FSR Regulatory Policy Workshop Series 2025-2026

EMPOWERING ENERGY CONSUMERS AND PROMOTING SYSTEM FLEXIBILITY IN THE AGE OF ARTIFICIAL INTELLIGENCE

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Villa La Fonte, Via delle Fontanelle 18 - San Domenico di Fiesole (Fiesole, Florence)

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To Join online as auditor only:

https://eui-eu.zoom.us/j/95310391184?pwd=8i75M4jb1nXo2QRa6BmE7eUohmayTd.1

Meeting ID: 953 1039 1184
Passcode: 761883

Introduction

The Internal Energy Market (IEM) ultimately aims at providing greater choice and better prices to energy consumers, through a sustainable energy system, and at promoting security of supply. Empowering energy consumers, so that they take full advantage of the opportunities provided by the IEM, has proven to be challenging. For example, the number of residential customers switching suppliers has remained relatively low for many years after such an opportunity was introduced[1]. A low supplier switching rate may however be explained also by a highly competitive environment, when all suppliers offer similar conditions. However, this was not the case in many Member States in the EU, where inertia costed consumers significant amounts of money in the form of foregone savings[2].

Over the years, while switching rates increased, consumers have often been switching towards higher prices, also due to some aggressive and misleading commercial practices[3].

An increasing penetration of variable renewable resources requires the energy system to become more flexible. Such a flexibility could be provided by some conventional generation capacity (such as CCGTs), but also by energy storage and demand response.

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In particular, the potential for demand response in the EU is very significant[4], but it is developing slowly, due to a number of barriers, including: lack of a proper legal framework to allow distributed energy resources to access electricity markets and provide services to system operators; unavailability or lack of incentives (e.g., some price signal or reward) to provide flexibility; restrictive requirements to providing balancing and congestion management services or to participating in capacity mechanisms and interruptible schemes; limited competitive pressure in the retail market; and public interventions in the retail electricity prices[5].

The increased penetration of renewable-based generation and, in prospect, demand response make the energy system more complex, with the involvement of a larger number of decentralised resources. This creates additional challenges, including a new role for distribution grids and their operators.

Digitalisation can assist in addressing such challenges, as well as in providing new opportunities for consumers to play a more active role in the energy system. The advances in digitalisation and Artificial Intelligence (AI) are moving the frontier both in terms of system operation and in respect to innovative energy-related services available to consumers.

For the full potentials of these advances to be reaped across the whole IEM, energy data exchange across the EU needs to be enhanced, with appropriate safeguards and governance.

Moreover, the current rules on consumer rights and protection need to be assessed to check whether they are fit for a future where consumers will have the opportunity to play a more active role, but would also be offered more complex services which, while delivering additional benefits, might also pose higher risks of unfair or misleading commercial practices.

Against this background, this Workshop will focus on two relevant aspects associated to the digitalisation of the energy sector and the potential role of AI:

- The need and the best way to enhance energy data exchange across the EU and to develop AI models for the energy sector. In this context, the 2020 European Strategy for Data[6] set the political direction for data spaces, including in the energy sector. The EU Digitalisation of Energy Action Plan[7] operationalises the energy data space through appropriate governance and funding steps. More recently the 2023 EU Data Governance Act (DGA)[8] and 2024 EU Data Act[9] create a single, secure and competitive EU market for data. The DGA aims at increasing trust in voluntary data sharing, while the Data Act clarifies the rights over data access and usage, particularly for the Internet of Things (IoT). The DGA and the Data Act, as well as the acts in the Clean Energy for All Europeans Package, provide the legal basis for enhancing energy data exchange across the EU.
- The need to assess to what extent the current horizontal and sectoral consumer protection legislation is fit for the future and to improve it if necessary.

These are only two of the many aspects which will need to be reviewed to support the energy transition and energy-sector digitalisation. They will be discussed in this Workshop on the basis of some recent and current work undertaken by the Florence School of Regulation for the Directorate-General for Energy of the European Commission:

- European Commission, A Study on the Relevance of Consumer Rights and Protections in the Context of Innovative Energy Related Services, authored by Lucila de Almeida, Alberto Pototschnig, Alessandra Porcari and Nicolò Rossetto, Florence School of Regulation, October 2025, published alongside tha EU Citizens Energy Package[10];
- Current work on the regulatory framework for energy data exchange across the EU.

Correspondingly, the Workshop will be structured in an opening part followed by three sessions:

- Session I, in the morning, will discuss the value of enhancing energy data exchange across the EU for improving the planning and operation of the energy system, for facilitating the development of innovative energy-related services for consumers and for supporting the development of AI models for the energy

sector, identifying the main uses of the data and models, but also highlighting any challenge in the process;
- Session II, also in the morning, will focus on the governance of energy data exchange across the EU, exploring different frameworks and evaluating merits and challenges of each of them.
- Session III, in the afternoon, will discuss the consumer protection framework within which consumers, and in particular residential customers, will be able to be engaged in the future energy sector.

[1] See for example, ACER/CEER, Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2015, Retail Markets, November 2016, Figure 12, page 21, showing that in 2015, in Member States which had liberalised their electricity retail market by less than 5 years, there was no appreciable switching. Member States with a longer history of liberalisation, between 5 and 10 years and more than 10 years, showed on average switching rates in the order 5% and 10%, respectively. In the case of the gas retail market, switching appeared to grow somewhat faster, the EU, where inertia costed consumers significant amounts of money in the form of foregone savings.

