

# Icebreaker One response to Ofgem's call for input on the future of distributed flexibility

## **FAO: Digitalisation and Decentralisation and the Energy Systems Management and Security teams**

This is Icebreaker One's response to Ofgem's call for input on the future of distributed flexibility<sup>1</sup>. It can be published openly.

Please note that throughout this consultation, Icebreaker One uses the terms Open, Shared and Closed data as defined [here](#)<sup>2</sup>.

If you have any questions about our submission or require clarifications please do not hesitate to contact us via [openenergy@icebreakerone.org](mailto:openenergy@icebreakerone.org). Thank you for considering our submission.

### **Call for input response:**

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

We will have millions of things generating electricity (e.g. solar panels, wind turbines), so the job of getting it all balanced properly across our national grid is complicated. At the same time, we are electrifying all of our transport (cars, buses, trains, trucks), so not only millions of homes and businesses will use electricity but millions of vehicles too.

At the heart of this energy revolution is data. Data and software will be needed to build systems that can continuously automate balancing supply and demand. With millions of systems, our infrastructure will have to 'self-heal' (e.g. a hospital's lights need to keep on even if it's cloudy).

Access to energy data – including smart meter data – is vital for a flexible, digitalised, and decentralised energy system. The Energy Digitalisation Taskforce report<sup>3</sup> recognises data as being crucial to the delivery and operation of a net zero energy system, and acknowledges smart meter data as a key dataset is not effectively flowing.

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<sup>1</sup> <https://www.ofgem.gov.uk/publications/call-input-future-distributed-flexibility>

<sup>2</sup> <https://icebreakerone.org/open-shared-closed/>

<sup>3</sup> <https://es.catapult.org.uk/report/delivering-a-digitalised-energy-system/>

As energy grids will be under increasing pressure over the next few decades with both usage and the transition away from fossil fuels. More and better data will help to improve both planning and delivery of services including flexibility and demand response.<sup>4</sup>

As part of our research, we have found the need for more granular data, which is very useful for capacity management on the network, load modelling, and flexibility.

## **2. Will a focus on CER flexibility also help enable other forms of flexibility, especially distributed flexibility?**

In order to incorporate Consumer Energy Resources into a flexibility system, it is essential to have consumer consent to provide their data to whoever needs it.

CER includes products such as electric vehicles and heat pumps - these are a key component of distributed flexibility. From our research, we have found it is difficult for DNOs to make a decision on an individual property, because it is hard to access useful consumption data. While a DNO usually has easy access to substation data, if there was also access to household level data, it would allow a DNO to quickly make decisions on whether a supply to a property needs to be upgraded for a heat pump or EV charger, or whether the capacity is not available for it to approve and why.

We recommend providing a mechanism for the consumer to consent to provide the data to whoever needs it, at an appropriate level of granularity.

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

We support the proposed case for change, and for there to be a cohesive vision for distributed flexibility. Through our Open Energy work and stakeholder engagement, we co-designed Open Energy to tackle the challenge of modernising access energy data, ensuring it was appropriate for the rapidly changing, and increasingly distributed energy sector. Its aim was to create a low friction way to make it easy to find, access and share energy data through direct stakeholder engagement. We support having a stakeholder-led agreed upon common digital vision for flexibility - which is able to change and iterate to fit the needs of the users.

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<sup>4</sup> As part of our feasibility assessment research into an open, standards-based approach for a Smart Meter Data Repository, sponsored by the Department for Business, Energy, and Industrial Strategy (BEIS) (now the Department of Energy Security and Net Zero) with the Data Communications Company.

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**4. What is your vision for how to accelerate the delivery of accessible, coordinated and trusted markets for distributed flexibility?**

As referenced in Question 3, we support an approach to the development and delivery of a digital marketplace for flexibility to be driven by user-needs and be stakeholder-led. We need to connect data, not collect it. Data must flow more easily and this means we need to clarify the rules of data sharing within a common open framework. Access to good quality, secure and shareable data access underpins the delivery of an accessible, coordinated, and trusted market for distributed flexibility.

