



Alex Walmsley  
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Date

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Dear Alex,

ScottishPower Renewables (SPR) is part of Iberdrola, one of the world's largest utilities and leading wind energy producer. ScottishPower Renewables is responsible for progressing the deployment of onshore wind projects in the UK and Ireland, and offshore windfarms throughout the world, managing the development, construction and operation of all projects.

We currently have over 30 operational windfarm sites with over 2GW installed capacity throughout the UK and Ireland, including our share in the 389 MW offshore windfarm West of Duddon Sands. In addition, we have a substantial development portfolio of onshore windfarms in the UK and Ireland and offshore wind projects in the East Anglia Zone, including the 714 MW East Anglia ONE project which is currently under construction. We therefore welcome the opportunity to respond to the consultation on Key Enablers for DSO programme of work and Long Term Development Statement. You would be able to find our responses in Annex 1.

We would welcome discussion on any of the above and if you have any questions in relation to this response, please do not hesitate to contact me directly.

Yours sincerely

A handwritten signature in black ink, appearing to read "Ricardo Da Silva". It is written in a cursive style with a long horizontal line underneath it.

**Ricardo Da Silva**  
Grid & Regulation Analyst

**Annex 1.**

- 1. We consider that improvement is required in the visibility of DG and LCTs connected to the distribution network. In addition to DG and LCT connections, can you identify areas for improvement in the current data that is shared in the LTDS?**

SPR agree that the level of visibility of DG is the key priority and support the potential work around Distribution Registers with the most relevant data on technology, location and capacity in alignment with what the industry already have at the transmission level.

- 2. Can you identify areas for improvement in the presentation of network information in the current FoS?**

As acknowledged by the EDTF, network data is often held in siloed databases, with no consistency in term of access and permissions. For instance, full access to the LTDSs is not readily available and needs to be requested by the DNO, while registration is required in order to access information displayed in heatmaps.

DNO heatmaps one of the tools which are used most of all by the industry as they have improved the accessibility of distribution network information. While we welcome their development, we would like to see information shared through heatmaps being standardised, with a robust common approach adopted across all network areas. In our view, a requirement should be placed on DNOs to provide information about flexibility tenders and ANM zones in order to improve consistency and transparency in the presentation of network information across all local grid areas.

- 3. The EDTF and others have identified the need to collate and share 11kV and lower voltage network data. Is there value in creating a sharing mechanism for 11kV and LV network data ahead of the expected roll out of network monitoring and telemetry in RIIO-ED2 and the limited data availability in RIIO-ED1?**

We note that this decision has not been reviewed for nearly ten-years time, over which the topology of distribution network has changed significantly, with the increasing amount of DER being connected to those networks. We welcome the ambition to open up 11kV and LV network data progressively, as DNOs identify areas where they expect needs to emerge and lower voltage telemetry expands in RIIO-ED2.

- 4. Given the complexity of future distribution networks, static data alone may not satisfy user needs. Should the FoS be enhanced to mandate the development of a common network model to allow power system simulation that each licensee must make available for exchange to users and interested parties? If so, what do you consider to be an appropriate standard?**

We agree that future user needs are likely to be centred around the provision of dynamic, real-time local grid data. We have already seen private platforms being rolled out to support DNOs to increase visibility of network requirements. However, mandating a requirement for a common

network model for power simulation would be onerous and difficult to implement ahead of the next price control. If such mandate is enforced, we would like to see Ofgem work together with network companies, academia and industry experts in developing a common approach. In our view, the model should be focused on developing levers on how data flows through the system automatically, without the need for human intervention e.g. telephony requirements which exist at transmission.

- 5. From a review of industry publications we consider that interoperable standards will underpin future DSO activities. Should the FoS mandate the adoption of a IEC 61970 CIM and IEC 61968 CIM for Distribution Management, such that data is collated and constructed in a manner similar to WPDs CIM innovation project model? Are these standards mature and what are the likely benefits and costs?**

No Comments

- 6. Should the FoS also be retained in its current Microsoft Excel form? Is there value in this format?**

We believe it's beneficial to retain the excel format as the most user friendly although we would welcome information being made available in machine readable format and such development should be API enabled.

- 7. Ensuring network information remains accessible is a priority. At present there is no formal requirement for the production of heatmaps. In order to ensure future customer can access the required data, should the scope of the LTDS and FoS be extended to mandate the production of heatmaps?**

Please refer to our answer to Q1 and Q2.

