

## RIIO-ED2 Business Plan: Ofgem Call for Evidence Response

Dr Graham Ault, EVP Markets & Products.

Smarter Grid Solutions.

February 2022.

Smarter Grid Solutions (SGS) is a supplier of the digital infrastructure for smart, flexible network integration solutions related to distributed energy. We supply multiple customers (DNOs and network users) in the UK electricity sector but we are not a 'network user' stakeholder. In that vein, our opinions, views and evidence on RIIO-ED2 business plans are targeted at the quality of the plans (e.g. scale, target areas alignment to customer/system needs and likelihood of success in delivery) in terms of how they could deliver the clean energy transition, the needed smart/flexible solutions that network customers need, the associated DSO systems and functions – all at an efficient cost that does not place an unnecessary burden on network users.

SGS is also a supplier of systems and services to network users through network connection solutions, energy asset fleet management solutions, market participation solutions for distributed energy so our views are not restricted to DNO/DSO systems alone. We have a keen interest in how DNO plans enable our other customer groups to implement their clean, smart, efficient energy investments and plans.

SGS has played a role, in partnership with all UK DNOs and other technology and business organisations, in pioneering new approaches to smart, flexible network management that positively impact the networks in terms of efficient customer connections/access, network operation and network investment.

SGS network management solutions have featured in Ofgem-governed innovation programmes with a focus on demonstrating the concepts, value and potential of smart, flexible network management solutions at meaningful scale.

If we were to assess DNO business plans in respect of the above then we would use the following two criteria:

**Criteria #1: Smart, Flexible Solutions Roll-Out Plan Intent:** Strength of roll out of proven smart, flexible solutions that deliver value to customers (generally through use of system cost downward pressure and specifically through connection cost and timeframe reductions). The solutions are strongly aligned to the DSO systems that enable more connection of distributed energy assets, capturing the value of distributed energy for networks, providing access to markets for the energy asset owning network customers and delivering services that enable whole system operation (both financial and carbon value).

**Criteria #2: Smart, Flexible Network Operation Innovation Focus:** Quality and detailed network strategic planning and business cases, and (most importantly) roll-out plans for enhancements and advancements on solutions for smart, flexible operation of networks. While innovations to date have provided some mature solutions ready for BAU roll-out, these solutions require further innovation to align them with market-based approaches, engage customers throughout their lifecycle and resolve whole system coordination/optimisation challenges. This also includes the pressing need for well-targeted

new solutions for smart, flexible network management that address the full breadth of customer types and objectives (and includes the participation in networks of new customer intermediaries and service providers).

We have not been able to conduct a full review of all DNO business plans but were prompted to undertake a more detailed review of the SP Energy Networks RIIO ED2 business plan. So, we use that as an example of the application of our criteria in our area of specialist knowledge and activity on smart, flexible network operation solutions. We offer evidence related to the requirements for, maturity of and value provided in areas of business plan commitments where we have the strongest experience and evidence.

- **Active Fault Level Management Solution (Commitment #1, p46):** The committed 41 sites managed with this new solution is both ambitious (the translation of a solution emerging from the innovation pipeline into BAU) and deliverable (much of the foundational work on establishing processes and platforms for active network management solutions has been done in ED1. Our experience in assessing connection challenges from high fault levels for connecting customers and also delivering innovation in an active network management (i.e. non network asset) approach to fault level constraints points to both the need and the availability of a solution in this area. Our view is that the innovative solution developed and trialled can be deployed reliably and with the customer benefits as proposed by SP Energy Networks (and other DNOs) at a significant saving to the network capex alternative.
- **Combining different innovative solutions (Commitment #3, p46)** in the same network area will be an essential DNO/DSO capability if customers are to accrue the benefits of smart, flexible network management. This could include (three example areas):
  - Combining generation constraint management solutions with flexibility-based load constraint solutions.
  - Combining customer-based, market-based and control-based solutions to provide the best balance of market-based approaches for efficiency, customer-based solutions for value-add and DNO control based approaches for network security.
  - Combining DNO-led solutions with ESO-led and customer-led solutions to ensure a whole systems and open approach to resolving network challenges.

