



## THE POWER SECTOR GOES DIGITAL

**NEXT GENERATION DATA MANAGEMENT  
FOR ENERGY CONSUMERS**

---

# GOING DIGITAL

Advances in technologies, telecommunications and data analytics – digitalisation – are transforming the energy architecture and profoundly impacting business strategies as well as relations between consumers and utilities.

In the short term, consumers will gain more control over their energy use and benefit from additional services. Suppliers will optimise their business, tailor new offers and improve communication with their consumers. System operators will have new tools to manage their grids more efficiently and integrate an increasing amount of variable renewables in the system. In the long term, interaction between intelligent appliances, smart grids and home platforms – mediated by or on behalf of consumers – will usher in a new era with radically different consumption patterns centred on automation and remote controls.

The road to digitalisation, however, is a winding one. The roll-out of smart meters at European level is often taking place at a slower pace than expected because of varying cost-benefit analysis outcomes in European countries as well as data privacy and security concerns. Digital appliances and services may not yet be attractive enough for many consumers – not simple enough, too expensive, etc. For businesses, a lack of standardisation and interoperability may slow down the commercialisation of new appliances, and learning to process and convert reams of unstructured data into concrete actions takes time.

Markets and innovation will solve some of these issues. However, many will only be mastered if the regulatory framework is fit for purpose. At a time where boundaries between sectors are getting blurred and larger sets of data are becoming available, the regulatory framework has to ensure that all data – be it energy-related, telecom-related or from online platforms - is covered by consistent and appropriate regulation. It also needs to make sure that commercial players compete on equal terms to access data and provide services to consumers. Finally, regulation must ensure that regional monopolies such as DSOs are incentivised to invest in and use smarter and digital solutions and that privacy and security, including cybersecurity, are safeguarded.

Starting with a mapping of data in the energy sector, this document then proposes a series of key regulatory principles for data access and data exchange.

The full report “The power sector goes digital - Next generation data management for energy consumers” is available at <http://www.eurelectric.org/publications/>.

# UNDERSTANDING DATA

Discussing the opportunities and challenges at stake with digitalisation and data handling is difficult without clarifying the different types of data and how they are treated by regulation. In this document, we classify data into three main categories<sup>1</sup>. Smart meter, smart grid and smart market data all have their specific purpose and - as shown by the graph below - some data types can sit in different categories. In the digitalised energy system, energy players may have to share newly generated information to the extent that such data is needed to ensure system stability and develop new market offerings.

## SMART METER DATA

- Covers consumption data (including historical consumption), production data (prosumers) and master data (point of delivery identification data)
- Under the control of the consumer
- Gives close to real time information
- Energy players can process it to fulfill regulated obligations (supply, settlement, etc.) and/or - with consumer consent - develop (extra) commercial services



## SMART GRID DATA

- Covers all technical data (e.g. voltage, power quality, frequency) collected by sensors in the network, including smart meters
- Generally anonymised
- Needed for network monitoring, management and planning
- Is key for a flexibility market and to manage the TSO/DSO interface

## SMART MARKET DATA

- To create new services, market players enrich smart meter and smart grid data with data from other sources, e.g.
  - from commercial energy contracts (e.g. price information, customer name and address)
  - from smart appliances (e.g. devices such as smart thermostats)
  - from external sources (e.g. weather, demography)

<sup>1</sup> There are many other ways to categorise data (personal vs non-personal data, technical vs commercial data etc.)

# KEY REGULATORY PRINCIPLES FOR SMART METER DATA

There is no 'one size fits all' model applicable in all European countries for meter data management. This can be done in a centralised or decentralised way and by different parties, e.g. DSO, TSO or third party depending on the country. Decisions on the best approach to follow should be taken at national level by National Regulatory Authorities (NRAs). However, what is key is that the party (or parties) responsible for meter data management respects the following principles:



## PRIVACY & SECURITY

- ▶ Consumers' consent is required before their data is collected and used for non-regulated purposes (i.e. extra commercial services)
- ▶ Consumers should always be able to know who uses their data and for what purpose
- ▶ The storage of aggregated data must ensure quality and (cyber) security
- ▶ The right of data correction and deletion must be guaranteed



## NEUTRALITY

- ▶ The data management (DM) entity should not provide commercial services to final consumers
- ▶ If consumers decide to retrieve their data from a web platform linked to the data hub, the platform should not provide data with commercial objectives such as customer behaviour tips



## NON-DISCRIMINATION

- ▶ The DM entity should provide the same level of service to all its customers: If a service is available to one player, it should be potentially available to all players – with consumer consent



## COST-EFFICIENCY

- ▶ Regulatory decisions should be fully based on prior cost benefit analysis in the interest of consumers and society
- ▶ If the DM entity is a regulated company and sells data to market participants, it should not make any extra profits from this activity



## TRANSPARENCY

- ▶ Consumers should be informed by their supplier about their rights regarding access to and use of their data
- ▶ Consumers should be able to access their data in an easily understandable and standardised format
- ▶ The DM entity should make the rationale for its decisions explicit to the NRA
- ▶ The DM entity's costs and long-term investments must be made transparent and auditable by NRA



## HIGH QUALITY

- ▶ There are a number of quality components, including data accuracy and timeliness
- ▶ Setting up a tool for automatic monitoring and data consistency checking at every stage of the process (data extraction, data exchange etc.) might be appropriate

# KEY REGULATORY PRINCIPLES FOR SMART MARKET DATA

- › Energy players should compete on a level playing field with players from other sectors
- › Sectorial energy regulation should be aligned with horizontal regulation -> e.g. Green-button initiative VS EU data protection regulation
- › The same regulatory principles should apply to all personal data collected from consumers
- › There would be merit in enhancing cooperation between regulatory authorities from different sectors to break down silos, enhance competition and innovation and make sure that governance processes for data protection and access are harmonised




## KEY REGULATORY PRINCIPLES FOR SMART GRID DATA

- › TSOs and DSOs should have the necessary data (timeliness, granularity, quality) to check and assess e.g. whether some flexibility bids, when activated, could give rise to grid issues
- › Market players need to have access to some smart grid data, e.g. BRPs need to be informed by DSOs/TSOs about e.g. activation of flexibility within their perimeters to avoid imbalance situations
- › NRAs should ensure that smart grid data exchange between system operators and market players is enhanced in all relevant timeframes (network planning, operational planning and scheduling, day ahead, intraday etc.)
- › Mutual processes, data formats and communication protocols for data exchange should be agreed upon at EU level when applicable and efficient. Where this is not the case, Member States should strive for standardisation at national level as a minimum



## Union of the Electricity Industry - EURELECTRIC

Boulevard de l'Impératrice, 66 boîte 2  
1000 Brussels  
Belgium

T.: + 32 (0)2 515 10 00 - F.: + 32 (0)2 515 10 10  
website: [www.eurelectric.org](http://www.eurelectric.org)  
 [twitter.com/EURELECTRIC](https://twitter.com/EURELECTRIC)

EU Transparency Register number: 4271427696-87