

Eurelectric response: EC call for evidence EU energy security framework

Eurelectric position paper

October 2025

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

Dépôt légal: D/2025/12.105/52

Electrification & Sustainability Committee
Generation & Environment Committee
Markets & Investments Committee
Distribution & Market Facilitation Committee
Customers & Retail Services Committee

Contact:
Alessandro Zappi, Advisor - Markets & Customers -
azappi@eurelectric.org

Building a Secure, Flexible, and Resilient Electricity System

Europe's energy system is experiencing a profound transformation. **Rising electrification, the increasing integration of renewable energy and worsening geopolitical instability are reshaping the concept of energy security.** To remain reliable and resilient, the European system must shift from a traditional focus on fuel supply towards a more comprehensive approach that includes security of electricity supply, infrastructure resilience, and system flexibility.

Adapting to New Realities

The current context is defined by three major emerging realities:

- **Political and geopolitical changes**, with new dependencies and growing exposure to hybrid threats, such as cyberattacks and supply chain disruptions.
- **Increasing electrification**, which makes Europe's economy depend more than ever on a reliable power system.
- **Technological transition**, marked by the rapid deployment of renewable energy and the gradual decline of conventional dispatchable generation.

These trends require a modernisation of the concept of security, which must distinguish between **external factors** affecting the energy system and **internal factors** that the electricity sector can influence. The objective is to build a system that can anticipate, withstand, and recover from shocks while also supporting decarbonisation and competitiveness.

A System Built on Three Pillars

Creating a secure and resilient electricity supply depends on progress in three main dimensions:

1. **System Planning:** security starts with coordinated and forward-looking planning. European and national planning tools must be aligned more efficiently and expanded to include assessments of flexibility, climate adaptation, and interdependencies between electricity, gas, and digital infrastructures.
2. **Investment mechanisms:** market signals should guide new investments in flexible capacity. When markets are not sufficient, extra tools like capacity mechanisms (including the remuneration for flexibility) or stand-alone flexibility supporting schemes can help make sure the system has what it needs. These should stay open to all technologies, fair, and market-based.
3. **Markets and operations:** efficient short-term and forward markets are essential to attract the needed investments. Strengthening demand-side participation and removing still present regulatory barriers would increase flexibility and improve efficiency.

Delivering a Secure, Clean and Affordable System

By combining these measures such as the long-term strategy for integrated planning, the investment support, and the market optimisation, Europe can build an energy system that proves to be:

- **Clean**, through continued support for decarbonisation and renewable integration
- **Affordable**, by reducing exposure to volatile fossil fuel imports
- **Secure**, thanks to stronger infrastructure, diversified supply chains, and increased system flexibility

Strengthening Energy System: Key Priorities and Recommendations

Eurelectric identifies several key areas essential to strengthening Europe's energy security and system resilience. Recent challenges in the European power system highlight the pressing need to

ensure governance, planning, flexibility, adequacy, and grid investment frameworks are fit for purpose in the decarbonised electricity system the EU is building. While the Commission has outlined many of the right building blocks, additional measures are required to address operational realities and growing risks.

Governance and transparency

Clear governance structures and transparent information flows are essential before, during, and after system disruptions. The separation between operational responsibility and investigative authority must be guaranteed to avoid conflicts of interest and ensure impartiality. **Open communication and cross-sector coordination** can significantly improve the effectiveness of crisis responses and build trust across stakeholders.

Forward-looking planning

Europe's planning frameworks must evolve from reactive assessments to proactive, with better coordination and a clearer view of long-term investment needs. This means making sure flexibility, cross-border coordination, and risk management are part of planning at every level, from the EU to national systems, securing the system is ready for higher electrification.

Flexibility and system services

A resilient system based increasingly on variable renewables requires robust flexibility on both supply and demand sides. Clear investment signals and appropriate remuneration for crucial services such as inertia, voltage control, and black start capabilities are vital to ensure stability.

Realistic adequacy assessments

Adequacy must reflect real-world operational conditions, including interconnection availability and regional constraints. Current models often overlook these practical limitations. A more pragmatic and harmonised adequacy framework is needed to anticipate capacity risks and allow timely national action where supply security could be endangered. Yet, adequacy alone is not enough: comprehensive supply security requires a resilient and diversified energy system. Indeed, energy security goes beyond electricity generation to the full supply chain, including raw materials, critical technologies, and energy commodities. Eurelectric highlights the importance of **diversify suppliers and focus on domestic production. Investments must target bottlenecks and critical sectors** to ensure system reliability, while also balancing economic considerations

Accelerated grid investments

Modernising and expanding Europe's grids is indispensable for the success of the energy transition. **Investment must be forward-looking**, enabling the **integration of decentralised renewables, supporting electrification, and preventing network bottlenecks.** Addressing gaps through coordinated planning and fair remuneration mechanisms is crucial to ensure a resilient and interconnected European power system.

Workforce and Skills

A major challenge for the sector is the **shortage of qualified personnel across both established and emerging energy technologies.** Knowledge transfer from retiring staff is insufficient, and educational and vocational programs are not keeping pace with the rapid evolution of the sector. To maintain operational continuity and ensure timely deployment of new generation, storage, and flexible assets, **Eurelectric calls for targeted measures to attract and train workers across the electricity sector.**

Regulatory and Investment Frameworks

Clear responsibilities and decision-making duties between Member States and EU institutions are essential for efficient implementation of capacity mechanisms and other market-based tools that

support flexibility deployment where markets alone do not provide sufficient incentives. **Faster permitting, targeted investment incentives, and predictable funding frameworks** are needed to ensure timely deployment of generation, storage, and demand-side solutions. Market-based approaches should remain the main tool, with regulatory interventions which must be avoided to encourage both public and private investments in a decarbonised and flexible energy system.

Simplification

Strengthening the internal energy market through better interconnections, coordination of crisis response, and aligned definitions of electricity crises is a no-regret options which would ensure a more competitive, reliable, and resilient European system. Member States should be supported to act in solidarity during emergencies, while EU-wide frameworks provide clarity and coordination, allowing for swift and effective responses.

Immediate Priorities

While the above-mentioned long-term reforms are essential, a series of immediate actions can already be adopted to strengthen the resilience of Europe's electricity system:

- **Implementing and enforcing existing legislation on resilience (Critical Energy Entities Resilience Directive) and cybersecurity (Network and Information Systems 2, Network Code on Cybersecurity)** to improve coordination and reaction to threats.
- **Enhancing cooperation among energy operators, defence, telecommunications, and technology sectors** to improve preparedness.
- **Creating incentives (such as a Resilience Incentive Mechanism) for energy companies to strengthen their infrastructure**, develop smarter grids, and improve how to recover from disruptions.
- **Maximise the value of existing planning exercises** (e.g., NECPs, EERA, TYNDP, NDPs) by considering the system across different time horizons and energy vectors while including climate adaptation measures and grid resilience.
- **Accelerating flexibility assessments and developing better-suited investment mechanisms** where gaps are identified and tackled.
- **Supporting anticipatory network investments and innovative technologies** to prevent bottlenecks and improve strength of the system.
- **Protecting our infrastructure** by establishing emergency management teams that closely coordinate with national agencies responsible for disaster response.

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



Union of the Electricity Industry - Eurelectric aisbl
Boulevard de l'Impératrice, 66 – bte 2 - 1000 Brussels, Belgium
Tel: + 32 2 515 10 00 - VAT: BE 0462 679 112 • www.eurelectric.org
EU Transparency Register number: [4271427696-87](https://ec.europa.eu/transparency/regexpert/?s=details&id=4271427696-87)