Data is key because it allows for:

- Enabling network digitalisation to support efficient and cost-effective management of existing assets.
- Driving anticipatory network planning and build-out in a manner that is appropriately targeted and cost-effective
- Enabling smart assets and automation services to deliver flexibility, including at a granular level, and supporting market drivers of those services such as flexible pricing and time of use tariffs.
- Permitting more inclusion of different energy storage mechanisms in the grid, including smart charging and dispatch to support minimal energy wastage.

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

We strongly support the proposal to introduce a cohesive vision for distributed flexibility. An end vision must allow for the inevitable changes and innovations which will arise in the flexibility system. We recommend the vision should be able to be changed and iterated upon to ensure it continues to fit the needs of the users. In general, this process should occur in the open - including it being *open to anyone* without undue restriction and *conducted in the open* - including all processes are appropriately documented, published openly, and available for scrutiny.

More importantly, consistency in vision and decision making is vital for the decision makers in the organisations and companies which may be involved in the flexibility markets. Data sharing and data access is at the heart of the listed outcomes / key indicators. Having a cohesive, consistent vision with clear actions allows for stakeholders to incorporate data sharing and data access at the core of their decision making. The vision provides an opportunity to create the atmosphere for cultural change to occur, placing data sharing and access at the heart of decision making, and becoming business as usual.

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

We propose that common digital energy infrastructure should be in place as soon as it can be, given the time and resources allocated to co-create it as a sector. Appropriate common frameworks and standards enable long-term collaboration and allow for the allocation of appropriate operational capabilities to enable sector-wide digitalisation and data sharing.

We propose the development of this infrastructure is vital, and should be fully funded and begin development as soon as possible.

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

Common digital infrastructure should include standard approaches, procedures, and resources to evaluate and address open and shared data requests across networks. The outcomes should focus on enhancing the experience of data consumers by delivering data efficiently, effectively, and consistently.

We suggest that a vital development to ensure a “Medium” approach includes building upon the industry-tested foundations of the Open Energy trust framework<sup>5</sup>. This will be important to implement a clear and consistent approach to Shared data governance which can support an ecosystem of commercially, socially and environmentally valuable flexibility Shared data.

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

We believe the foundation blocks for a common digital energy infrastructure has been developed already. We support this infrastructure to be built out from existing infrastructure.

Icebreaker One’s model and associated projects - e.g. Open Energy - is to facilitate the search and discovery of open and shared data and the exchange of shared data through a *trust framework*<sup>6</sup>, without directly accessing the data ourselves. Icebreaker One adopts open working principles across all aspects of the organisation, including the open consultations, open sourcing its code, supporting open standards and the publishing of open data where relevant. We also publish a range of other open

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<sup>5</sup> <http://icebreakerone.org/ib1-trust-framework-for-data-sharing/>

<sup>6</sup> <https://icebreakerone.org/ib1-trust-framework-for-data-sharing/>

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resources including, but not limited to: user guides, technical, operational and policy documentation and research findings.

Secondly, our trust framework model supports the exchange of Shared data by our users (i.e. third parties). While we do not as standard hold access to the datasets shared by users of the trust framework, the processes of facilitating data exchange create operational data and metadata that is sensitive.

In collaboration with other work in the energy sector, including the Virtual Energy System, and Digital Spine work, the foundations for building this infrastructure exist, and should be reviewed and incorporated into further development.

As part of the Open Energy Phase 3 report<sup>7</sup> IB1 laid out core principles future development must consider. We propose common digital energy infrastructure should also include these principles:

1. A compulsion to participate

Data increases in value the more it is connected. Incentives must exist to mandate participation by the sector in open standards that enable interoperability and drive behaviours towards an open marketplace for data.

2. Design for interoperability

All solutions must be considered from a perspective of maximising cohesion and interoperability.

3. Continuous, iterative development

All digital services are iterative in nature. This landscape is rapidly changing, and will require rapid iteration and development as conditions change.

4. Engagement with users and industry

Collaboration is critical to the development of this work from both a technical perspective (solutions must meet user needs) and from a cultural perspective (solutions must be co-designed, adopted, used and iterated upon with market participants).

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<sup>7</sup> [Open Energy Phase 3 MEDA Report #PUBLIC #WEBSITE](#)