Recommendations for the Revision of the Energy Security Framework

ELECTRIFICATION ALLIANCE

Executive summary

In the words of IEA Director Fatih Birol, "When we look at energy security, [...] I see one future for Europe, electrify everything, as much as you can, transportation, industry and so on."[1] As the EU phases out fossil oil and gas and moves toward climate neutrality, electrification, powered by domestically produced clean energy, offers the most effective path to strengthen energy security. Direct electrification of our energy systems insulates consumers from fossil fuel price volatility, prepares for potential disruptions of the energy system, and reduces import dependence - imported energy still supplied 57% of EU primary energy needs in 2024[2].

The urgency of strengthening Europe's energy security has been reinforced by an increasingly volatile geopolitical environment. Russia's war against Ukraine and renewed instability in the Middle East have highlighted the vulnerabilities associated with Europe's dependence on imported fossil fuels and the exposure of global energy markets to geopolitical shocks. In this context, accelerating the transition toward domestically produced clean electricity is not only a climate imperative but also a strategic priority for Europe's resilience and sovereignty.

This paper sets out the Electrification Alliance's recommendations for the revision of the EU Energy Security Framework. It looks into the role of electricity in providing energy security and identifies priority areas where reforms of the current framework are needed.

1. **Clean electrification of heating, transport, and industry is Europe's most scalable and resource and cost-effective route to energy independence**. Technologies such as heat pumps, battery electric vehicles, solar, and wind are already delivering significant reductions in fossil fuels demand and import exposure.
2. **Making electricity more affordable** is essential to unlock direct electrification at scale - reducing taxes and levies on electricity, phasing out fossil fuel subsidies against clear timelines, and supporting electrification technologies will strengthen energy security and improve the competitiveness of clean energy solutions.
3. **Flexibility, including demand response, is emerging as a cornerstone of a secure, renewables-based power system, yet its potential remains largely untapped.** Modernised ancillary service markets and improved market access for storage are essential to fully harness flexibility and to ensure that smart electrification strengthens Europe's energy system.
4. Finally, **accelerated development of electricity grids and cyber-secure digitalisation is necessary to ensure electricity can be transported and distributed across Europe**. The new Energy Security framework needs to prioritise timely electricity grid development and investment.

This paper does not represent the views of Eurelectric, see a more detailed Eurelectric position on energy security here

[1] Fatih Birol during the World Economic Forum 2026, accessible here.
[2] Eurostat, "Energy in Europe: imports dependency", accessible here.

Recommendations

I. Clean, direct and smart electrification reduces the EU's dependence on imported fossil fuels

As the European Commission's Fitness check of the EU Energy Security Framework rightly points out, the "ongoing energy transition to a decarbonised and more electrified energy system will improve security of supply by reducing the need to import fossil fuels from third countries."[3]

Energy security needs to be redefined to ensure energy independence and the highest protection against supply shocks and external disruptions. Efficiency not only on the demand side but at the system level should be prioritised to reduce waste and address scarcity. Direct electrification remains the most efficient and scalable pathway for decarbonising Europe's energy system while enhancing security of supply. It could halve import dependency by 2040[4], reducing it only to reliable partners[5], substitute imports for homegrown clean electricity production and reduce reliance on fossil gas and oil..

Examples

Heat pumps illustrate well the potential of electrification to reduce reliance on fossil fuels. They are up to five times more efficient than conventional fossil-fuel boilers, and their wider deployment could substantially reduce Europe's exposure to imported fossil fuels. Combined with improved building efficiency, heat pump uptake could avoid €60 billion in fossil fuel import costs by 2030[6]. By the end of 2024, approximately 26 million heat pumps were already installed across Europe, displacing an estimated 24 billion cubic metres (bcm) of fossil gas in 2024[7]. Replacing fossil-fuel boilers in just 7% of homes would cut a further 13 bcm: roughly equivalent to the EU's former annual imports of Russian gas for residential heating[8].

Transport electrification delivers similarly strong energy security benefits by directly addressing oil dependence, which remains the EU's largest and most volatile import exposure – in 2025, the EU imported approximately €210 billion worth of oil[9]. Battery electric vehicles replace oil with electricity that can be produced domestically, structurally reducing vulnerability to global oil price shocks and supply disruptions.

