Journey towards the UK's first Energy data & digitalisation Strategy

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Decarbonisation increases complexity

Our energy system is **changing fundamentally** to meet our **2050 net zero target**, the direction of travel is towards a far more complex and decentralised energy system with:



Key takeaways:

- Today, data is crucial to safely managing the system, but the system is increasing in complexity and so we need more data in order to manage it.
- Currently, the majority of energy data lives in silos with regulated licensees.
- The success of the transition relies on consumer confidence to share their household energy data. High-quality energy data access is key to unlocking system and consumer benefits.

The potential of a digitalised energy sector

Realising the value of data – A digitalisation success story		
Supermarket W	Supermarket K	
Both install bar code scanners in 1980s		
Used data from bar codes to enable integrated logistics, frequent 'just- in-time' deliveries, large stores with low inventory forming an integrated, coherent and specialised design.	See the technology as a way of eliminating the cost of constantly changing the price stickers on items	
Outcome: Digitalisation enabled efficient distribution, innovations in logistics and careful network planning making the whole supply chain cheaper and more efficient.	Outcome: Didn't realise the value in data, was no longer the leader in lo-cost variety retailing then in 2002 filed for bankruptcy	

The value and usefulness of any data set is **increased exponentially** if you can link it and **combine it with other data sets**.

This is especially true for energy data because the **energy sector intersects with many other sectors**, such as transport, built environment and health.

Digitalisation of the energy sector will provide the necessary information (data access) for innovators, academics and local authorities to support the transition by creating new process and delivering **improved outcomes**.

Digitalisation will enable whole-system thinking by building an integrated network to enable safe decentralisation in a coordinated way.

How digitalised is the UK energy sector



Source: National Grid ESO digitalisation strategy

Challenges we have faced

- 1. Legacy systems and culture
- 2. Too much happening all at once
- 3. Huge interdependencies of change

Journey so far



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EDTF report

The **Energy Data Taskforce** identified that a staged approach needed to be taken to achieve a Modern, Digitalised Energy System in order to fill the data gaps and maximise data value:

- Data Visibility
- Infrastructure and Asset Visibility
- Operational Optimisation
- Open Markets
- Agile Regulation

A strategy for a Modern Digitalised Energy System

Energy Data Taskforce report Chaired by Laura Sandys



Department for Business, Energy & Industrial Strategy **ofgem** Innovate UK

Digitalisation of the Energy System Bigitalisation of the Energy System Government and Ofgem should direct the sector to adopt the principle of *Digitalisation of the Energy* System in the consumers' interest, using their range of existing legislative and regulatory measures as appropriate, in line with the supporting principles of New Data Needs' Continuous improvement and Digitalisation Structegies. Recommendation 2 Maximising the Value of Data Maximising the Value of Data Government and Ofgem should direct the sector to adopt the principle that Energy System Data should be *Prosumed Open*, using their range of existing legislative and regulatory measures as appropriate, supported by requirements that data is 'Discoverable, Searchable, Understandable, with common 'Structures, Interfaces and Standards' and is 'Secure and Resilient'. Page 24 → Visibility of Data A Data Catalogue should be established to provide visibility through standardised metadata of Energy System Datasets across Government, the regulator and industry. Government and Ofgem should mandate industry participation though regulatory and policy frameworks. Page 38 \rightarrow Coordination of Asset Registration An Asise Registration Strategy should be established to coordinate registration of energy assets, simplifying the experience for consumers through a user-friendy interface in order to increase registration compliance, improve the reliability of data and improve the efficiency of data collection. Recommendation 5 Visibility of Infrastructure and Assets A unified Digital System Map of the Energy System should be established to increase visibility of the Energy System infrastructure and assets, enable optimisation of investment and inform the creation of new markets.



	Energy Data Taskforce recommended that	What is happening (or is planned)
1 &2	The energy sector should digitalise and adopt the principle of presumed open	 Ofgem has asked all network companies to produce clear Digitalisation Strategies and Action Plans Ofgem is consulting on a Data Best Practice Guidance for energy sector
3	Energy Data should be discoverable, searchable andunderstandable	Developing an 'Energy Data Catalogue'
4	Information about energy assets that interact with our energysystem should be accurately gathered and available asneeded/appropriate	•Automatic asset registration discovery
5	Information about our energy infrastructure and its performance should be accurate and easily accessible	•ENA are working to create a prototype National Energy System Map

Demonstrating how value is delivered



What have we found useful

- Understand you data value chain
- Taking a collaborative and partnership approach with the sector
- Take a phased approach towards digitalisation
- Build an understanding of your use cases as a means for prioritising your actions



Spring 2021

Prototype of National Energy System Map

IUK Innovation investments complete

Summer 2021

Energy System and Digitalisation Task Force to complete

Winter 2021