if not resolved, will undermine the delivery of GB net zero targets in the short and longer terms.

**2. Are there other reform programmes not considered here that are likely to have a material bearing on the future role and design of transmission charging?**

As highlighted above CfD reform is material to, and needs to be influenced by, transmission charging reform. There is a risk that together they contribute to double counting but similarly, an opportunity to provide optimal coordinated investment signals.

In addition, Offshore network coordination will have a bearing, although we see this as broadly within the category of strategic and spatial planning.The OFTO regime needs improvement and development to meet the net zero challenge. For example, clarity on post tender revenue stream economics to mitigate the risk of early decommissioning of renewable generation. Other aspects of the OFTO regime are impacted by transmission charging and vice versa including, the generator commissioning clause, multi-purpose interconnectors and generation re-zoning. Charging reform needs to consider the interaction and impact with these elements.

**Objectives of Transmission Charging**

**3. Do you see reasons to alter our current view not to design transmission charges to send dynamic operational signals for generation and demand in the longer-term?**

We agree with Ofgem that transmission charges are effective at sending an investment signal, and not sending operational signals. Transmission charges are best designed solely as an investment decision signal (which includes decisions on plant closure or re-investment).

Transmission charges need to be predictable to provide effective long term investment signals and therefore cannot also effectively anticipate real time operational conditions.

However, the operational benefits of co-locating demand and generation and other combinations of hybrid generation sites could be signalled by appropriate long run investment signals and is an opportunity for transmission charging reform to consider.

We believe that attempts to mix operational and investment signals with network charges risks double-counting and mixed-signalling; it would weaken the efficacy and usefulness of the investment signal element. Furthermore, it can distort related market signals – whether wholesale market, locational flexibility market, reformed BM, or other related system elements which include operational dispatch signalling.

**4. In addition to those described above, what would be the other key characteristics of a future design, for the transmission charging framework, to enable its effective incorporation into investment decisions so as to achieve cost-effective net zero?**

Locational signals in the existing transmission charging methodology are working in direct opposition to delivering and supporting net zero due to the current expansion approach to cost reflectivity. Low carbon targets require large offshore wind to deliver large volumes of renewable low carbon energy. Inevitably, offshore wind will be located at the extremes of the existing transmission network exposed to the higher zonal charges that exist furthest away from the centres of demand. This is apparent in the north south divide in cost exposure highlighted by the recent NGESO 10-year TNUoS projections.

However, the need for transmission network upgrades is triggered by generation and demand connecting at all points on the existing distribution and transmission networks. The ability for certain types of generation, solar and storage, for example, can respond to the locational signal, offshore wind cannot. Rather, the decision to locate is dominated by where wind resource is most prevalent, where seabed rights are released and compatible with the construction and operation of wind farms of scale. The cost of the transmission network upgrades is therefore levied inequitably on some generators compared to others. This is creating a shutdown signal for many sites with TNUoS levels rising to 65% of the levelized cost of energy and the downward pressure on CfD strike price. This is evidenced by the recent tender round five outcome.

**Framework for transmission charge design**

**5. Are there other key drivers that should be factored into the transmission charging framework? Which of these drivers do you see as most important?**

We agree that the range of drivers identified by Ofgem and presented in Figure 1. is appropriate and comprehensive. We believe the choice from cost drivers within the ‘what costs’ options to be the most important.

The current expectation is that with the current regime, significant increases in transmission charges will materialise to meet net-zero network investment costs. The primary need for drivers in the future transmission charging framework are therefore the cost drivers and how these can provide predictability and equity in their investment signal.

Additional drivers could be to value the carbon benefit of the generation type and the flexibility, or other operational benefit of the source, to meet network needs. For example, a hybrid site such as a traditional pump-storage site or hydrogen generation or BESS situated beside wind or solar generation. Demand sites that provide ‘behind the meter’ generation can be similarly assessed. The extent to which these sites can be managed to mitigate constraint costs could be given a value. Similar in importance is the question of TNUoS charges reflecting planned future network conditions.

**6. Do you have any views on which of these approaches would be more effective, considering the energy transition?**

Appropriate valuation of constraints and system losses, optimising investment in and use of the network, and incentivising development of low carbon renewable generation are all essential to achieving a net zero system. The transmission charging framework cannot do all these things but needs to be at least neutral if not positive in supporting these ambitions. It cannot do everything but should focus on predictable and equitable cost drivers, with long term resets appropriate to the benefits different User types bring to a net zero system.

Developing alternatives to the expansion approach need to be identified. The proposals to consider network losses may create the same problem. Connecting at the periphery of the network may still be penalised due to higher losses although with the changing network flows this could be a more equitable approach.

**7. Do you agree that TNUoS charges should reflect planned future network conditions rather than actual network conditions?**

Yes, we strongly agree that network charging should be designed in consideration of the future planned network. Ofgem’s proposal that use of system charges should aim to reflect the forecasted future planned network, rather than today’s methodology of the current network can improve predictability, and therefore has merit in this respect. It is unclear yet as to whether introducing a deeper connection charge would be effective, but this could provide a more equitable spread of costs.

