Electricity grids: the backbone of the EU energy system

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The Committee on Industry, Research and Energy adopted the report by Anna STÜRGKH (Renew, AT) on electricity grids: the backbone of the EU energy system.

The report highlighted that completing the integration of the EU's energy market will save up to EUR 40 billion annually and that a 50% increase in cross-border electricity trade could increase the EU's annual GDP by 0.1%. Members called on Member States to **explore, optimise, modernise and fully develop the capacity of their electricity networks** , including transmission and distribution.

Importance of electricity networks for the European energy transition

With electricity consumption expected to increase by 60% by 2030, the report 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.

Members recalled that by 2030, the EU must invest approximately EUR 375 billion to EUR 425 billion in distribution networks and EUR 584 billion in total in electricity transmission and distribution networks. They noted with concern that in 2023, the costs of managing electricity grids congestion in the EU summed up to EUR 4.2 billion and continue to rise, and that curtailment is an obstacle to increasing the share of renewable energy sources. The Commission is invited, as part of its next package of measures on European networks, to define an **EU strategy** to significantly reduce curtailment of renewable electricity production.

The report highlighted the role of **smart grids** in improving congestion management and optimising the distribution of electricity from renewable sources. Members deplored the fact that delays in responding to grid connection requests are slowing down electrification. They also stressed the importance of **supporting energy communities**, which are often held back by regulatory and financial barriers, and called for appropriate regulatory frameworks that empower citizens, municipalities, SMEs, and businesses to actively participate in the electricity market.

Regulatory situation and difficulties

The report highlighted that the TEN-E Regulation and Projects of Common Interest (PCIs) and Projects of Mutual Interest (PMIs) are effective tools for developing the Union's cross-border energy infrastructure. It called on Member States to fully implement the PCIs and on the Commission to urgently propose **a targeted revision of the TEN-E Regulation** to ensure, *inter alia*, that scenarios are developed in line with the decarbonisation agenda and facilitate access for smart grid projects.

Given that network planning is a long-term process closely linked to investment stability, Members proposed extending the duration 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 report highlighted the importance of establishing **clear metrics** to measure whether the EU is on track to achieve the necessary grid expansion and reinforcements needed to meet its 2050 targets. Members believe that national regulatory authorities (NRAs) could benefit from clear legislative provisions on how

Member States can prioritise grid connections, so as to move away from the 'first come, first served' principle. They therefore called on the Commission to amend Article 6 of Directive (EU) 2019/944 on the internal market in electricity and introduce **transparent priority connection criteria.**

Deploring the delays and uncertainties surrounding several interconnection projects, the report 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 authorisation procedures for electricity infrastructure. Members stressed the need to improve the **public procurement** framework to address the challenges network operators face with regard to supply chains. They called for networks and related technologies to be explicitly recognised as **strategic sectors.**

Funding

The report 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 report 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 therefore urged that these innovative technologies and solutions be explored and that the Commission further promote these innovative technologies when assessing projects that apply for EU funding.

Members urged the Commission and Member States to continue and increase the **digitalisation** of the European electricity grid. They stressed 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.

The report urged the Commission, DSOs and TSOs to develop an **EU-owned common European energy data space**, where harmonised data is managed, exchanged and stored securely across the Union.

Supply chain, raw materials and need for skills

The report 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.