[2] *Ibid.*, Figure 19, page 36. While the switching rate tend to increase with the potential savings which consumers could achieve by switching suppliers, this relationship did not always hold, as, for example, in Germany in 2015, where switching would have delivered savings in the order of € 300-400 /year and yet the switching rates remained well below 10% both in electricity and gas. The latest – 2024 – figures show German electricity consumers switching suppliers at a 14% annual rate (https://www.bundesnetzagentur.de/SharedDocs/Pressemitteilungen/EN/2025/20251126_Monitoringbericht.html?utm_source=chatgpt.com)..

[3] For example, in Spain, a report from FACUA (https://facua.org/en/noticias/the-free-electricity-market-offers-inflate-the-average-users-monthly-bill-by-up-to-16-euros/?srsltid=AfmBOorpGv5rUM7LoQUyAA2aCN1fXb1_KLG5WJ8uZGmQ1poiCog_naCw.), a consumer organisation, published in April 2021, therefore before the onset of the 2021-2023 energy crisis, suggested that households moving from the regulated tariff (still available to them) to the free-market often ended up with higher bills. FACUA claimed that misleading promotions were partly responsible for consumers switching for more expensive offers. The retail monitor from the CNMC, the Spanish regulator, also tracked heavy switching toward the free market, where this risk arises, and notes limited consumer understanding of tariff differences. Moreover, an analysis carried out by the Italian energy regulator (ARERA) for the period July – September 2021 (ARERA, *Rapporto 37/2022/I/COM, Monitoraggio sull'evoluzione dei mercati di vendita al dettaglio dell'energia elettrica e del gas, Rapporto di aggiornamento*) highlighted that more than 60% of new contracts signed in the free market by electricity consumers were more onerous when compared with the terms of the regulated supply contracts, still available during that period. The percentage was even higher – close to 90% – during the same period of the previous year.

4] A 2022 report by smartEn, 'Demand-side flexibility: quantification of benefits in the EU' (https://smarten.eu/wp-content/uploads/2022/10/SmartEN-DSF-benefits-2030-Report_DIGITAL-1.pdf) already estimated that, by 2030, demand response could contribute a total of 164 GW upward flexible power (increase of generation or decrease of demand) and 130 GW of downward flexible power (decrease of generation or increase of demand).

[5] See, for example, ACER, Demand response and other distributed energy resources: what barriers are holding them back?, 2023 Market Monitoring Report, 19 December 2023, available at: https://www.acer.europa.eu/sites/default/files/documents/Publications/ACER_MMR_2023_Barriers_to_demand_response.pdf.

[6] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, European strategy for data, Brussels, 19.2.2020, COM(2020) 66 final.

[7] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Digitalising the energy system – EU action plan, Strasbourg, 18.10.2022, COM(2022) 552 final.

[8] Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance.

[9] Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data.

[10] Communication from the Commission to the European Parliament and the Council on the Citizens Energy Package, Strasbourg, 10.3.2026, COM(2026) 115 final.

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Draft Programme

09.00 – 09.10 Welcome and introductory remarks
Leonardo Meeus | Florence School of Regulation
Alberto Pototschnig | Florence School of Regulation

09.10 – 09.30 Keynote addresses: the EU energy sector, digitalisation and AI: governance challenges and consumer protection

Rosalinde van der Vlies | Director, Just Transition, Consumers, Efficiency and Innovation, Directorate-General for Energy, European Commission

SESSION I – – ENHANCING ENERGY DATA EXCHANGE ACROSS THE EU: SCOPE, VALUE AND CHALLENGES

Moderator: **Max Munchmeyer** | Florence School of Regulation

09.30 - 09.40 Setting the scene
Nicolò Rossetto | Florence School of Regulation

09.40 - 10.25 How to make the energy data exchange work
Kjell Arne Barmsnes | Deputy Secretary General ENTSO-E
Hubert Dupin | Coordinator for European Technical Matters, Enedis (representing E-DSO)
Anna Maggioni | Officer, Retail Markets, ARERA

10.25 - 10.50 Contributions from FSR Donors and general discussion

10.50 - 11.10 *Coffee break*

SESSION II - GOVERNANCE OPTIONS FOR ENHANCED ENERGY DATA EXCHANGE ACROSS THE EU

Moderator: **Alberto Pototschnig** | Florence School of Regulation

11.10 - 11.25 Setting the Scene:
Mark van Stiphout | Deputy Head of Unit, Research, Innovation, Competitiveness and Digitalisation, Directorate-General for Energy, European Commission

11.25 - 11.55 The energy data exchange governance: stability vs flexibility
Ellen Beckstedde | Florence School of Regulation
Anna Maggioni | Officer, Retail Markets, ARERA

11.55 - 12.25 Contributions from FSR Donors and general discussion

12.25 - 13.20 *Lunch break*

SESSION III – CONSUMER PROTECTION IN THE ERA OF DIGITALISATION, AI AND ENERGY-RELATED INNOVATIVE SERVICES

Moderator: **Ilaria Conti**| Florence School of Regulation

13.20 - 13.30 Setting the scene
Lucila de Almeida| Florence School of Regulation

13.30 - 14.15 Protecting and empowering consumers
Massimo Serpieri | Consumer Team Leader, Consumers & Just Transition Unit, DG ENER, EU Commission
Sophia Pena Pereira | Energy Policy Officer, BEUC
Nic Steinwand | Policy Advisor, Eurelectric

14.15 - 14.40 Contributions from FSR Donors and general discussion

14.40 - 15.00 Concluding remarks
Leonardo Meeus | Florence School of Regulation
Alberto Pototschnig | Florence School of Regulation