Heatmaps should be intended as an investment and decision-making tool for customers, illustrating network needs so far, however we would welcome to see a common information provision across all network areas. We are also mindful of the roll out of platforms which are able to capture both operational and system data in real-time. We see merit in revising the current scope of the LTDS and FoS to include a requirement for common provision of heatmaps and system information. This should be underpinned by the adoption of a common metadata standard for network data.

- 8. Would there be benefit to adopting common guidance or formats on information presentation within heatmaps, including the presentation of technical information and cost information? What are the barriers to its adoption?**

Yes, we see a benefit in creating best practice and standardise formats so that customers can easily understand the status of the network, technical and cost information without having to be familiarised with each DNO.

We believe that barriers are related to the necessary coordination between DNOs and time to develop these standards. We encourage this adoption through ENA Open Networks.

- 9. The core focus of the LTDS is to assist users to enter into arrangements with the licensee and evaluate the opportunities for doing so. Should the scope of the heatmaps include other network needs, such as flexibility requirements? What is the best mechanism to notify network users of opportunities to enter arrangements with the licensees?**

Flexibility requirements, including active network management, DSO flexibility platform coverage, Local energy markets and areas open to competition, should be a standard requirement and a feature of the heatmaps. Such information is highly valuable to customers and should be more widely shared within the same portal, rather than dispersed and kept in silos.

Information should be widely shared through different sources and update in a regular basis. This would help customers awareness and opportunities that are available. Potential barrier for this would be related to deciding the level of information shown by heatmaps. We believe that heatmaps should make customers aware of the relevant information, including opportunities on flexibility.

**10. On what frequency should these maps be updated? Should they be updated as there are changes to the underlying data or periodically?**

We reckon there could be difficulties around updating information in real time although we encourage that any significant change in the network, that could have an impact on delivery of projects and flexibility requirements, should be made available as soon as possible. If that's not possible, clear timelines should be implemented to allow updates and manage expectations. This would help to build up the customer confidence on the Heatmaps.

**11. Is there a need for a common methodology or principles for estimating load growth? What potential role could the D-FES play in informing the load growth forecasts on the LTDS?**

Yes, we believe there should be a common methodology to estimate load growth in an exercise to homogenise contents and expectations from the customers without having to be familiarised with each DNO across GB. D-FES could be a good platform to support this standardisation by creating the necessary inputs for the LTDS.

**12. Are there any lessons that can be learned from other industry documents such as the ETYS and the NG FES?**

We believe that ETYS and LTDSs should be created in parallel in order to look for synergies and potentially improve T-D coordination. D-FES and NG FES should be sharing best practices and lessons learned as it wouldn't be efficient to have separate methodologies and divergent approaches between those documents.

We also want to highlight the work done in NGESO's Networks Option Assessment (NOA) as part of opening competition in networks and highlighting areas that could be reinforced by market approaches. At the moment, Regional Development Plans (RDP) are trying to replicate this from the DNO side so the question is whether the RDPs should be merge or coordinated with the LTDS to identify these opportunities at the distribution level.

**13. Do you agree that the LTDS should be enhanced to present the key assumptions for network requirements forecasting and the uptake in LCTs, or is this a role better served by the D-FES or other documents?**

We believe these could be the kind of inputs that D-FES could provide the LTDSs.

**14. Forecasting tools have been a focus of a number of innovation projects. Are there any mature tools or techniques that could be adopted to enhance the transparency or robustness of the load growth forecasts?**

No Comments.

**15. Do you agree that IDNOs should be issued with a direction to produce a LTDS?**

We believe IDNOs should input the LTDS of the network areas they are operating instead of producing their own LTDS. DNOs should work along with IDNOs to gather and centralised all the information in relation to LTDS.

**16. What summary information should IDNOs publish? This is currently found in section one of the LTDS FoS, such as information relating to the design and operation of all voltage levels of the distribution network. Please explain your reasoning.**

IDNOs should provide DNOs with enough information to support the development of the LTDS following common guidance and standardisation. DNOs should be responsible of determine the level of information required from IDNOs.

**17. What information on network data should IDNOs publish? This is currently found in section two of the LTDS FoS. Please explain your reasoning.**

We note that iDNOs might lack the resource and expertise to produce LTDSs which could increase administrative burden and result in higher cost to consumer if such requirement is mandated. That's why we believe IDNOs should only support the LTDS development by DNOs, providing enough input to cover for their areas of responsibility.

**18. Do you agree with our proposal on how the LTDS delivery body should be convened and governed?**

and

**19. Would you like to nominate an individual to take part in the LTDS working group? Please set out reasons for their inclusion and any qualifying experience the nominated person has to function as a strong contributor to the group.**

We agree with the governance proposal.