**8. Do you agree that the frequency of reset should be longer than ‘real-time’, to ensure an effective investment signal can be sent?**

To achieve the predictability longer term resets are much more beneficial. The potential for a longer term TNUoS contract so that charges faced by some categories of network users are stable for a period of time after connection could support this. OFTO’s benefit from such an approach and should be considered for other users.

**9. Have you any views on how trade-offs between predictability and cost-reflectivity in considerations of how frequently network charges should be reset should be managed?**

See the response to the previous question.

**Key questions for transmission charge design**

**10. Is there an enduring justification for paying credits to generators, specific to their siting location, through their transmission charges?**

The current charging methodology makes such payment inevitable and highlights why it needs to change. The allocation of the cost of funding transmission network upgrades must provide a level playing field for investment in the renewable energy that will deliver the GB net zero targets. Under the existing regime this is not happening.

The principle of cost reflectivity is not being achieved under the current methodology. The transmission network has changed radically from the “top down” flows from supply to demand with advent of disaggregated and distributed generation sources. Energy flow is often from lower to higher voltages and frequently from south to north. Network upgrades that meet these new flows are not necessarily extending the network at its periphery but reinforcing its capacity throughout the network.

**11. How should the distinct characteristics of storage assets be reflected in their treatment in network charging, to encourage optimal investment outcomes across the large storage development pipeline?**

Storage should not be treated in the same way as other generation sources in terms of allocating network capacity. Consideration of its operational service and impact on the network needs to be incorporated into the methodology and charging regime, thereby releasing network capacity for other types of Users and reducing the connections queue.

Transmission network charges should be designed to avoid any distortion or undue deterrant for storage to fully participate in relevant markets/mechanisms for operational dispatch – whether wholesale, local flexibility, reformed BM or similar.

**12. Within the range of storage assets, what distinctions should be taken into account in the charging approach?**

The capability of a given storage asset to meet short term operational needs and service provisions for the network should be supported by the charging methodology. The development and operation of hybrid sites with mixed demand and generation sources including storage, which can provide multiple network services, should also be encouraged.

**13. To what extent should transmission charges send locational signals to large demand users of the network?**

Demand that can mitigate transmission investment for example by being sited near generation should receive positive charging signals compared to demand that triggers investment. Consideration to encouraging hybrid sites where demand and generation can be managed and net off should also be considered as benefiting from a charging signal.

**14. What level of locational variation in charging is appropriate, for smaller demand users who are not generally expected to change siting decisions based on the signal?**

Locational signals should only be given to users who can respond to the signal.

**15. If there are significant increases in the costs recovered through the residual charge, should alternative charge designs be considered?**

Transmission charges need to provide a level playing field for Users based on appropriate cost reflectivity and benefit they bring to the network and other Users. Increases to the residual charge may well be appropriate in this context but need to be shared proportionately on a usage or capacity basis.

**16 Should transmission network charges play a role in encouraging households and small businesses to make efficient investments in low carbon technologies?**

In principle, yes, the ability to provide demand services to net off demand through behind the meter technologies should be encouraged.

**17 How should charges for large generators and large demand users at different voltages account for the increasing proportion of distributed generation and the changing nature of network flows?**

The transformation of the electricity system towards net zero carbon has diluted the differentiation of transmission and distribution assets. Voltage does not play such a definitive role in identifying how network assets are used and therefore charges are no longer appropriate to be calculated based on voltage alone. Similarly, investment in the network is triggered by users connecting at all voltages. Transmission and distribution investment costs can no longer be routinely allocated to users by their connection voltage. A proportionate, predictable, and affordable allocation of costs need to be developed.

**18. Should there be greater alignment of charging obligations and methodologies for transmission- and distribution-connected assets, to encourage efficient connection voltage choices by generation and storage assets?**

As per the previous response, the distinction between transmission and distribution assets is blurring in electrical terms due to the changing network flows that arise from the proliferation and disaggregation of generation. It is appropriate to align commercial terms to provide a level playing field for users to connect.

However, the scale if investment and duration of development of Users connecting at Distribution and transmission can vary enormously. Large transmission users need predictability of transmission charge whereas smaller lower voltage users may be able to respond and value different signals.

**19. Should transmission charges be used to signal the relative costs of network congestion (i.e. internal constraints and cross-border congestion) in different areas?**

Constraint costs arise from short term congestion on the network, and are an essential and effective means to balance the electricity network and provide an alternative to building an unaffordable unconstrained network. They need to be appropriately valued as part of a net zero system. The ESO manages the network to mitigate constraints, and this can happen close to real time depending on multiple variables.

The future planned network developed under the spatial plan proposals should provide an optimum signal for the volume and type of generation required to connect to optimise operational constraints and network investment costs. Charging and market-based reforms need to be developed to signal alignment with the future network plan.

**20. What are your views on the potential implications of market reform and system planning outcomes on the benefits of different long-term transmission charging options?**

See the previous answer however we broadly agree but do welcome more work on this.

**21. Should locational signals from transmission charges be adapted where cost-reflective charges conflict with other policy goals and electricity market signals?**

See the previous answer.