

# ELEXON

10 May 2023

By e-mail to: [flexibility@ofgem.gov.uk](mailto:flexibility@ofgem.gov.uk)

**Dear Flexibility Team**

**Re: Call for Input on the Future of Distributed Flexibility**

Thank you for the opportunity to respond to your call for input on the future of distributed flexibility.

Elexon is an independent, not-for-profit company that is the Code Manager for the Balancing and Settlement Code (BSC) for the electricity market. We provide governance, settlement and data platforms (Elexon Kinnect) that enable the smooth operation of the electricity market, which incorporates energy suppliers, generators, flexibility service providers and network companies across the UK.

Our end-to-end expertise in governance, assurance, technology platform development and electricity market data is available to support the industry, Government and Ofgem as the energy sector transitions to net zero. Building on our purpose of serving the industry, electricity market data we hold is open, and available for anyone to access, modify and distribute. As a trusted, independent and reliable market expert we continuously look to evolve and innovate for the benefit of customers and consumers.

Most recently, we utilised our domestic and non-domestic half hourly consumption data alongside our extensive knowledge, to administrate the Government's Energy Price Guarantee and Energy Bill Discount Schemes, processing up to £650m of subsidy payments per week - providing support for consumers. We also calculate, collect and distribute payments to Contract for Difference (CfD) generators and Capacity Market (CM) providers, on behalf of the Low Carbon Contracts Company (LCCC), through our subsidiary, EMR Settlement Ltd.

We believe there is value in reviewing both the Consultation and Call for Input in tandem, as there are synergies between the governance arrangements and the enabling infrastructure. We have highlighted the key themes emerging from both our responses below:

1. **Supportive of proposed reforms** – We are strongly supportive of the proposals aimed at ensuring that the governance arrangements and enabling infrastructure at the sub-national level are fully developed and harmonised to enable a cost-effective transition to a net zero future. We support the case for change and the conclusions from Ofgem's analysis of current market arrangements – our own analysis identified similar strategic challenges.
2. **Leveraging and utilising existing energy infrastructure and expertise** – We have consistently advocated for the utilisation of existing energy infrastructure, expertise and capabilities, where appropriate, rather than 'new-build' infrastructure or the creation of new entities. To that end, in our response to the Call for Input on the future of distributed flexibility, we support Archetype 3 – Medium 'Exchange' as the most feasible option. We believe that utilising and building on existing infrastructures, expertise and capabilities, where possible, can drive efficient outcomes for all stakeholders, while ensuring that the transition to net zero is achieved at least cost.

3. **Timely implementation** – In both publications Ofgem emphasised the importance of timely delivery and the need to act without delay. We propose that those reform options that can be implemented promptly should be prioritised and considered further. For instance, although Archetype 4 - 'Thick' performs well in terms of meeting Ofgem's three critical functions, we do not believe it is feasible given the time and costs involved in its delivery. On the other hand, Archetype 3 – Medium 'Exchange' builds on existing capabilities, can be implemented faster, and performs well against the three critical functions. The earlier we implement the proposed changes, the sooner we can enable the benefits of distributed flexibility, particularly as it will be a key enabler for achieving net zero.

In our response to the call for input questions below we focus on those questions where we believe we can add value and outline practical considerations and suggestions based on our role at the centre of the market. The views expressed in this response are those of Elexon Limited, and do not seek to represent those of the BSC Panel or Parties to the BSC.

If you would like to discuss any areas of our response, please contact Hussein Osman, Senior Strategy & External Affairs Analyst ([Hussein.Osman@elexon.co.uk](mailto:Hussein.Osman@elexon.co.uk))

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Peter Stanley', with a stylized flourish at the end.

Peter Stanley  
Chief Operating Officer

## **Elexon's call for input response**

### **1. What do you think distributed flexibility could contribute to the energy system?**

We value Ofgem's engagement with industry on the future of distributed flexibility. Distributed flexibility will play a significant role in the future energy system, particularly as we begin to accommodate greater amounts of variable renewables and electrify other sectors, such as transport and heat. If coordinated well, distributed flexibility can contribute the following benefits to the energy system:

- Increase energy security – If left uncoordinated, the intermittent nature of renewables coupled with the increased demand for electricity, could destabilise the energy system. However, if coordinated, distributed flexibility can help balance the energy system, particularly when margins are tight, stabilising the energy system.
- Accommodate greater levels of renewables – The more distributed flexibility that is connected to the system, the more renewable energy that we can accommodate, meaning that we can transition away from fossil fuels faster. This is particularly important given the Government has committed to achieving a decarbonised power system by 2035.
- Reduce energy bills – Distributed flexibility can help consumers reduce their energy bills. Consumers who are able to participate can respond to price signals and be rewarded for it. For example, Octopus Energy paid out £5.3m to their customers who participated in the National Grid ESO Demand Flexibility Service (DFS) last winter. The success of the DFS illustrates what distributed flexibility could achieve. Customers will also benefit even if they do not participate, given that distributed flexibility will reduce network reinforcement, system costs and infrastructure investment, which subsequently reduces their bills.