Other electrification-enabling technologies also offer substantial security, economic, and climate benefits while strengthening Europe's sovereignty. **Decentralised renewable energy** lowers system exposure by reducing reliance on single points of failure. Planned and operated with a system approach, distributed wind and solar, storage, smart loads and flexibility assets can optimise the energy system, local consumption and related costs.

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[3] European Commission, "Commission Staff Working Document, EU Energy security - evaluating the EU's security of electricity and gas supply framework", accessible here.

[4] EMBER, "Shockproof: how electrification can strengthen EU energy security", accessible here.

[5] Strategic Perspectives, "Endgame for gas dependence: electrification and regional partnerships", accessible here.

[6] EHPA, "EHPA position on the EU energy security framework", accessible here.

[7] European Commission, " Communication on an Action plan for Affordable Energy Unlocking the true value of our Energy Union to secure affordable, efficient and clean energy for all Europeans", accessible here.

[8] EHPA, "EHPA position on the EU energy security framework", accessible here.

[9] Eurostat, "EU imports of energy products - latest developments", accessible here.

These will also reduce additional stress on the high voltage grid and potentially provide support in recovering during incidents of extreme events, or targeted (cyber)attacks

At the same time, across the energy system, greater renewables penetration, electrification and flexibility could generate savings of €160 billion by 2040 compared to a fossil-fuel-intensive trajectory[10], while in 2040, €6 billion investment in electricity grids would provide €13 billion per year in system cost reduction[11]. Wind power already supplies 20% of Europe's electricity and avoids at least 100 bcm of fossil-fuel imports annually.[12] Finally, we expect 400,000 additional jobs in the deployment of rooftop solar PV, battery storage and electric vehicle charging points can be created in the electrical contracting sector by 2030.[13]

II. Make electricity for affordable

Realising the full potential of electrification for energy security and security of supply will require access to abundant and internationally competitive electricity.

Electricity bills remain burdened by non-electricity-related charges that inflate costs for households and industries. Household electricity charges in Europe are nearly 15 times as high, and industrial charges 4 times as high as in China[14]. In parallel, in Spain for example, regulated charges on electricity are 19 times higher than for gas. In Portugal, regulated charges on electricity for households remain significantly more expensive than fossil gas and daily fixed charges are still 4 times higher for electricity than fossil gas. Such imbalances weaken the business case for clean electrification and distort investment decisions[15].

Recommendations

- Member States should make maximum use of the flexibilities allowed in EU Energy Taxation to keep the fossil fuel to electricity price ratio as low as possible - ideally below 2.
- Fossil fuel subsidies should be phased out against clear deadlines, and VAT reduced for products that enable direct electrification.
- The Industrial Decarbonisation Bank pilot auction should be institutionalised with an increased annual budget, drawing from experiences in this first pilot auction, and should have a targeted scope for direct electrification technologies, which miss dedicated funding compared to other alternatives.
- Existing EU funding such as the Innovation Fund, the Connecting Europe Facility, and the Recovery and Resilience Facility should prioritise direct and smart electrification where possible, alongside enabling infrastructure, including electricity grids, and research and innovation.

[10] Solar Power Europe, "Securing Europe's Energy Future", accessible here.
[11] ENTSO-E, 'Opportunities for a more efficient European power system by 2050 – 2025 Infrastructure Gaps Report', accessible here.
[12] Wind Europe, "Wind Europe's response to the call for evidence on the revision of the Energy Security Framework", accessible here.
[13] EuropeOn, "Powering green jobs growth with electrical contractors", accessible here.
[14] Zero, "Electricity much more expensive than fossil gas in the residential sector", accessible here
[15] Wind Europe, "Revamping electricity bills", accessible here.

III. The role of flexibility for energy security

Flexibility, via demand response, storage, and other distributed energy resources, offers an efficient and cost effective way to achieve energy security by reducing our dependence on imported fossil fuels while simultaneously optimising and decarbonising the energy system.

From a preparedness perspective, renewables, grids and flexibility make the entire energy system more resilient. Capacity is dispersed, and therefore less vulnerable to potential failures due to extreme climate events, unexpected failures or even targeted attacks, resulting in a more shockproof system.

