

MAKING EUROPE'S ENERGY TRANSITION A REALITY WITH THE HELP OF SMART TECHNOLOGIES

OUR KEY PRIORITIES FOR
A CONSUMER FOCUSED ENERGY SYSTEM



THE EUROPEAN SMART ENERGY SOLUTION PROVIDERS

INTRO

The European Energy Union strategy aims to guarantee accessible, affordable, secure, competitive and sustainable energy for all Europeans.

To achieve these objectives and meet our carbon targets, the European energy market must undergo fundamental changes. We need to rapidly move from a market driven by fossil fuels designed around big central controllable generation units to a 'demand-driven' energy system, integrating renewables and more local generation and storage solutions where customers are at the heart of the system.

The timing of electricity management, related to when and where electricity is needed on the grid, will matter far more in coming decades due to an increasing reliance on **distributed energy resources¹** and the integration of large and small renewables. Moreover, consumers will have the right tools to increase their consumption during supply peaks and reduce it when the system is on a low supply or when there is high demand. The number of 'prosumers' – customers who can produce, store and trade energy -

will grow, along with the flexibility of consumption increasing. However, this will only be possible if customers have access to systems that work for them. It is crucial to prevent unplanned downtime that could impact the flexibility and energy supply.

Smart metering systems² and access to real time energy data are both indispensable to empower the consumer and to ensure a good management of the whole system.



WHY SMART TECHNOLOGIES ARE CRUCIAL TO ACHIEVE THE ENERGY TRANSITION

For a fundamental change to happen in Europe's energy system, the policies need to be formulated with the consumer in mind. The system needs to be designed for consumers to receive accurate and timely information, to enable them to acknowledge and change their consumption patterns, to encourage them to engage in energy generation, **demand response**³, and to protect their rights and privacy.

Smart metering represents the greatest tool for consumer empowerment to reach the energy industry in the last 100 years. For the first time, consumers will be able to see exactly how much energy they

consume, when they consume it and how much it costs. The ability to monitor and control consumption is the pre-requisite for market-based pricing and network optimisation.

Smart metering benefits such as savings on energy bills and reduced meter reading costs are a welcome economic relief, but in the long run an invaluable benefit will be the transition of our outdated energy system to a smart, demand driven, flexible and greener one.

The successful deployment of this technology across the EU is the first step in achieving this aim. The next steps require additional services and technologies that need to be available and to work with the smart meter data.



¹ A **distributed energy resource** (DER) is a small-scale unit of power generation that operates locally and is connected to a larger power grid at the distribution level. For example, DERs include solar panels and electric vehicles.

² A **smart metering system** is a system that includes one or more smart meters and collects, validates and distributes metering data.

³ **Demand response** provides an opportunity for consumers to play a significant role in the operation of the electric grid by reducing or shifting their electricity usage during peak periods in response to time-based rates or other forms of financial incentives.

PRIORITIES

How can you help in making the new energy market a reality?

Achieving the full benefits of smart meters means considering the associated impact of communications technologies, flexible demand, data, security, interoperability and consumer engagement. Therefore, we need your support to:

- Create the right market conditions
- Place the consumer at the heart of the energy system
- Guard the privacy and security of energy data
- Implement the existing regulatory framework

1

Create the right market conditions

Regulatory barriers, a lack of practical experiences and slow political processes still hinder the transition towards a digitalised, decentralised, consumer focused energy system.

It is important to have a clear understanding of the roles, responsibilities, processes and infrastructure that are needed in the new energy market structure.

WE NEED:

- A regulatory framework that encourages rather than hinders the trend towards a multi-directional, dynamic, decentralised and open energy system
- **Energy settlement**⁴ to take place between market operators, for residential and business customers, on the basis of interval measured energy profiles (not synthetic)
- Solutions for consumers and utilities that work with near real-time energy consumption data
- Non-discriminatory access to the market for new players: regulated companies should offer non-discriminatory access to the system and consumption data to new players with consumer consent (independent aggregators and other energy service companies)
- Interoperable systems for metering and energy management that can be used for multiple commodities such as electricity, gas, water and heat

⁴ **Energy settlement** is the process of reconciling the difference between the energy purchased by energy suppliers from generators / producers and the energy sold to the customers.





