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Date:  
15<sup>th</sup> June 2018  
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Dear Julian,

### **Consultation on the ESO Network Development Roadmap**

This response is from SP Transmission plc (SPT) the onshore Transmission Owner (TO) for the South of Scotland. SPT has a statutory duty and licence obligation to develop and maintain an “efficient, co-ordinated and economical” system of electricity transmission. We welcome the opportunity to respond to this consultation as a number of the areas discussed in the Roadmap influence our ability to undertake this duty.

Our view and experience so far indicates the approach the Electricity System Operator (ESO) is taking to develop and implement their Network Development Roadmap is flawed. The Roadmap proposes to develop the ESO’s own network planning tools to deliver greater value for consumers. However, the risk is the ESO does not build on what is working well and fails to recognise the skills, statutory duties and licence obligations of other industry parties. There is a further risk that the ESO neglects areas of existing responsibility, such as dynamic modelling, that should be business as usual. The ESO should understand its ambition not as expanding its responsibilities into new areas but as ambition to harness the collective capabilities of the industry and deliver tools and outcomes in a way that produces greatest value to consumers.

We see some merit and value that can be achieved in elements of the Roadmap, however greater coordination and consultation with stakeholders is essential to ensure that these major changes are shaped constructively to deliver real and achievable consumer benefits. In some areas the ESO appears to be running ahead of other industry initiatives, such as the Open Networks project, rather than responding to their outcomes.

As a TO we have successfully challenged the SO on certain assumptions and findings (planning and operationally) and this accountability should increase with more stakeholders involved. As a network owner we would expect to be able to assess any options in our area to ensure the safe

operation and protection of our assets and continued compliance with our various statutory and licence obligations.

There are three key themes the Roadmap highlights that the ESO needs to be aware of and respond to as follows:

1. Resourcing and funding
2. Roles and responsibilities
3. Transparency and verifiability of analysis

We explain these areas in more detail in the specific responses to the consultation questions we have provided in the attached Appendix.

Yours sincerely,



Alan Kelly

**RIIO-T2 Commercial and Licence Manager**

Network Planning and Regulation

## **Appendix 1: Responses to Questions**

**Q1: Do you consider there is value in expanding the NOA to allow network and non-network solutions across the transmission and distribution networks to compete to meet transmission network needs at least cost? What are the downsides or complexities we should consider? How could we go further in promoting competition?**

We support the proposal to expand the NOA and incorporate DNO and commercial solutions, but have significant concerns on the approach being taken by the ESO. The Roadmap seems to be outlining a number of changes to the way that responsibilities across the TOs and the ESO are split. It is not for the ESO alone to consult on changes to the way that this works. Furthermore, TO's have statutory duties and licence obligations that they need to fulfil. Greater coordination with the TOs and DNOs is required such that these major changes are shaped constructively prior to going out to public consultation. For example, there should be TO-SO engagement ahead of discussions within the Open Networks forums on certain issues that lies in a TO's responsibilities such as inter-tripping trials.

### Downsides or complexities

The ESO seems to have a presumption that things are not working at the moment. However, SPT have a strong track record of designing to ensure the network meets prevailing requirements, recognising thermal, voltage and stability challenges. For example, we have recently completed a programme of works to increase the capability of the onshore interconnection between Scotland and England to 4400MW, and are in the final stages of completing the Western HVDC Link. We have also delivered a commercial operational inter-tripping scheme (OTS) with the technical capability today to inter-trip up to 970MW of wind capacity, as well as generation at Foyers and Peterhead. This OTS was specifically designed and implemented recognising the stability limited nature of the Scotland-England interconnection and the particular challenges this brings.

Proposed changes to the process may help with overall coordination, but we are not aware of any example where the TOs have failed to meet their obligations with respect to network stability and voltage control. Furthermore, there is significant doubt about the new ESO's capabilities, which are yet to be demonstrated, whereas the TOs have a proven track record of delivery in this area. An ambitious and positive development would be for the ESO to be more active in supporting the TO's, and others', investment case for new solutions. For example, for RIIO-T2 we have already analysed the network in different future scenarios and identified a strong case for solutions to manage system voltage. We would welcome the ESO to assist us in supporting the case for this,

but do not see any added benefit in the ESO repeating this analysis which will lead to duplication of effort and additional cost to consumers.

There are risks to expanding the NOA to incorporate solutions beyond the transmission system. It will be important to ensure that with the inclusion of additional options from third parties, the NOA process remains transparent and effective, and does not unintentionally undermine the timely delivery of transmission solutions and thereby lead to increased costs and/ or reduced system security. All solutions must be developed to meet transmission specifications to ensure that network assets are protected and to maintain system security and ultimately avoid catastrophic failure. The assessment and implementation of protection systems, resilience and reliability in communications, etc. must be maintained. All options must be assessed on their credibility, deliverability and sustainability, and on the basis of whole system, lifetime costs. The electricity industry must learn from the lessons of other sectors (Carillion or East Coast Main Line offering recent high-profile examples) where solutions that appear lowest cost ultimately prove unsustainable and then expensive to remedy. In all assessments, to ensure best value for consumers overall, any costs incurred by other parties must be reflected, including any additional costs in system operation. For example, an inter-trip scheme that exposes the system to additional risk of loss of infeed may result in additional costs on frequency response and reserve.

