



Roadmap on digitalisation and AI in the energy sector

Position Paper

As the EU intensifies its efforts to accelerate the digital and green transitions, the energy sector stands at the forefront of this transformation. The success of the roadmap hinges on the availability of high-quality accessible data and the infrastructure to support it.

To this end, ESMIG recommends the following:

- **Making smart meter deployment a cornerstone of the energy sector's AI and digitalisation roadmap**

The success of the AI and digitalisation roadmap in the energy sector depends on a robust data infrastructure. Despite smart meter penetration marking steady progress to 63% in the EU27+3 by the end of 2024, the foundational infrastructure for data-driven innovation in the energy sector remains incomplete.¹ The slow and incomplete rollout of smart meters results in a lack of information that is needed for AI applications that need smart meter data. Moreover, advancements have given rise to next generation smart meters featuring (a) high-resolution meter data, (b) grid-edge processing capabilities as a cornerstone of a smart grid, and (c) advanced cyber

¹ Berg Insight. Smart electricity meter penetration rate in Europe reached 63 percent at the end of 2024. Berg Insight, March 2025. Available at: <https://www.berginsight.com/smart-electricity-meter-penetration-rate-in-europe-reached-63-percent-at-the-end-of-2024>

security to strengthen resilience. The roadmap should, therefore, incorporate the acceleration of next generation smart meter deployment, complemented by harmonised EU-wide standards.

- **Establishing common standards to enable a flexible and scalable European energy data space**

The creation of a European energy data space is a key enabler for digitalisation. However, its creation should proceed in gradual steps, from national to EU level, given the varying data availability, granularity, and quality across Member States. Common standards for access, interoperability, and secure exchange are essential for consistent progress across the EU. In addition, growing interest in AI at the “grid edge” also highlights the need for a flexible decentralised data space that reduces reliance on central systems and eases pressure on networks and servers.

- **Strengthening support and incentives for DSOs**

As data users are often not the same entities responsible for providing it, Distribution System Operators (DSOs) need to be adequately incentivised and supported to invest in the infrastructure required to deliver timely high-quality data and smart grid capabilities. Additionally, a clear understanding of the costs and benefits across the value chain, alongside enhanced know-how, is essential to ensure effective collaboration and maximise the value of data-driven digitalisation and AI applications.

- **Balancing privacy protection and innovation through harmonised guidelines**

Europe’s strict privacy rules are vital for protecting citizens. However, they can also impede innovation in data-driven sectors like energy digitalisation and AI. Such stringent rules may limit data use flexibility, leading to Europe lagging behind other regions. To stay ahead in energy digitalisation and AI while respecting strong privacy rules, clear and harmonised guidelines are needed to enable compliant and effective data use that protects privacy without hindering innovation.



About ESMIG

ESMIG is the European voice of the providers of smart energy solutions. Our members provide products, information technology and services for multi-commodity metering, display and management of energy consumption and production at consumer premises.

Our activities are focused on systems for smart metering, consumer energy management and safe and secure data transfer.

We work closely with EU policy makers and other EU associations to make Europe's energy and water systems cleaner, reliable, more efficient and the European consumer informed, empowered and engaged.