Distributed flexibility will be a key enabler for achieving net zero both within the power sector by 2035 and across the economy by 2050. It is therefore important that Ofgem, as the regulator, focuses on removing the barriers that prevent distributed flexibility from scaling.

### **3. Is there a 'case for change' and a need for a common vision for distributed flexibility?**

We agree with Ofgem's view that there is a need for change, as well as with Ofgem's proposed vision. In our engagement with Flexibility Service Providers (FSPs) and Market Operators, we found similar strategic challenges within flexibility markets. Some of these challenges included a lack of trust, lack of standardisation across products, high burden of risk on FSPs, lack of stacking opportunities and slow pace of change. If the volumes of distributed flexibility are to scale to the levels required by 2035, a significant step change is required. We believe that intervention has come at the right time, with Ofgem enabling the industry to develop and innovate with minimal intervention over the past few years. We are therefore supportive of both the introduction of a common digital energy infrastructure, as well as wider enablers and reforms, such as Market-wide Half Hourly Settlement (MHHS), Review of Electricity Market Arrangements (REMA), and Future System Operator etc.

### **5. Will certainty of an end vision help accelerate enabling work and make it cohesive?**

Yes, we agree that certainty of an end vision will help accelerate enabling work and make it cohesive. As noted in the response to the previous question, due to its nascent nature, Ofgem has enabled market participants in flexibility markets to innovate and develop products with minimal intervention. We are now at a stage where we need to converge all accumulated knowledge and deliver towards a clearly defined vision and end goal. This will allow market participants to develop products that are aligned, that will benefit the energy system and subsequently end consumers.

### **6. When should a common digital energy infrastructure be in place? And therefore, when should development begin?**

We believe that a Common Digital Energy Infrastructure (CDEI) should be in place as early as possible. The adoption of Archetype 3 – Medium ‘Exchange’ offers the best opportunity to quickly establish an initial core platform, supported by the adoption of a set of common standards. Once in place the new infrastructure will be able to evolve to accommodate an increasing number of users and products.

The CDEI should be architected with flexibility and interoperability as key design principles. This will ensure that the market can be left to evolve organically and not be hindered by original process and technology restrictions. It will be very difficult to design a Flexibility Exchange that endures, without flexibility of design being built in and offering easy prototyping and development of new flexibility products.

In terms of timelines, with distributed flexibility being a key enabler of a decarbonised power system by 2035 and a net zero economy by 2050, we would recommend that development commence as soon as possible. The sooner development commences, the sooner benefits can be realised. However, with other significant market wide reforms such as REMA, FSO and MHHS also underway, we recommend that Ofgem take a whole-systems approach and develop the infrastructure alongside other initiatives rather than in isolation.

## **7. What should a common digital energy infrastructure look like, and why? Please consider the archetypes or develop your own proposition.**

The CDEI should be developed in the public cloud to leverage the native scalability, flexibility and resilience it provides. The implementation of the infrastructure should have a focus on interoperability and adopt loosely coupled architecture patterns.

Elxon have implemented our Kinnect platform in Microsoft Azure, which delivers our core settlement and insights platforms. Key design principles of interoperability and scalability were applied within the design. We have implemented a Data Acquisition Hub, not only capable of ingesting the anticipated growth in data volumes due to the MHHS Programme, but also to provide the flexibility to absorb future data integration options. These principles are also reflected in the loosely coupled, micro-service patterned architectures we have adopted.

Elxon, in our role as System Operator of the MHHS Data Integration Platform (DIP), are overseeing the implementation of a core piece of energy sector infrastructure. The DIP was designed to replace existing file-based data transfers with an Event Driven Architecture. This will transform the way data flows across the sector and is again designed as a cloud-native, scalable architecture. The flexible design principles adopted have ensured that future industry use cases can be delivered. We believe the DIP aligns well with other industry initiatives, such as Digital Spine, in its capability to share and transfer data, using cloud API technologies.

We see leveraging existing systems and platforms, such as the DIP, as a key factor to faster delivery of the CDEI. However, we must ensure common standards around areas such as data integration are adopted by all stakeholders.

Using flexible platforms, such as those developed in Kinnect, allows the easy integration of new, more granular IOT level data sets that can be integrated using API technologies. This flexible design and architecture approach will allow the infrastructure to develop organically and integrate data from potentially millions of devices. These new data sets will enrich our understanding of energy usage and promote further product innovation and drive the goal of net zero.

