

21 February 2020

Dear Mr Perkins,

Forward Work Programme 2020-22 Consultation & Decarbonisation Action Plan

This response is from National Grid in respect of the NGET and NGG licensees. It is not confidential.

National Grid welcomes the publication of Ofgem's action plan for decarbonisation. We are at the heart of the energy industry's transition to net zero and are committed to delivering world class networks and enabling innovation, from the way we heat our homes to supporting the growth of renewables and electric vehicles. It's critical that the regulator, government and industry are aligned to decarbonise the energy sector in the journey to net zero at the lowest cost to consumers, and we both welcome and share Ofgem's commitment to achieving this.

We recognize and agree with the importance of the work areas identified in the Forward Work Programme (FWP). We also welcome the increased ambition and potential for an increased pace of change brought by the Decarbonisation Action Plan (DAP) towards achieving net zero by 2050.

Our comments focus on the following topics from the Forward Work Programme and Decarbonisation Action Plan:

1. **Facilitating the net-zero pathways:** The role of the RIIO-2 onshore network price controls
2. **Delivering value from coordinating onshore and offshore network development for net zero:** Working with government and industry to coordinate onshore/offshore network developments to meet net-zero needs
3. **Decarbonising heat and transport:** Actions to facilitate net-zero pathways
4. **Delivering network competition:** Ensuring the competitive delivery models drive innovation in design as well as delivery, onshore and offshore

1. **Facilitating the net-zero pathways: The role of the RIIO-2 onshore network price controls**

The next decade will be vital to ensuring the UK can deliver on its 2050 ambitions. The actions taken now will determine national progress and we are pleased to see this reflected in the DAP.

We recognize that the initial RIIO-2 business planning guidance, and the priorities behind it, were set before the Government's commitment to net-zero. We have responded to the revised guidance issued after the net-zero commitment, but there remains significant scope for advancing RIIO-2 business plans (and actions in the next 5 years) towards the DAP ambition of designing a cost-effective energy network for net-zero.

Due to the relatively recent announcement of net zero, the current Electricity and Gas Transmission RIIO-2 business plans inevitably contain more consideration of the requirement to minimize costs than of measures that would best facilitate net-zero. We therefore welcome the DAP intention to go beyond the FWP actions "to further challenge companies on their spending plans in spring 2020" and now "use these price controls to deliver the network changes that are needed to achieve net zero".

The RIIO-2 plans were originally developed on the initial guidance of designing baseline revenues around parameters that correspond to the lowest points of the ranges provided in the ENA RIIO-2 Common Scenario report (which was formulated before the net-zero commitment). Flexibility has been included in the plans where meeting higher outcomes could be justified. The revised guidance in August 2019 following the net-zero commitment has prompted identification of some ways, but probably not all ways, the baseline plans might impede the efficient achievement of "any of a plausible range of pathways to net zero". The move to legislate for net zero by 2050 is a game-changer, and further exploration is needed across industry and the regulatory frameworks to understand how network actions can further support delivery of net-zero commitments, particularly within the RIIO 2 period.

We welcome the intention in the DAP to introduce a re-opener to support actions required to achieve net-zero can be progressed in the RIIO-2 period. The outline proposals to facilitate new investment and enhance innovation incentives to help enable key developments within RIIO-2, rather than await the next cycle, are important to ensure actions can be taken by the networks over the 2020's to support net-zero ambitions, and deliver value to consumers in the short and longer term.

2. **Delivering value from coordinating onshore and offshore network development for net zero : Working with government and industry to coordinate onshore/offshore network developments to meet net-zero needs**

We welcome the FWP intention for Ofgem to work with government, the Crown Estate, the ESO and industry to develop coordinated solutions for transmission networks linking windfarms to onshore grids by exploring the options for meshed grids rather than radial links. As noted in the FWP, this is important in minimizing costs and the network environmental impacts of achieving net-zero.

Communities in areas that already have offshore wind connections have expressed to us their concerns about the impacts if the current radial approach is used to connect the large volumes of offshore wind that are going to be needed for net-zero. To address these concerns, we have been developing a range

of onshore connection designs (for consideration by developers and NGEsO) that could help reduce local environmental impacts for the longer-term needs anticipated to achieve net-zero. We are therefore pleased to see aligned thinking in the DAP with the statement that you “do not consider individual radial offshore transmission links for [the anticipated] amount of offshore generation are likely to be economical, sensible or acceptable for consumers and local communities”.

Fundamental changes to the offshore transmission regimes are necessary to ensure offshore network infrastructure is designed to meet the various needs collectively, developed appropriately and then efficiently used. Consideration of the overall economic aspects of offshore developments must be integrated with the planning/consenting process addressing the environmental impacts.

The fundamental driver for radial connections arises from developers’ need to manage the various risks and uncertainties that arise in the current offshore frameworks. Under these arrangements, offshore wind generators (and interconnector developers) are responsible for choosing locations and connection arrangements that will ensure their current projects are competitive. If this focus on the timing and cost of just the next connection is not addressed, coordinated network solutions will not be accepted (even though they may offer overall environmental and economic benefits than individual radial connections) and this may risk the contribution of these important developments to achieving net-zero.

