

Email to:
flexibility@ofgem.gov.uk



10 May 2023

Dear Doug,

Future of distributed flexibility 2023 call for input

Scottish Renewables is the voice of Scotland's renewable energy industry. The sectors we represent deliver investment, jobs, social benefits and reduce the carbon emissions which cause climate change. Our 330 plus members work across all renewable energy technologies, in Scotland, the UK, Europe and around the world. In representing them, we aim to lead and inform the debate on how the growth of renewable energy can help sustainably heat and power Scotland's homes and businesses.

Scottish Renewables welcomes the call for input on the Future of Distributed Flexibility and believe that it is an appreciated and necessary reform to facilitate flexibility. Ofgem's call for input starts to explore the changes needed to increase flexibility market liquidity & participation. Ofgem's thinking is at an early stage in its development, and we will proactively engage in the consultation process and industry wide discussions.

The call for input is seeking a broad range of opinions to inform further thinking, which will later on lead to a consultation on enacting particular rules constraining how flexibility markets are organised, and the arrangements around the infrastructure that supports such markets with a particular spotlight on Consumer Energy Resources (i.e. heat pumps and EVs which have a primary purpose other than energy), often framed in the context of deferring distribution reinforcement and talking of the need to deconflict geographic and temporal markets "ideally by a neutral third party".

Distributed flexibility (across energy vectors) will be an essential component of any net-zero energy system. Flexible technologies are vital to meeting Governments targets, including integrating 50GW of offshore wind by 2030, helping to deliver on the 10GW of low carbon hydrogen production capacity by 2030, as set out in the Energy Security Strategy. Greater levels of flexibility in the system such as energy storage will allow the UK to integrate renewables with significant savings by up to £10bn a year in 2050¹. Flexibility is more than simply making the transition faster – it also makes it cheaper and more reliable.

Scottish Renewables supports the need for a common vision on flexibility, however this needs to tie in all energy vectors and stakeholders from Government to consumers. Furthermore, we support the case for common digital infrastructure to enhance the operations of the electricity networks in the UK. This is a necessary reform to address the market failures outlined in the call for input, particularly those in imperfect information and market coordination (e.g., perspective, investment certainty and Consumer Energy Resources financing). However, we believe that the challenge is made harder by uncertainty of future electricity markets. Deliverability needs to be a key consideration here and have outlined our views on the sections in the call for input below.

¹ Smart Systems and Flexibility Plan, 2021 [Transitioning to a net zero energy system: Smart Systems and Flexibility Plan 2021 \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/97422/smart-systems-and-flexibility-plan-2021.pdf)

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Focus on Consumer Energy Resources (CER) flexibility

While we believe that consumer flexibility will play the most significant role in distributed flexibility, the focus should be shared with DER flexibility. The optimum solution will involve both CER and DER flexibility with each solution complementing each other. DER, given the right incentives and co-ordination, will be able to move quicker at scale and with System Operator confidence to deliver near future flexibility.

Need for a common vision for distributed flexibility

We agree that a common vision for what distributed flexibility is required to achieve net-zero will help ensure all stakeholders in our energy system can understand their potential contribution to the whole, and can innovate, design, and supply solutions to realise that opportunity with confidence. This should include a co-ordinated plan for what a net-zero fully flexible system from consumer to transmission would look like so that consumers, OEM, industry, regulators, and government can work towards that coherent plan with efficient incentives, market design, barrier removal etc.

Setting out a cohesive vision for net-zero distributed flexibility that ties in all energy vectors and all stakeholders from Government to consumers, means everyone can identify now how and where their piece of the puzzle fits and hence drive the development of lowest cost solutions that address many requirements rather than isolated and specific short-term objectives.

Deliverability of common digital energy infrastructure

We agree with the need for a common digital infrastructure that creates a rich data environment. A smart and digitised energy infrastructure can enhance the operations of the electricity networks in the UK. However, very ambitious IT projects at this scale can be extremely difficult to deliver, while we only have limited amount of time if we are to reach 2035 target to decarbonise the power system.

