# European Grids Package: ENTSO-E Recommendations

## Simplify the legislative framework and ensure timely development of critical electricity infrastructure

entsoe

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**1.**
**Streamlined planning and stronger regional coordination**

**2.**
**Faster permitting and reduced bureaucracy**

**3.**
**Adequate and accessible financing**

**4.**
**Stronger supply chains and flexible procurement**

# Introduction

The grid is the backbone of the European interconnected electricity network. It stretches across and beyond the EU, from Portugal to Ukraine and the Balkans, and from Norway to Italy. Transmission System Operators (TSOs) operate the electricity system efficiently, securely and in coordination, ensuring that electricity flows reliably across borders. This infrastructure makes the trade of electricity possible for all market participants and ensures a reliable power supply for all members of society: industry, households and public entities alike.

**Electricity is not merely a commodity: it is an essential service.** This essential service relies on **fully functioning and resilient infrastructure**. This includes efficient and secure grid operation to deliver power when and where it is needed.

ENTSO-E and TSOs are committed to enabling a carbon-neutral future, while at the same time continuing to safeguard grid security. The energy transition is within reach, but it requires sustained coordination, innovation and close collaboration with stakeholders and policymakers – with society's benefit always at the centre.

## Bottlenecks: addressing the need for speed

The electricity system and grid infrastructure are now in flux. As Europe transitions toward carbon neutrality and the further electrification of sectors to reduce energy dependence on fossil fuels, the power system needs to expand, modernise and integrate new clean energy and flexibility sources. At the same time, due to geopolitical shifts and climate change, TSOs are confronted with growing threats to the security of supply as well as to the physical and cyber resilience of the grid.

There is a shared consensus across EU and national legislators that delivering grid infrastructure projects is urgent, particularly in regions with limited interconnection capacity. Cross-border infrastructure and internal grid reinforcements are central to achieving EU goals for carbon neutrality, energy security and competitiveness. Yet, implementation continues to face significant delays. ENTSO-E urges decision-makers to support timely and adequate national and cross-border grid **development**, adopt innovative technologies and digital solutions, **ensure system flexibility**, and **drive market innovations**. Together, we can power Europe's green and competitive future, delivering a decarbonised electricity system that is scaled to meet future demand.

To that end, ENTSO-E welcomes the upcoming European Grid Package and wishes to contribute to its success. While the Package should mainly focus on **simplifying** the EU legislative framework, **decisive action** is also needed **to effectively speed up the delivery of infrastructure projects of pan-EU interest**, such as interconnections, offshore grids and internal networks, through:

1. **Streamlined planning and stronger regional coordination**
2. **Faster permitting and reduced bureaucracy**
3. **Adequate and accessible financing**
4. **Stronger supply chains and flexible procurement**

# ENTSO-E's recommendations to unlock grid development

## 1. Streamlined planning and strengthen regional coordination

The existing TEN-E Regulation provides a robust framework for grid planning, based on the technical analysis of TSOs, which work under clear policy framing and with regulatory oversight. Relevant stakeholders and decision-makers at the appropriate European, regional and national levels are also appropriately engaged in the process. ENTSO-E supports targeted **improvements that simplify current processes, while maintaining its strengths**.

### Focus on the Ten-Year Network Development Plan (TYNDP)

- ENTSO-E's Ten-Year Network Development Plan (TYNDP) links, supports and complements national grid development plans (NDPs). It provides a Europe-wide vision of the future power system and investigates how power links and storage can enable the energy transition to happen cost-effectively and securely.
- At the heart of the TYNDP is the definition of scenarios anticipating future developments of the European power system. ENTSO-E and its gas counterpart, ENTSOG, develop these scenarios in close collaboration with stakeholders and analyse their impact with tailored modelling tools. This allows ENTSO-E to identify where the European grid is strong enough for the demands of the European power markets and where it needs to be reinforced. **The main role of the TYNDP is therefore to identify where investment in the electricity system would help deliver the EU climate and energy goals**.
- Project promoters can then address the **cost-effective options** for closing the gaps identified in the TYNDP by submitting their project proposals to be assessed and included in the TYNDP projects list.
- The inclusion in the TYNDP allows projects to be eligible for the status of Projects of Common Interest (PCIs) and Projects of Mutual Interest (PMIs). The European Commission, in fact, grounds its adoption of the PCIs' and PMIs' list every two years on the latest TYNDP.
- Each iteration of the TYNDP has moved towards a more transparent, integrated, and detailed assessment of the growing needs to develop the system of the future. **It is now time for decisive action to enable the timely implementation of electricity infrastructure**.

## 1.1 More robust and efficient scenario-building processes

- The TYNDP scenarios are based on National Energy and Climate plans (NECPs). To achieve a truly coordinated and efficient EU planning, the harmonisation of the NECPs in format and scope is needed. This applies to their content, alignment with overarching EU targets, time horizon, and timing of publication, as well as coordination between gas and electricity sectors.
- To increase the effectiveness of **the Commission's decision and ACER's opinion on the TYNDP scenarios, these should be released much earlier in the process,** possibly at the stage of input data compiled by TSOs and draft methodologies.
- **ENTSO-E works closely with stakeholders to design reliable scenarios** that address the potential of a more integrated energy system. This process has shown itself to be reliable and should be maintained. While the current approach to coordinated sector analysis based on common scenarios is fit to capture each sector's specificities, additional steps towards integrated analysis can be taken once all sectors' data and modelling methodologies reach equal robustness and maturity. In the meantime, ENTSO-E will continue working on fostering cross-sectoral collaboration, based on the learnings from the respective models already available. Vertical assessment of grid needs across transmission and distribution level is already in place at TSO-DSO national level, which feeds into the TYNDP models.

