

BLOG POST December 4th 2025

With the 'Grids Package', the Commission bids for a truly European power infrastructure

Auteur

Ines Bouacida

Research fellow, Climate and Energy

 Reading time: 6 min

On 10 December, the European Commission will publish its 'Grids Package' alongside texts from the Clean Industrial Deal. The objective is to facilitate the development of electricity networks for the energy transition, including by adjusting the planning of other energy infrastructure. While the European framework has focused on increasing connections between national networks over the last decade, and as the transition moves forward, security, flexibility and affordability requirements reassert the importance of stronger grids at all levels. This blog post analyses the motivations underpinning the package and the regulatory changes it could result in.

Significant investment needs

Grids are high on the political agenda of the new European Commission, which had already published an [Action Plan for Grids](#) in 2023 emphasizing that Member States should give a high level of priority to this issue, and which estimated a €584 billion investment need in electricity transmission networks by 2030, i.e. [+60% compared to annual investments over the period 2015-2021](#). The publication of the 'Grids Package' in December 2025 marks the beginning of an important political sequence for energy infrastructure, especially grids, with the likely announcement of the revision of the TEN-E Regulation,¹ which currently defines the process for selecting priority cross-border infrastructure projects for the EU, and potentially other pieces of legislation, in 2026.

The issue is equally significant in France, where RTE, the electricity transmission system operator, has proposed a €100 billion investment plan for the next 15 years in its latest [ten-year network development plan \(SDDR\)](#) for 2040. Germany also faces the challenge: new grid investment requirements are estimated at €210 billion by 2037 and €250 billion by 2045.

Structural changes are necessary

Massive grid investments are driven by the fundamental changes required across the energy system. To achieve climate neutrality, a large proportion of uses should electrify—electrification of end uses should grow from 20% to around 50%—while renewable electricity production must increase five- to six-fold between 2021 and 2050.² Simultaneously, the gas network would see its role shift, with demand dropping by approximately 70% between 2020 and 2050,³ while new regional hydrogen and CO₂ infrastructure needs (including cross-border zones) could emerge around industrial sites.⁴

Economic and energy optimization studies consistently demonstrate the benefits of integrating infrastructure⁵ to limit energy costs and for security of supply. A [recent modelling study](#) conducted by Fraunhofer IEG, ISI and d-fine shows that geographical and energy vector integration can reduce energy system costs by €560 billion between 2030 and 2050 (considering investments in infrastructure and electricity generation capacity, as well as operational costs) thanks to lower investment requirements for new infrastructure and optimized production capacity.

The challenge of sharing costs and benefits

The accelerated rollout of new electricity capacity for the transition raises political issues and casts technical and economic optimization in a new light. While the added value of integrated planning at European level is established, the costs and benefits of cross-border connection projects are not evenly distributed among Member States, as the modelling study abovementioned highlights.

RTE also points it out for the French electricity network. In the latest SDDR, it claims that additional interconnection capacities (beyond projects currently under construction) would require reinforcements to the internal network, which are not included in the European cost-sharing mechanisms for interconnections (defined in the TEN-E Regulation).

The case of French interconnections illustrates the challenge of distributing costs and benefits of cross-border energy infrastructure, a concern that should arise in other regions as well: for example, in the Fraunhofer IEG, ISI & d-fine (2025) model, greater European integration requires Poland and the Baltics to install more offshore wind capacity (and associated infrastructure) to supply additional renewable electricity to neighbouring regions.

This raises a critical question for the European framework: how can infrastructure projects that would deliver a net benefit at EU level be implemented, when national stakeholders oppose them for financial reasons or due to domestic political considerations? Currently, EU-level governance processes, particularly for identifying and financing

key projects, as defined by the TEN-E Regulation, are inadequate to resolve such situations. In particular, the methodology for cost-benefit analysis should be redesigned at European and national level to guarantee actual acceleration. In a recent [note](#), think tank Agora Energiewende explores the political conditions to implement an optimized European vision of infrastructure. The [Energy Union enhancement process](#) launched in June 2025 as part of the [Action Plan for Affordable Energy](#) may offer an opportunity to bring such changes into discussion.

From objectives to implementation: how to get the job done?

Financing is key. While budget constraints are making it difficult to bridge the investment gap for climate neutrality in general, how can sufficient resources be raised for new infrastructure?

Today, infrastructure costs are passed on by operators to energy consumers *via* network tariffs, under the supervision of regulators. However, the scale of investment needs may require additional public funding, as well as new cost recovery mechanisms which span longer timeframes and larger consumer groups. The European Commission considers such an approach in its [guidance notice on anticipatory investments](#), which the Grids Package could clarify.

Adjusting these mechanisms would require changes to the European framework (particularly TEN-E), but also to national frameworks, since national network investment plans and tariffs need approval from national regulators.

Cross-border infrastructure projects recognized as projects of common or mutual interest (PCI and PMI) are a special case. According to a process specified by the TEN-E Regulation, they have access to European funding from the Connecting Europe Facility (CEF). The fivefold increase in the CEF amount proposed by the European Commission in the new Multiannual Financial Framework would not cover all the investment needs for interconnections. Between 2021 and 2027, the CEF has earmarked €6 billion for energy infrastructure projects; even considering the Commission's proposals for the period 2028-2034, think tank Ember [finds](#) a €30 billion public investment gap for the European Commission's interconnection target for 2040, based on the analysis of electricity network operators.

Implementation of ambitions for the grid are hampered by a naturally slow pace of installation, especially if compared to that of renewable capacity and the (expected) pace of end-use electrification. In this context, the European Commission has suggested that simplifying and optimizing authorization processes, which are primarily handled at Member State level, would be [one of the objectives of the 'networks package'](#). Can this objective be combined with public debate requirements for infrastructure projects?

Projects with the highest priority for Europe should be identified to phase investments effectively. The current TEN-E framework identifies projects of common interest for the Union's energy system, but does not rank them. The TEN-E revision could propose a reinforced governance system to determine these priority levels at European level, involving Member States.

Finally, investment decisions for electricity infrastructure are made particularly uncertain because of uncertainties surrounding the pace of electrification and the installation of new electricity capacity. To reduce uncertainties and avoid slowing down electrification and the development of new renewable capacity, the European Commission is considering the possibility of anticipatory investments, for which it recently published [guidance](#), whose implementation has yet to be defined.

The Commission's 'Grids Package' opens a discussion on the conditions for achieving an affordable and secure energy system for Europeans, which will continue in 2026 with, among other things, the revision of the TEN-E Regulation and the EU Electrification Action Plan to be published in the first quarter of 2026.

1

See [IDDRl \(2023\)](#) for the previous revision of the TEN-E Regulation in 2021.

2

According to the European Commission's [impact assessment](#) made for the 2040 climate target.

3

Ibid.

4

These transformations are described in several prospective studies, such as [Bouacida, Wachsmuth & Eichhammer \(2022\)](#), [Agora Energiewende \(2021\)](#), [Artelys \(2021\)](#), and more recently, the study commissioned by Agora Energiewende from [Fraunhofer IEG, ISI & d-fine \(2025\)](#).

5

Integration refers to both joint planning of the energy system between Member States and between energy sources (electricity, methane gas, hydrogen), which enables synergies to be achieved.

ENERGY

EUROPE

POWER