While several Member States have introduced schemes to support batteries[16] and pumped hydro[17] demand-side flexibility, particularly in the buildings and transport sectors, remains vastly underutilised despite its rapid response capabilities and cost-effectiveness. At the same time, the rapid uptake of battery electric vehicles is creating a new and substantial source of flexible demand and distributed storage. Through smart charging and vehicle-to-grid (V2G) technologies, EVs can shift electricity consumption to periods of high renewable generation and provide balancing services to the grid.

Recommendations

- Ensure fair participation of demand response, storage, and other distributed energy resources in all capacity mechanisms, based on robust technical and reliability requirements.
- Consider adequacy support measures in conjunction with flexibility mechanisms to improve efficiency and lower costs.
- Open ancillary service markets to all resources, including residential and commercial flexible loads, EVs, and SMEs.
- Expand flexibility support schemes and integrate them with capacity remuneration mechanisms to reflect the full value of flexibility, considering related capabilities and system contributions.
- Accelerate the deployment of demand-side response across all Member States by enabling dynamic price signals, removing regulatory barriers, and ensuring market access for aggregators, with particular focus on high-potential sectors such as buildings and transport.
- Unlock the flexibility potential of electric vehicles by enabling smart charging and vehicle-to-grid services, ensuring interoperable charging infrastructure, standardised communication protocols, and market access for aggregators, with clear roles and coordination with system operators, EV fleets, and consumers while maintaining system visibility and clear effective price signals.

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[16] European Commission, "Commission approves €48 million French State aid measure to support Envision AESC France's production of batteries for electric vehicles", accessible here.

[17] Eurora Energy Research, "France strengthens hydropower to drive low-carbon energy transition", accessible here.

- Align storage duration requirements with combined flexibility and adequacy objectives rather than using uniform minimum durations, based on system needs and robust assessments.

IV. Strengthen grid risk-preparedness and ensure the physical and cyber security of electricity networks

A rapidly electrified energy system can only enhance energy security if electricity grids are expanded, modernised and resilient to cyber and physical threats, including climate change impacts. Electricity grids are the backbone of energy security. They enable renewables and market integration, flexibility, and ensure a secure electricity supply. Strengthening energy security requires robust electricity grids within and between Member States.

While the Grids Package rightly focuses on accelerating deployment and anticipatory investments, the Energy Security Framework must ensure that grid availability, resilience, and protection from cyber and physical threats are fully integrated into security-of-supply assessments and preparedness measures.

Moreover, climate change is already placing significant pressure on energy systems and infrastructure. The revised framework should better reflect climate-related threats and risks, update safety regulations for the design, maintenance and operation of electricity networks, adopt preventive measures to address them, and incentivise the integration of climate resilience measures into system planning and implementation.

Enhanced coordination on shared priorities across voltage levels and alignment on energy security policies across borders, can provide the visibility, tools, and frameworks needed to anticipate and manage crises. System services and technical requirements across the energy system value chain should be visible and usable to electricity grid operators subject to clear rules, market-based mechanisms and where relevant user consent to maintain system stability and security.

Recommendations

- Risk-preparedness stakeholders' consultations, e.g. as set out in Article 10 and Annex of Regulation (EU) 2019/941, must reflect today's decentralised and digital electricity system. The Commission should mandate the structured involvement of the entire electricity value chain in such exercises and should include key parameters such as the availability of workforce and skills.

- Measures to increase resilience and adaptation to climate-related threats and risks, should be recognised, incentivised and remunerated across all development stages of electricity grids.

- Electrification and resilient electricity infrastructure should be prioritised within the 1.5% defence-related investment set out in NATO's Hague Summit Declaration from June 2025.[17]

- Ensure that national and EU-level adequacy and security-of-supply assessments account for grid availability, congestion risks, and outage scenarios, including the impact of delayed reinforcements or physical disruptions.

- Strengthen requirements for physical resilience and protection of electricity networks within the Energy Security Framework, including protection against sabotage, hybrid threats, and climate-related extreme weather events.

- Strengthen cross-border cooperation on grid security and resilience, including information-sharing and coordinated response.

The Electrification Alliance is a coalition of leading associations who believe that electricity is the key energy carrier for an efficient, decarbonised, and cost-effective European future.

Our alliance brings together experts from renewable energy, transport, heating, grid infrastructure, and electrification technologies, united by a shared vision: a future where electricity drives Europe's energy system, reducing emissions, enhancing energy efficiency, and ensuring affordable power for all.

[17] NATO, "The Hague Summit Declaration", accessible here.