Electricity grids: the backbone of the EU energy system

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The European Parliament adopted by 418 votes to 112, with 45 abstentions, a resolution on electricity grids: he backbone of the EU's energy system.

Stressing that electricity grids are central to the Union's transition to a competitive net-zero emissions economy by 2050, Parliament called on Member States to explore, optimise, modernise and fully develop their electricity network capacity, including transmission and distribution. The widespread blackout that occurred in the Iberian Peninsula and parts of France on 28 April 2025 demonstrated, among other things, the importance of increasing the energy grid’s resilience.

Importance of electricity grids for the European energy transition

Faced with the expected 60% increase in electricity consumption by 2030, Parliament highlighted the growing need **to integrate a significant share of variable renewable energy into the grid** and the need for grids to adapt to a more decentralised, digitalised and flexible electricity system, with a view to an additional cross-border capacity of 23 GW by 2025 and 64 GW by 2030. More than 40% of the Union's distribution grids over 40 years old and need to be modernised.

Members believe that dispatch-down of renewables, caused by grid congestion and curtailment, represents an unacceptable waste of valuable renewable electricity and money. The Commission is called upon, as part of its next package of measures on European networks, to define an **EU strategy** to vastly reduce the dispatch-down of renewable electricity.

Electricity grid infrastructure is a priority for achieving the Union's strategic autonomy. Parliament highlighted the role of **smart grids** in improving congestion management and optimising the distribution of electricity from renewable sources. It called for the development of enabling frameworks for **renewable energy communities**, which are often held back by regulatory and financial barriers to accessing the grid and network financing.

Regulatory situation and difficulties

Parliament called on the Commission and the Member States to work towards **integrated and cross-sectoral network planning** at local, regional, national and Union levels with a view to increasing the system's efficiency and reducing costs. It called on the Member States to complete the projects of common interest (PCIs) and on the Commission to urgently propose a **targeted revision of the TEN-E Regulation** in order to: i) to introduce a robust planning process, ii) to ensure that scenarios are developed in line with the decarbonisation agenda and facilitate access for smart grid projects, and iii) to introduce a simplified application procedure for small and medium-sized distribution system operators.

Given that network planning is a long-term process closely linked to investment stability, Members proposed extending the time frame of network development plans to **20 years**. They also insisted on maintaining the Connecting Europe Facility (CEF-E), which has proven to be a key instrument for co-financing cross-border energy infrastructure.

The resolution highlighted the importance of establishing **clear indicators** to measure whether the EU is on track to achieve the necessary network expansion and strengthening to meet its 2050 targets. Members

called on the Commission to amend Directive (EU) 2019/944 on the internal electricity market and introduce transparent priority connection criteria.

Deploring the delays and uncertainties surrounding several interconnection projects, Parliament called on the Commission to propose, by June 2026 at the latest, a **binding interconnection target for 2036**, based on a needs assessment. It also stressed the need to speed up permitting procedures for electricity infrastructure and called on the Commission to closely monitor the implementation of the Renewable Energy Directive and regularly assess whether the revised permitting provisions are sufficient to achieve the Union's objectives. Members stressed the need to improve the **public procurement framework** and called for networks and related technologies to be explicitly recognised as **strategic sectors**.

Funding

Parliament called on the Commission and the Member States, in the preparation of the next MFF, to significantly increase the CEF-E envelope and the percentage of CEF-E funds dedicated to network projects as a separate appropriate resource. It called on the Commission to propose a dedicated financing instrument, for example drawing on revenues from the market-based emission reduction scheme, to enable Member States to support decentralised and innovative grid projects with clear European added value, including smaller projects.

Grid-enhancing technologies, digitalisation, innovative solutions and resilience

The resolution highlighted that grid reinforcement technologies, digital solutions and data management technologies, as well as smart energy devices, often using artificial intelligence, can significantly increase the efficiency of existing grid capacities and optimise the use of existing resources. Members urged the Commission further promote these innovative technologies when assessing projects seeking EU funding.

Members urged the Commission and Member States to continue and increase the digitalisation of the European electricity grid. They stress the urgent need to **strengthen the security and resilience of critical electricity infrastructure**, including interconnectors and subsea cables. Furthermore, national regulatory authorities should take into account the costs incurred by operators in adopting cybersecurity and resilience measures.

Supply chain, raw materials and need for skills

Parliament highlighted the need to strengthen network supply chains to expand the supply of affordable network technologies and thus limit the costs borne by consumers through network charges. It called for a **strategic approach to the procurement of critical network-related energy technologies**, components or materials to avoid developing dependencies on single suppliers outside the Union. Members urged maximum standardisation of key electricity grid equipment and finally stressed the urgent need to address labour shortages in the energy sector.