We are concerned that the CIM model suggested by Ofgem would be very difficult to implement and ease of delivery should be considered. There is additional risk of coming up with a solution which would prevent optionality in data submission by aggregators and market participants, while a much better approach would be a digital spine which defines data needs, but delivery medium is a decision left to the market.

If a common communication protocol and data requirement framework can be agreed, then that modular elements of the market platform could then be developed independently, and gradually integrated into a coherent system over time. This would hopefully avoid delays in deploying and co-ordinating flexibility whilst waiting for a single integration 'platform' to be created.

Three archetypes for common digital energy infrastructure

While the functionality of 'Thick' archetype is compelling, concerns around the task of delivering and operating such a system in the timescales required and for an acceptable cost, may make the 'Medium' archetype more achievable in the real world. The Business-as-Usual approach or 'Thin' archetype might not deliver the co-ordinated lowest cost distributed flexibility we need for net-zero.

We would also welcome further clarity on the scale of buyers competing for individual assets that Ofgem is anticipating in the marketplace, particularly for physical products (energy, capacity,

frequency). The call for input talks about 'many-to-many' markets but does not provide examples of these markets being possible at scale. The challenge is made harder by uncertainty of future electricity markets and clarity on which markets the digital platform would provide solution for is an important consideration here.

As is the nature of flexibility markets, where there are so few buyers but many suppliers, it may be sensible if the buyer of flexibility is the ESO/FSO or DSOs. In their recent assessment on the ESO Market Design Framework, LCP Delta have outlined the importance of increasing competition in products where the ESO as the single buyer of flexibility is procuring services and the need to continue review service requirements to reduce barriers to entry². Between the 'medium' and 'thick' versions necessitates a conversation regarding how many individual platforms will and should evolve to determine the scale of coordination. If the call for input is implicitly assuming that only DSOs will operate markets, then a single point of coordination with ESO/FSO to share data is distinct from an example where the DNO markets sit alongside many-to-many markets. An example of a many-to-many market is the ERCOT ancillary service trading market in which peer-to-peer trading of ancillary service obligations is encouraged, enabled, and coordinated through the market platform of the ISO.

Important areas for consideration for common digital infrastructure

There are a couple of broader considerations which Ofgem needs to take into account when designing the delivery model for common digital infrastructure:

- Clarity in purpose and specification, stakeholder confidence in timelines, deliverables and data security, accessibility and transparency of end product are really important so that users can easily access the information they need to engage, and they can readily understand and process the results.
- At a minimum, the solution should have the capabilities to optimise across markets, ideally with a single source of information, and clarity on decision making both for the users and the system operators.
- Greater consideration should be given to need for investment in accelerating enablers such as LV monitoring in all 3 archetypes, not only the 'Thick' approach.
- As each archetype provides different features with unique value / effort ratings, understanding the context of 'value' to the market participants would allow for a fairer assessment of each archetype. We would support an ecosystem which prioritises the 'core functions' of the proposed digital energy infrastructure.
- There should be a distinction between physical and financial markets as these have different requirements for coordination (e.g., ToU tariffs vs. capacity markets).

Lastly, a regulated socialized cost model for delivering the common digital infrastructure with appropriate incentives in place to ensure efficient delivery and operation does appeal for what would be a common platform across many disparate stakeholders both commercial and domestic. Such a model would hopefully aid trust, accountability, and transparency. Such a financial model would lend itself, towards a delivery model by a mandated central entity.

Scottish Renewables would be keen to engage further with this agenda and would be happy to discuss our response in more detail.

Yours sincerely,

² LCP Delta, 2023 [Full Report - LCP Delta ESO Market Design Framework Assessment 2023-03 \(dynamics.com\)](https://www.dynamics.com/Full-Report-LCP-Delta-ESO-Market-Design-Framework-Assessment-2023-03)

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