Given this, it is necessary to improve the existing regulatory frameworks and the offshore transmission regime so that competition can deliver efficient, coordinated solutions, rather than motivating behaviors that are likely to frustrate them. Each radial connection considered in isolation constrains options for a meshed network and thus the mitigation of the impacts of further connections). Reform of the regime is therefore essential and must progress urgently to minimize the risk of hiatus due to current planning issues or uncertainties from prospective regime changes.

To resolve this, we believe that an industry working group should be formed with government, Ofgem, the Crown Estate, planning authorities, ESO and network and generation developers. It would be able to:

- Establish a network development strategy which optimizes connections for wind, harnesses synergies with interconnectors, alleviates onshore pinch-points and meets the requirements of generation developers participating in support and access arrangements. A key outcome should be improved longer term system development that takes account of potential future developments for net-zero, evolving radial connection points to a more interconnected network.
- Develop security criteria and design standards for modular/flexible offshore networks which will need to provide shared transportation capacity as well as connection functions. This will be an important pre-requisite for facilitating competitive delivery of phased designs.
- Make transparent information on onshore and offshore development constraints, commissioning surveys and studies to ensure all parties have access to the same high quality data.
- Identify development phasing which fits with the net-zero transition programme; balancing the scale of advanced commitments, supply chain capabilities and confidence in need.

We agree the ESO has a central role in assessing development options and establishing the offshore development strategy but it will not be able fulfil its role without technology and planning information from network and generation developers, who require aligned incentives from the regulatory regime.

A key regulatory question is whether the current linkage between triggering network development and user commitments to forward looking access charges remain appropriate when large developments are driven by auctions. It is difficult to derive suitably accurate and stable forward looking access signals when the sharing of new meshed network technologies between connectees and other users of infrastructure will emerge and vary over time. We suggest consideration should be given to new allocations of such uncertainties that will facilitate parallel auctions, to support the coordinated and phased development of generation and network.

3. The Decarbonisation of heat and transport: Actions to facilitate net-zero pathways

The original FWP activities which consider how Ofgem will support decarbonization, including in heat and transport sectors are necessary but could be perceived to be responsive in nature. The more proactive approaches set out in the DAP to develop evidence through low regret actions are welcome.

While positive work is taking place on both home and work Electric Vehicle (EV) charging, there is a need to accelerate the delivery of a high-powered EV charging backbone across the UK. This will be necessary if we are to successfully address consumer charging concerns and minimise disruption to people's daily lives, providing people with the confidence to purchase an electric vehicle. This network would allow all EV drivers to undertake 'out of pattern' and long-distance journeys. If we are to realise the commitments of improving air quality for every community across the whole of the UK, appropriate funding mechanisms which deliver sufficient electricity network infrastructure to support the roll out of EV charge points to meet consumer demand will be required.

The decarbonisation of heat presents perhaps the greatest challenge. To achieve this we will need to harness all low carbon technologies, including much greater energy efficiency, smarter heating controls, heat pumps, renewable heating, hydrogen and other low carbon gases; with the mix of technologies being dependent on the specific characteristics of each area.

We agree Ofgem should take the lead in identifying how the regulatory system and market framework would best work to deliver net-zero, including in the domain of heat and heat networks. We are pleased to see topics such as the need for anticipatory investment that were absent in the FWP highlighted in the DAP because acceleration of timescales to establish all required technologies is needed to meet net zero. A 'whole systems' perspective will also be key to achieving this. Further detail, especially the timescales for deliverables and consultations that develop Ofgem's thinking, will be helpful so others can plan their contributions and coordinate.

The formation of a Net Zero Advisory Group is a useful move to ensure all options and actions are considered across all areas relevant to achieving net-zero. We look forward to hearing details about how such a group will be selected and how it will work. We suggest this group should include coordination with Government rather than just advising Ofgem so it can address the policy issues associated with the distributional impacts identified in the DAP. I.e. who should pay for anticipatory and strategic investments, taxpayers or consumers?

4. **Delivering network competition: Ensuring the competitive delivery models drive innovation in design as well as delivery, onshore and offshore**

We support the work by Ofgem and ESO to develop a viable and effective early model for network competition (harnessing the drivers for innovation in network design as well as delivery). With the challenges of net-zero and the associated large increases in wind and solar production, we suggest there is large value and relatively low risk in immediately progressing industry work to select technology architectures and formalize inter-operability standards. As well as the standards for modular development of offshore networks mentioned above, an IT platform to standardise coordination of EV charging, vehicle to grid services and other automated actions, for example from heating systems, should be progressed.

In terms of the competition framework, we suggest there is significant benefit in pursuing the early competition model because ensuring follow-on from design to delivery is under the same contractor or consortium wherever possible will reduce hand-over risks that will become increasingly material in coordinated solutions.

We would be pleased to discuss further the comments raised in this response.

Yours sincerely

Chris Bennett

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