2 Place the consumer at the heart of the energy system

An intelligent metering system is a prerequisite to the active involvement of consumers in the energy market.

WE NEED:

- Consumer access to modern intelligent products and services that assist them in making the most economical choices regarding the energy taken from or fed into the system
- Free, direct, real time and non-discriminatory access to metering data for consumers
- Dynamic tariffs so that consumers can reduce cost by shifting demand to periods of low energy prices and offer self-generated energy to the system in periods of high energy prices
- Consumers' ability to control their consumption/ generation data and the right to voluntarily and easily allow third parties of their choice to manage their data
- Introduce **Time of Use Tariffs**⁵ as the default tariff option where consumers would have the option to switch away from them
- Appropriate rewards for consumers, in terms of savings, comfort, etc. to ensure that consumers get the benefits
- Consumers' market participation based on simple, easy-to-use technology and processes
- Consumers who are aware of the benefits of introducing such products and services and their rights in using them

⁵ **Time of use tariffs** are designed to incentivise customers to use more energy at off-peak times in order to balance demand. These tariffs charge cheaper rates at certain times of night or day, when demand is at its lowest, and higher rates at popular times.



3 Guard the privacy and security of energy data

Security and privacy will become even more critical parts of the energy industries agenda. The importance of this topic should not be underestimated in the context of a growing decentralised energy environment. Until now, attack risks have been concentrated and still limited as the operational systems are isolated. The set-up of digital flows connecting assets, organisations and people, will require a fully secured value chain.

The protection of consumers' privacy and the protection from cybersecurity threats has to be an integral part of smart energy management infrastructures.

WE NEED:

- The application of the “security by design” principle when designing new products and services.
- European guidelines and references for:
 - ✓ Security measures and techniques to secure the Information and Communication Technology infrastructure (ICT) for metering and energy management
 - ✓ Certification of components / products in the system
 - ✓ Measures that allow the prevention and detection of, and recovery from, cyber attacks





4 Implement the existing regulatory framework

The **Clean Energy Package**⁶ is an important step on the way to achieving the energy transition. This legislation contains crucial provisions to create the right markets conditions, to involve the consumers and ensure privacy and security of energy data.

⁶ The **Clean energy for all Europeans package** consists of eight legislative acts aiming at facilitating the transition away from fossil fuels towards cleaner energy and delivering on the EU's Paris Agreement commitments for reducing greenhouse gas emissions.

WE NEED:

- A timely and effective implementation of the Clean Energy Package
- Appropriate secondary legislation developed as delegated and implementing acts to ensure an efficient and coherent application of the legislation



ABOUT

ESMIG was created to advance the uptake of smart meters in Europe, by ensuring the appropriate legislation and framework are in place to permit their deployment and maximise benefits for consumers, the grid and society as a whole.

In order to realise the full benefits of smart meters, our activities have evolved and now focus on systems for smart metering, consumer energy management and safe and secure data transfer. Our members provide products, information technology and services for multi-commodity metering, display and management of energy consumption and production at consumer premises. ESMIG drives the timely introduction of efficient and scalable consumer-friendly products and services fundamental to the participation of end-users in the smart energy system of Europe's future.

We work closely with EU policy makers to make Europe's energy system cleaner, reliable, more efficient and to keep the European consumers informed, empowered and engaged.

We have worked intensively in this capacity with the European Commission and Member States to advance smart meter roll-out

and to understand what needs to be done when the roll-out is complete, if we are to realise the expected benefits. Simultaneously, we have worked with our members to find innovative solutions to address the challenges of interoperability, security, consumer tools and data management. In addition to our continued efforts in supporting the roll-out of smart meters, we are focusing on those technologies and regulations that allow consumers to actively participate in the energy markets.

ESMIG'S FOCUS:

- Finalising the smart meter roll-outs in Europe with a focus on achieving tangible benefits for consumers and society
- Advocating for a flexible energy system
- Introducing new technologies that encourage and support consumer participation
- Advocating for security and interoperability 'by design'



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