

**Flexibility Markets: development and  
implementation**

# **Data-sharing standards and protocols- UK Insights**

## **Factsheet**

Energy Systems Catapult  
ISGAN Annex 9

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## Data sharing standards and protocols, data transparency, and monitoring: UK Insights

This fact sheet presents insights into different attributes of data and its role as an enabler to *facilitate* interoperable flexibility markets. It draws on the work carried out in the UK by the Energy Data Taskforce (EDT)<sup>1</sup> and how its recommendations pertain to and align with flexibility service provisions and market developments in the UK. Insights from relevant energy stakeholders (from networks, industry/innovation and academia) have also been incorporated.

## Energy Data Taskforce: A Strategy for a Modern Digitalised Energy System

The EDT was commissioned by the UK Government, alongside the UK energy regulator Ofgem, to identify an integrated data and digital strategy required to modernise the UK energy system and drive it towards a net zero carbon future. The output of the EDT was five key recommendations around digital and data requirements to be met by utilities in the UK. These recommendations were then reviewed with reference to their relevance/importance for **flexibility provision**. The recommendations and associated comments/insights regarding flexibility are summarized below and in some cases examples have been provided.

### 1. A digitalized energy system is required for interoperable flexibility market operation

Current energy system data is not sufficient to facilitate adequate flexibility service provisions, as there is limited data sharing and visibility. This introduces barriers for timely implementation of regulation and pricing.

#### **New Data Needs:**

A proactive approach to meeting additional data needs to go taken to go beyond what currently exists. A variety of approaches are needed, from installation of new monitoring equipment to the use of analysis on existing data.

Example: The implementation of locational pricing cannot be carried out without locational specific constraint data.

#### **Continuous Improvement:**

There is a need for continuous improvement with regards to data quality, coverage and data management and handling skills.

Example: To establish timely (e.g., 5 minute) settlements at a local level, pricing needs to be at a sub-nodal level.

#### **Digitalisation Strategies:**

Organisations, including Government and the regulator, should be mandated to develop data strategies which identify the objectives, direction and actions required to develop new data, address data gaps and quality issues and to define the organisation's plan for digitalisation.

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<sup>1</sup> Energy Data Taskforce: A Strategy for a Modern Digitalised Energy System  
<https://es.catapult.org.uk/report/energy-data-taskforce-report/>

## 2. Value of Data will define the value of flexible markets

To make energy system data accessible, equitable and relevant, “openness” is key. This implies full transparency of data and associated meta data. The possibility for data holders to extract value is limited without sharing with flexibility service providers and community energy projects.

### **Data needs to be Discoverable, Searchable, Understandable:**

Avoid being a data monopoly. Data should be easy to find, it should be possible to identify similar datasets across organizations, and datasets should be accompanied by the information needed to understand their content. At present, there is no commercial drive for DNOs or ESOs to make data public

Example/issue: Data not being available as it is behind restricted access

### **Common Structures, Interfaces and Standards:**

Common structures, interfaces and standards would enable data across organisations to be aggregated and utilised more easily. There is a need to identify and actively disseminate/promote the use of the standards (especially internationally relevant standards) that can support this.

Example: Flexible Power Participant API

### **Secure and Resilient:**

Data openness must be carried out in a way to promote security and resilience. This should align with data best practice guidance that should be part of regulatory requirements<sup>2</sup>.

## 3. Ensure data is visible enough to wider stakeholders and innovators in the flexibility space

A common metadata standard across sectors will facilitate visibility and participation from the whole energy system in flexibility services. It would provide alignment with data standards, transparency, quality and information management. At present, flexibility innovators are not aware of what data sets exist. This could potentially result in a parallel system, which would bring additional integration challenges.

### **Catalogue of Energy System Datasets:**

It is crucial to make data not just available but visible for innovators to refer to, so they can find the correct data and its location

Example: Allowing shared access, and NDAs for commercially sensitive information

### **Standardised metadata of Energy System Datasets:**

Cross-sector standards are required for collecting data from different types of assets. The British Standards Institute (BSI) as the UK’s National Standards Body and the body providing input into CEN (European Committee for Standardization), CENELEC (European Committee

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<sup>2</sup> A common concern associates data openness with a lack of security. However, the EDT highlights that this is conflating different issues - a “presumed open” approach encourages the starting point to be “what *could* we make open?” and provides a framework for an informed conversation about the risks associated with data. Making data open does not imply less resilience (data security experts generally agree security is based on resilience, rather than obscurity). For more on this topic please see: <https://www.youtube.com/watch?v=5pQqjgAojlc>

for Electrotechnical Standardization), ISO (International Organization for Standardization) and IEC (International electrotechnical commission) standardization is leading work on this area.

The CIM standard across all energy vectors would be of use (or adapting CIM standard approaches to apply to vectors where such don't exist, or are not at the right level (e.g., gas, hydrogen...))

#### 4. Coordination of asset registration will enable more participation and engagements from stakeholders in the flexibility market

It is recommended to provide a single consolidated point of entry to enable asset owners, system operators, and regulatory bodies to register and allow assets to participate in a range of services like flexibility markets. This aligns with the discussion on protocol and monitoring of energy data. Entities responsible for operating the energy system at different levels currently lack a full overview of available assets, which makes it difficult to identify which assets best serve needs.

##### **User-friendly interface to increase registration compliance:**

Avoid registering assets at multiple platforms/places

Example: Flexible Power Participant API created and open to all DNOs to procure flexibility

##### **Improve the reliability of data:**

Through the development of the technical architecture for effective data management

##### **Improve the efficiency of data collection:**

Avoid burdening individual asset owners with the obligation to register their asset

Example: Battery storage units to be registered at different levels if they want to participate in other flexibility markets

#### 5. A unified Digital System Map will enhance visibility and support interoperability and monitoring of flexible assets

A unified digital energy system owned by a non-commercial entity would enable greater competition and drive investment in flexibility markets. This will enable protocols, transparency, standards and monitoring of data to be captured in a single platform or location. Moreover, it will eliminate the potential risk of reduced visibility of network and limited entry for innovators in the flexibility market.

##### **Increase the visibility of the Energy System infrastructure and assets:**

To identify the best place to utilize flexibility assets

##### **Enable optimisation of investment:**

To support innovators in the flexibility landscape to find the optimal investment decisions

##### **To inform the creation of new markets:**

An infrastructure for innovators to test their market models

Examples: Rethinking Electricity Market project; Energy Smart Appliances demonstrator projects. Also, the UK BEIS flexibility Innovation Consultation and follow-up from it.

## Concluding Remarks

The following conclusions can be drawn from the review conducted on the EDT recommendations and the inputs received from UK flexibility experts:

- Clear locational breakdown and consistency is needed with open flexibility data at national level supported by regionalised data
- Consistency in data publication is needed with set standards, e.g., the Oil and Gas Authority (OGA) making legally binding requirements on oil and gas companies to publish certain data sets to an open platform
- Data needs to be open and free for all with the necessary support from organizations who can manage and control access.