It is not at all realistic to expect only one type of solution in a network area as the volume and diversity of customer asset connections and accompanying network problems grows in the coming years. This commitment from SP Energy Networks should be welcomed by a wide range of their network using customers. This is an area of challenge for all DNOs and we anticipate BAU roll-outs as well as further innovation programmes in the ED2 period.

- **Embedding learnings from innovation into BAU (Commitment #5, p46):** This is an essential component of the business plan in both addressing real network and customer pain points as well as leveraging the LCNF, NIC and NIA innovation pipeline and sunk investments. To achieve the energy system transition envisaged by government policy requires a much broader range of conventional and new/innovative/smart/flexible solutions. To deliver that range and blend of solutions requires committed resource as well as organisational commitment so it is therefore pleasing to see this as a specific business plan commitment.

- Other commitments under the **‘Develop the network of the future’ section of the business plan (Commitments #1 - #13)** seem well targeted and aligned with our own understanding of real, current and emerging customer needs ranging network voltage levels, types of network and customer challenges, innovation solutions, deployment of now economic technologies (e.g. monitoring for visibility), market based approaches to network operation providing network development and investment benefits, and a general progressive facilitation of legitimate customer activities (the underlying rationale for networks). Whole system planning will continue to be challenging for a wide variety of reasons so making a business plan commitment to this area and providing the resources to deliver this is important for the development of the network required by customers and society.
- The commitment to offer viable **customer flexible connections in 22 areas (Commitment #27, p80 and p34 for Constraint Managed Zones)** supported by **better planning and operational information for customers (Commitment #29, p80)** is regarded as essential if the benefits of smart, flexible solutions are to be understood properly in terms of costs, benefits, alternatives and accurate expectations of the performance of flexibility in network operations. These are welcome commitments to both ensure efficient network development (lowest totex) and timely/successful connections (net zero delivery). As a pioneer of the Active Network Management solution behind flexible connections, Smarter Grid Solutions keeps a record of the network upgrade investment capex savings from the solutions we have deployed. Our current reckoning where there are high-quality public sources of the alternative investment costs, avoided or deferred by flexible connections (enabled by ANM) is £245m across six DNO deployments (SSEN Orkney, SPEN Berwick & Dunbar, SPEN Dumfries & Galloway, UKPN Cambridgeshire, UKPN Norwich and WPD Lincolnshire). The public-domain evidence behind the benefits of these six schemes can be provided on request.

These are significant gains that we fully expected to be replicated many times over by DNOs. This has not happened for various reasons, so we are pleased that SP Energy Networks (and other DNOs) are making commitments to do more for customers in this area. We fully expect that the best customer, short and long-term, outcomes will consist of a blend of network upgrades and smart solutions, market-based solutions and DNO control solutions, temporary flexible solutions (that manage uncertainties) and permanent long-term solutions. However, the benefits of flexible connections are clear, where they are deployed intelligently.

We know from work with connecting customers that both the availability of the actual smart, flexible connection and operation solution is of prime importance but, following that, the supporting processes and information required to assess the suitability, costs and benefits of the solution is also an underlying need.

- We welcome the business plan commitment to **reduce scope 3 carbon emissions through the supply chain (Commitment #80, page 116)**. As a progressive vendor, we have our own commitments, leadership aspirations and science-based targets in our own carbon footprint and believe that DNOs/DSOs can plan an important role in supply chain transition.

While we focus on the SP Energy Networks business plan above, we recognise that other DNOs have high quality plans in these areas of smart, flexible network operation solutions. Where these business plans promote the efficient, timely and widespread deployment of smart, flexible solutions

(married appropriately with primary network asset investments to give the overall most efficient, flexible and resilient networks) we would also strongly support them.

**Contact**

Graham Ault: [gault@smartergridsolutions.com](mailto:gault@smartergridsolutions.com)