#### How could we go further in promoting competition?

Effective competition brings benefits to consumers and requires a level playing field, effective co-ordination and transparency of process. We have some concerns in these areas as follows:

We note the ESO Forward Plan includes KPI 17 has two elements one of which is the number of DNO options being included in the NOA. This incentive risks discrimination and an outcome of quantity over quality. A more suitable KPI will be to develop and consult upon suitable methodologies for ensuring solutions proposed are in the long-term interests of consumers. The ESO must walk before it starts to run.

We recommend the TOs and DNOs should co-ordinate in the first instance to identify solutions. In Scotland both TOs operate a DNO business and it will be more efficient for SPT and SHET to engage with their own DNO to seek alternative solutions. It will also be beneficial if the NGETO also provides the primary point for contact with E&W DNOs rather than the ESO. The responsibility for optioneering of alternative technical solutions is the responsibility of the TOs currently. Any DNO solution will need to be assessed for enabling works at transmission and it will

be more efficient than the TO and DNO coordinate in advance of proposing solutions for the ESO to assess from an overall economic basis.

It is important to differentiate between network and other solutions. “Non-build” options that deliver extra capability should be recognised as operational measures assessed against the reduction of constraint costs. For example, an inter-trip does not increase a boundary capability, but it can reduce the cost of constraints and so lessen the need for additional capability.

Although described as “non-build solutions” these options are likely to involve build elements by TOs and will not be cost-free so consideration needs to be made for a suitable mechanism for TOs to be funded for this. TOs will have to carry out more power system analysis studies to verify that non-build solutions can work. For example, the proposed extension of inter-trips in Scotland mean a credible in-feed loss of potentially up to 1800 MW, which would have a significant impact on our network and will require very careful consideration and studies. The economic analysis of such non-build solutions must also take into account the potential unavailability of such solutions. We note that the existing provision for inter-trips is not currently used by the ESO.

**Q2: What do you see as the opportunities and limitations of bringing a probabilistic approach into analysis?**

We agree a probabilistic approach is a useful approach to assess the emerging transmission system requirements. If it is done correctly it can provide a wider picture in order to develop a more coordinated, economic and efficient system. However, such assessment will be complex and for it to be trusted sufficiently to justify investment decisions, the analysis will need to be transparent and verifiable by third parties. Given the NOA timescales it is not clear how this can be easily achieved. It will also be important to ensure that any probabilistic analysis recognises voltage and stability limitations as well as thermal, as to do otherwise would fail to reflect the true system capability and its limitations, and risk undermining the timely delivery of transmission solutions which would thereby lead to increased costs and/or reduced system security.

The current approach is a deterministic means of identifying potential needs, based on SQSS and the ETYS process (which does emphasise extreme Winter Peak conditions). This leads to the development of alternative solutions to meet the potential needs. In the existing process these solutions are then assessed using a probabilistic assessment of costs and benefits. The Roadmap suggests that even a very rare event “has to be planned for”, suggesting that investments are being made unnecessarily. This is misleading as extreme conditions leads to identification of a

wide set of possible requirements that prompts the development of a wide set of options. These options are only progressed if they pass the CBA process, which takes account of the rarity of particular conditions. There is a risk that probabilistic analysis of the ETYS models, and resultant neglect of rare or extreme conditions and the associated system needs, would only achieve a reduction in the scope of options being proposed, thereby undermining the validity of the CBA and ultimately affecting the resilience of the network to extreme events. This emphasises the need for robust methodologies for assessment to be developed with input from stakeholders.

It is unclear how a CBA will be conducted or that it will be sufficient to justify the benefits of non-build and market-based solutions compared to traditional infrastructure solutions. The ESO needs to provide transparency on the methodology it proposes to achieve this. Whole system, lifetime costs need to be incorporated into the CBA to demonstrate overall consumer benefits are achieved. The ability for constraint costs to be forecast for specific circuits has not been available historically and we agree the ESO will need to develop this to effectively assess different options.

**Q3: Do you consider there is value in expanding the network needs covered by the ETYS and NOA to a greater extent across the year and to more regional voltage challenges? What are the downsides or complexities we should consider?**

It is not clear what benefit expanding the NOA to consider voltage issues would add. These are local issues and best studied by the TOs at local level, for example the joint NESOS studies that SPT have carried out jointly in the past with other TOs and the ESO. Such detailed analysis of voltage performance does not lend itself to analysis as part of a wider annual process.