**20. What network monitoring parameters would you like to have access to? At what frequency?**

Standard system parameters such as load flows and voltage across feeders would be welcome. Access to the static model of the network should also become business as usual without the need to overcome any hurdles to get it up to date. High granularity data is also becoming more important now the network is more complex and decarbonised. We believe minute by minute granularity should be a given.

**21. What would enhanced 33kV network monitoring enable that cannot be undertaken today?**

We believe that real time monitoring will facilitate the roll-out of flexible connections, improving and optimising ANM schemes that are still to be fully unlocked across GB. If that is made available, customers may become more proactive on facilitate network management by offering services to DNOs. We reckon that by having this bilateral engagement between customer and DNO, the learning and know-how will improve consistently.

**22. What would enhanced 11kV network monitoring enable that cannot be undertaken today?**

No comments.

**23. What would enhanced LV network monitoring enable that cannot be undertaken today?**

No Comments.

**24. What constraints in data systems architecture do you perceive are limiting network monitoring and visibility?**

Enhanced network monitoring could help unlock the flexibility requirements at lower voltages, including provision of contested services from non-traditional DER such as electric vehicles. As such, we welcome the ambition to improve visibility at 11kV and LV network ahead of the start of RIIO-ED2.

Investment in network monitoring should be underpinned by a robust needs case, so that areas of the network known to be constrained and could host a flexibility market are prioritised. In our view, enhanced monitoring should not be carried out first in areas which are not constrained. The additional technology requirements, such as installation of DNO generator constraint panel, could impose unnecessary burden to DER with firm connection contracts, limiting optionality and development of market alternatives.

**25. What operational data is most important to prioritise opening up first and why?**

We believe that Constraints and conflicts should be the most important data to prioritise as this represents a risk for projects accessing flexible connections and an opportunity for flexible providers. Facilitating access to constraints and conflicts data will identify hot spots for deployment of energy storage, creating a win-win situation for generators in the area and reducing the need to reinforce the network. This operational data should be accompanied by the network configurations in order to give customers and flexibility providers the full picture.

**26. How does a lack of access to this data impact the delivery of flexibility to the system?**

Efficient operation of networks and local system management goes hand in hand with improved data management performance and thus expectation should be appropriately linked to the delivery of efficient whole energy system.

We support the development of requirements for DNOs to publish operational data and a specific licence obligation consistent with that to the ESO. Ofgem should consider the maturity of DNO balancing markets and ways to apply best practice and lessons learnt across networks, when prioritising opening up operational data.

**27. Are there any real or perceived conflicts of interest with DNOs owning and operating ANM platforms at scale? What additional protections could be required for ANM customers?**

No particular conflict if operational data is available and customers are entitled to engage and challenge operation of ANM. We do believe thought that operation of ANM should fall into the DSO functions when possible based on the maturity of the DNO.

**28. In order to preserve optionality over ANM scheme operations, what technical and commercial protections, such as technical ring-fencing, may be required?**

As DSOs develop their services, and the number of participants in flexibility markets grow, there is a risk of divergence of services and the ways in which these services are procured across the country. This could increase complexity and reduce the ability for companies to engage in the full range of markets that are open to them. We would therefore encourage, as far as practicable,

common processes and platforms for procurement of flexibility services. We welcome the extent to which this current goes on, for example through the Piclo platform, and the suggestion that there should be common terms and contracts.

We would like to see Ofgem work together with industry to develop a roadmap where perceived conflicts of interest of both ANM and contests services would be addressed. Further work under this workstream should clearly set out the expected benefits of ANM schemes and the rationale behind obtaining optionality of ANM in the future.

**29. Please provide real world examples where lacking timely access to usable network data, or regulatory barriers, have limited your ability to provide a DSO function or support service. Please submit any relevant evidence and documentation of examples cited.**

SPR has been keen to provide voltage support through a reactive power service to specific DNO areas. Wind farm sites at the distribution level may have an enhanced capability to provide reactive power even when there is no wind.

So far, it has been difficult to convince DNOs and SO to allow for D-sites to provide reactive power as there is a lack access of network information, required to study the impact of the provision of the service. By having access to the data and network models, the customer could proactively study the potential advantages of injecting or absorbing reactive power using the operational asset, demonstrating the benefits and justification when approaching the DNO/SO.

There are also regulatory barriers at the distribution level that penalise the network customer for providing reactive power above a specific range or power factor.

**30. Are there any other issues related to enabling DSO that have not been considered that you think are important? Please provide details of your considerations.**

No comments.