## **8. What is your view on the desirability and feasibility of the archetypes or your own alternative proposition?**

We believe that Archetype 3 – Medium ‘Exchange’ is the most feasible option. While we recognise that Archetype 4 scores well in terms of delivering on the three critical functions identified by Ofgem, we do not believe the option is feasible given the time and costs involved in its delivery. Archetype 3 will be faster to implement due to the fact it will be implemented alongside existing solutions and is less reliant on a single entity to deliver a larger-scale

programme. To reiterate, the sooner we can implement a solution, the sooner we can realise the benefits and drive towards delivering net zero. While Archetype 2 does deliver some benefits in comparison to the counterfactual, we do not believe it will tackle the strategic challenges and market failures highlighted within the Call for Input.

For the infrastructure to be successful, particularly across archetypes 3 and 4, it is important that there is independent governance in place across the infrastructure.

The consequence of introducing a single exchange, managed centrally, means that conflicts of interest could occur in the auction process. An independent body will be able to navigate any disputes or assurance issues more easily, than a self-managed Flexibility Exchange. We believe some of the processes that we run under the BSC, could be adapted to deliver independent and transparent governance services to emerging infrastructure. We have managed and delivered the BSC as a fully independent organisation that is accountable to our customers (BSC Parties). As part of the delivery of the BSC, we manage not just the assessment, but also the development, implementation and operation of changes to the BSC and its supporting systems. To do this we work closely with industry through workgroups, committees and consultations. Our engagement with industry includes both the BSC Parties and a wide range of stakeholders, including Ofgem and Citizens Advice. Any organisation that comes in to deliver these services must engage in open, participatory processes with a wide range of stakeholder representation.

We note in our response to the parallel consultation on Future of local energy institutions and governance that the Market Facilitator as a neutral entity could provide governance services under the common digital energy infrastructure. We suggest that Ofgem consider roles and responsibilities in tandem, which will help identify potential synergies.

## **9. Should a common digital energy infrastructure be new-build, or should it buildout from existing infrastructure?**

As previously outlined, we would recommend leveraging existing energy infrastructure and assets rather than implementing a 'new-build' CDEI. We believe that a 'new-build' would be difficult to deliver and would be both more expensive and slower to implement.

Our preference for leveraging existing market assets is not restricted to technical systems and platforms, but also relates to leveraging current governance and code structures. Archetype 3 envisages direct access to the Common Digital Energy Infrastructure by third parties for governance and regulation purposes.

The role Elexon undertakes in overseeing wholesale market rules has synergies with the role an independent governance body will need to deliver in the future. Our experience in this field is being applied to the governance structures we are developing to support the emerging Data Integration Platform (DIP), and our experience could be utilised further in the Distributed Flexibility arena.

The DIP's governance is being designed so that the DIP Manager will bear almost all of the responsibility for its operation and subsequent decision making, alongside a DIP Change Advisory Board (DCAB) who will be called upon only when there is likely to be a material impact on either the DIP or DIP users. For the most part, the DCAB will act as a 'critical friend' and 'trusted advisor' to the DIP Manager. The absence of various committees or panels means the change process will be far quicker than is seen elsewhere in industry codes, freeing up industry's resources to focus on delivering net zero.

However, we recognise the importance of openness and transparency, and to that end, have a default position of being 'open and transparent' in terms of data governance and sharing. We will have an open data policy in line with ESC's recommendations and Ofgem's Data Best Practice guidelines. All the decisions taken by the DIP Manager will be published, and relevant parties will have the right to appeal the DIP Manager's decision. Any appeals will be heard by the DCAB and could ultimately, be sent to the Authority for determination. While we have extensive experience in providing governance services to the BSC, we are illustrating how these competencies can be used to deliver governance under emerging infrastructure.

## **10. What are the important areas for consideration when designing institutional delivery models for a common digital energy infrastructure?**

The CDEI should be designed applying principles of interoperability, flexibility and collaboration. Our support of Archetype 3 as the most appropriate option, reflects our belief that the implementation should be an enhancement to current solutions, and therefore be implemented by multiple stakeholders, rather than a single entity (as outlined in Archetype 4).

In our recent response to the Ofgem Data Best Practice consultation, we supported the adoption of common meta-data standards and the adoption of data catalogues, both of which will increase data discoverability capabilities within the sector. The adoption of these types of standards will be necessary if parallel implementations across the sector are to integrate seamlessly.

Furthermore, we see data transparency and the adherence to open data principles as key pillars in the new infrastructure. We implemented the P398 modification to the BSC in June 2021. Under P398, all data is assumed to be open unless there is a reason why it cannot be published. This means that anyone can access Elexon's data for free, without having to apply for a license. We have recently implemented the new Insights Solution, on our Kinnect platform, as a replacement to BMRA, where we publish our settlement related data, following these principles.

Our experience in the management and delivery of the MHHS Programme, leads us to envisage the implementation of the CDEI in the same light. It is important to acknowledge that the CDEI will have a wider scope than traditional energy data flows and therefore, we do not recommend that delivery to be managed centrally for all stakeholders. We would foresee that the initial CDEI can be developed centrally, though adoption should not be managed and rolled out centrally, but should be the responsibility of individual stakeholders.