It is possible in regions where the ESO, TO and DNO are separated from each other solutions may be more difficult to identify. In Scotland where there is a closer relationship between TO and DNO it is easier to assess voltage within the region and manage this accordingly, through the most economic and efficient means, whether Transmission or Distribution. This may be a better model for the ESO to adopt rather than including it into the NOA process, which was not designed for this.

**Q4: Do you consider there is value in expanding the NOA to cover system stability needs? What are the downsides or complexities we should consider?**

Similar to our views on resolving voltage issues, we are unclear as to the ESO's intention regarding extending NOA to assess system stability, or how this will add significant benefit. As indicated, stability performance is highly relevant to the capability of the Scotland-England boundary and therefore the design of build and reduced build solutions to reduce operational costs. As a TO, our submission for NOA already includes consideration of stability limits as part of our boundary capability assessment.

To ensure fairness and acceptable outcomes, system stability should be intrinsic to all options. All parties proposing options should be obliged to make sure that what is being proposed helps to maintain system stability and does not introduce undesirable effects that then impose additional costs on customers.

Including explicit assessment in the NOA process may risk adding further complexity, resource burden and cost to the process. In future we are likely to see more control system-related interactions on the system and we will need much better monitoring/models/mechanisms to identify, analyse and deal with these issues. However, such interactions are unlikely to be captured and resolved in NOA timescales.

**Q5: Which other network requirements do you consider the NOA approach could be expanded to cover in order to drive value to consumers? What are the key benefits and considerations?**

The ESO should have an ambition to develop a world-leading position in GB in dynamic modelling that facilitates competition. The ESO can take the lead in defining the models to overcome challenges such as confidentiality issues. This would give the industry as a whole, including TOs and alternative providers, the tools they need to propose solutions.

NOA could be extended to consider requirements around security of supply and resilience. This might be suited to a regional approach. The possibility of generation and interconnector projects as solutions to network problems may also be in consumer's interest. For example, the construction of a new power station in a particular location could resolve multi-faceted network issues.

**Q6: Do you agree with the proposed approach to phasing information throughout the year? If not, how could we best present this information, with the aim of avoiding publishing all in one large publication per year?**

In terms of communication we support a phased approach to analysis, invitation for options, assessment and publishing. However, it is not clear how this could be easily accommodated within the current NOA timescales and we refer to our response to question 1 on the priority to ensure the quality of assessment is not undermined. In principle we agree a phased approach should be better but the resourcing and timing issues need to be assessed. Another consideration is assessment of projects that span regions and how they are presented.

We recommend it would be beneficial if the FES cycle became a 2 year review (biennial) with the year in between providing an opportunity to further refine the previous year and develop regional specific examples. Extending the timescales this way would also ensure that the scenarios were more robust and the process for ETYS and NOA would be significantly easier. The NOA process would still be repeated annually but the scenarios would not change with the same frequency. This will reduce continual optioneering, which is at risk of creating a cottage industry of analysis and generating more uncertainty rather than achieving more robust planning. Although policy can change quickly, such changes should be accounted for in robust scenario development.

It is important that the multi-faceted value of certain options is fully recognised. A single solution may address multiple needs, e.g. boundary capability, voltage control and system stability. If a solution was assessed independently then the overall benefit may not be properly valued. For example, new reactive compensation equipment may only provide a small increase in boundary capability that is insufficient on its own to justify the investment, but when the benefits for voltage control and system stability are also taken into account then the value to customers of this investment can be significant.

We note that the Roadmap emphasises the ESO is working with the ENA Open Networks project. We agree it is essential the development of the Roadmap is built on the outcomes of such wide-ranging and broadly supported industry initiatives and not become the driver for these. We are concerned the ESO is compromising this by pushing ahead with unilateral initiatives. For example, the work being developed under Open Networks Workstream 1 is looking at an extended NOA and incorporating alternative solutions to resolving transmission issues from DNOs or market providers. However, the ESO is already going out to market for solutions, which has the potential



to undermine and conflict with the direction of the industry. It has also been suggested the ESO will extend NOA into the 132 kV network. This should only be done with input from stakeholders through appropriate consultation.

**Q7: What information and in what format would you find beneficial in order to understand the network needs and submit well thought-out options? This could be specific data, guidance to understand the process or support as you go through it.**

As a TO we contribute to this information so are interested to see how other stakeholders respond to this question. We would expect that they will express a need to access a full GB transmission network model to design options, including dispatches for different scenarios. If so this will require the ESO to run economic analysis for external parties, not only signatories to the STC. The ESO should consider what else it can do to make improvements in the sharing of models and provision of data that is adequate for multiple stakeholders to make decisions and satisfy their obligations.

Transparency is extremely important to ensure that the outputs of the process are clear and the ESO can be held to account by stakeholders. As a TO we have successfully challenged the SO on certain assumptions and findings (planning and operationally) and this accountability should increase with more stakeholders involved. As a network owner we would expect to be able to assess any options in our area to ensure the safe operation and protection of our assets and continued compliance with our various statutory and licence obligations.