

By e-mail to: [opennetworks@energynetworks.org](mailto:opennetworks@energynetworks.org)

01 May 2019

Dear Open Networks,

**ELEXON's response to your consultation on the Future Worlds Impact Assessment.**

As you know, ELEXON is the Code Manager for the Balancing and Settlement Code (BSC). We are responsible for managing and delivering the end-to-end services set out in the BSC and accompanying systems that support the BSC. This includes responsibility for the delivery of balancing and imbalance settlement and the provision of assurance services to the BSC Panel and BSC Parties. We manage not just the assessment, but also the development, implementation and operation of changes to central systems and processes. In addition, through our subsidiary, EMR Settlements Ltd, we are the Electricity Market Reform (EMR) settlement services provider, acting as settlement agent to the Low Carbon Contracts Company (LCCC), for the Contract for Difference (CfD) and Capacity Market (CM). EMR services are provided to the LCCC through a contract and on a non-for-profit basis.

We are strongly supportive of the developing flexibility markets, and stand ready to facilitate them in whatever way we can. This includes supporting initiatives to widen access to the energy markets, such as [Project TERRE](#), driving changes to improve efficiencies, such as [market-wide Half-Hourly Settlement](#), and proposing solutions to energy market problems, such as our [white paper on multiple suppliers](#) which is now being progressed as [BSC Modification P379](#).

The views expressed in this response are those of ELEXON Ltd alone, and do not seek to represent those of the BSC Panel or Parties to the BSC.

Yours sincerely,

Peter Frampton  
Market Architect, Design Authority

## FUTURE WORLDS IMPACT ASSESSMENT: ELEXON'S RESPONSE

---

**Q1. Please confirm which stakeholder group you believe that you belong to; this will enable the Open Networks Project to understand the spectrum of respondents to this consultation.**

ELEXON is the independent Market Operator and central Settlement Agent for imbalance and Balancing Mechanism trades in GB.

**Q3. Do you agree with the conclusions and insights within the Executive summary? If not, please explain your rationale. Please provide reference to more detailed comments against individual sections if this is appropriate.**

The majority of the executive summary appears to be a sensible review of the current market situation and the findings of the impact analysis.

**Q4. Do you agree with the options set out as potential transition paths?**

As mentioned in our response to Q3, we do not agree that the industry is starting from a World B scenario. However, we believe it is useful to set out future transition options.

We do not agree that a key driver towards any individual world is the penetration of Distributed Energy Resources (DER) in the system. In any Future World, there is likely to be an element of aggregation of DER resource, either by a private entity (as per aggregators/Virtual Lead Parties in the current system) or via the market model (e.g. DSOs as aggregators in World A). We believe that mechanisms will therefore evolve to efficiently dispatch DER in any of the Future world scenarios.

**Q6. Do you agree with the assumption that all transition paths start in Stage 1 of World B?**

We disagree that the current World in which we are operating is World B – coordinated ESO/DSO procurement and dispatch. While ESO has an established framework for procuring and dispatching flexibility, DSOs are currently limited in their ability to do the same. This is because there is a lack of a coherent market framework enabling these markets to operate economically and efficiently in perpetuity.

We welcome the ability for DSOs to trial procurement and dispatch and believe it to be a crucial element of the innovation process. However, we don't believe the current world is reflective of an effective World B model, even at Stage 1 of implementation. As the current market framework doesn't contain economic and efficient frameworks for DSO, we don't believe any of the models are particularly close to current arrangements. World D may be closest, as NGESO has capability to instruct flexibility at distribution level via existing ancillary services.

We do agree that current direction of travel, taking into account current initiatives, is towards an early World B model.

**Q7. Do you agree with the areas identified for further work in the 2019 workplan and the further work ideas in the impact assessment or do you feel there are other areas of work that should be prioritised to progress in this area?**

We believe that 'What is the value of flexibility at low voltages to network operators' is a useful question, but that we should take care not to consider the answer in isolation. The value of flexibility extends beyond the immediate value to a low voltage network operator.

With regards industry arrangements facilitating a different pace of change across regions, we believe it is important that this is explored without creating the possibility of different approaches between regions. Arrangements should move at the pace of the fastest developments, rather than the slowest, and this can be achieved by implementing new arrangements in parallel with legacy arrangements.

We believe key developments will include platforms for flexibility developed during the [Flex competition](#), which ELEXON is supporting.

**Q9. Do you agree or disagree with the four categories of system operation benefits identified? Are there areas that should be excluded from the list and/or other areas that should be included?**

We agree that the four categories of system operation benefits identified represent the largest categories. Two second-order categories that you could consider are transmission losses and system operator costs:

- In 17/18 around [5.5 TWh](#) of electricity were lost on the Transmission system alone, representing approximately 2% of all electricity generated. Any Future World that reduced losses relative to the other worlds would offer a significant benefit, financial as well as environmental through reduced emissions.
- The different Future Worlds described will have a range of internal System Operator costs associated with them. The benefits of cheaper models could be included in the evaluation of benefits. To put these costs in context, NGESO reports (<http://yourenergyfuture.nationalgrid.com/media/1587/exploring-how-the-eso-could-be-funded-in-riio-2-v1.pdf>) that during RII0 T-1, their costs ranged from £93-£115m Opex, with £36-60m Capex, as well as up to £30m Incentive payments, giving a total cost to the consumer of £129 - £205m p.a.. When DSO costs are added to these figures, this represents a relatively significant range of costs.

**Q10. Do you agree, disagree on the key benefits assumptions contained within Appendix B (eg all Worlds, apart from World C, achieve the same benefits by 2050 etc) and used in the impact assessment? If you disagree, please explain your reasoning. Do you have any other comments?**

While the majority of the assumptions would appear to be valid, there is an implicit assumption in the methodology for System Balancing Costs that current quality of supply standards will not change until 2050.

- The current definition of Unacceptable Frequency Conditions provided in the Security and Quality of Supply Standards (SQSS) of 49.5 – 50.5 Hz, together with the Operational Standards of 49.8 – 50.2 Hz adopted by NGESO, were set many years ago and may no longer be appropriate in the future as modern electronics are less dependent on a precise system frequency. It may well be that these standards could be relaxed in the future, leading to reduced Frequency Response costs.
- Similarly, the SQSS also sets the requirement that the system should normally be secure against two independent system faults (“N-2”), particularly in England and Wales. This represents a higher level of security than is adopted in most of the rest of the world where systems are only secured against a single system fault (“N-1”). Were this requirement relaxed in GB this would lead to a significant reduction in Constraint costs.

In considering the range of the benefits it may be appropriate to consider how much benefit would be added to the optimistic scenario if either or both of these supply standards were relaxed.

Another potential enhancement to the methodology would be to assess the potential uncertainty in the NGENO Future Energy Scenario forecasts. An analysis of the accuracy of Future Energy Scenario (FES) forecasts made in 2011 or 2012 for 2018 or 2019 would help inform the uncertainty in FES forecasts for 2030.