## 1.2 Grid implementation through enhanced regional cooperation

- Decisions to invest in new projects should always be taken at the national level in line with the relevant national framework and the principle of subsidiarity. However, following the needs identification, enhanced monitoring of the next phases and of project implementation on a European level would be beneficial.
- **This can be achieved via enhanced regional collaboration, for instance through the Commission's High-Level Groups, while ensuring the involvement of system operators to provide technical expertise.**
- **ENTSO-E also recommends refocusing the Regional Investment Plans as a tool** for the technical monitoring of project implementation and identified needs. In particular, the role of TSOs' Regional Investment Plans should be reinforced to:
  - Highlight infrastructure gaps from a regional perspective and substantiate their nature/characterisation, rationales, and existing and potential future solutions;
  - Point out the interactions and dependencies between internal and cross-border network reinforcement for efficient planning of the cross-border interconnections;
  - Describe regional or national uncertainties that hinder investment, including security, technical, financial and regulatory aspects;
  - Highlight NDPs or initiatives that may already address some of these gaps.

## 1.3 Streamlined PCI/PMI process

- The methodology applied to assess PCIs/PMIs is mature and does not need to be automatically edited every cycle.
- ENTSO-E also highlights the following elements that could help streamline the process:
  - Remove project ranking from the process;
  - Apply different approaches to electricity and $H_2$ projects;
  - Distinguish between mature and less mature projects. It's is recommended to set the electricity list based on eligibility and have a ranking only for less mature categories (e. g. $H_2$, digitalisation);
  - Refine selection criteria for PCI/PMI candidates, including projects that unlock the use of transmission capacity without necessarily increasing cross-border capacity, considerations on dependency risks from non-EU countries, internal reinforcements in non-EU countries for PMIs, and non-wire solutions (e.g. digitalisation);
  - Simplify reporting framework by:
    1) Better reflecting the maturity and complexity of projects and only focusing on key milestones and necessary strategic information;
    2) Shifting from annual to biennial reporting cycles to reduce administrative burden without compromising oversight.
    3) Allowing for PCI/PMI status to persist until completion, provided the project scope remains unchanged. This is especially relevant for projects already in advanced stages of permitting or construction, where a new application has limited added value and could even lead to retroactive procedural hurdles.

# 2. Accelerate Permitting

More than half of the transmission projects needed by 2030 are still awaiting permits. Environmental assessments and other planning obligations have become more complex, burdening permitting authorities. ENTSO-E welcomes the Commission's plan to propose dedicated legislation on infrastructure permitting in the upcoming Grid Package. It is essential that future permitting measures deliver real simplification and clarity for infrastructure developers, safeguarding the environment whilst avoiding additional complexity or overlaps with the existing framework.

## 2.1 Implementation of existing EU laws

- Member States should implement REDIII Art. 15e without delay, extending permitting exemptions for RES projects to their connecting grid infrastructure. ENTSO-E welcomes the **European Commission's guidance** to support Member States in this transposition.

## 2.2 Simplification of existing framework

- EU co-legislators should **simplify and harmonise the relevant environmental** rules – across the SEA Directive, EIA Directive, and the Birds Directive, Habitats Directive, Water Framework Directive, Environmental Liability Directive and REDIII. This will reduce bottlenecks and improve legal certainty.
- ENTSO-E also recommends re-establishing the acceleration of permits for renewable energy integration projects, including energy storage and grid upgrades, reinforcement and development, **building on the successful accomplishments of the expired Emergency Regulation 2022/2577**.

## 2.3 Additional recommendations to accelerate permitting

- **Shorten or establish deadlines for permitting procedures**, especially PCIs/PMIs. But deadlines alone are not enough: **material requirements** themselves must be reviewed and simplified, especially those stemming from environmental law.
- When feasible, national courts should be required to **prioritise grid-related litigation** with deadlines for rulings. Allowing for bundling of related legal challenges can avoid fragmentation and further delays.
- **Promote one-stop shops for network permits** at national level as deemed relevant by Member States. Regional one-stop shops for offshore projects should be considered, building on success stories such as VikingLink.

# 3. Facilitate Investments in Grid Infrastructure

According to TYNDP 2024, Europe needs over €800 billion in transmission grid investment (cross-border, hybrid and offshore radial transmission infrastructure and storage) by 2050. Investments in the electricity grid generate significant socio-economic benefits. For instance, according to the TYNDP 2024, every € invested in the grid translates into €2 saved in system costs by 2040. ENTSO-E thus welcomes the Commission's recent commitment to increasing the Connecting Europe Facility (CEF) budget by over five times in the next Multiannual Financial Framework (MFF) period compared to the current one, and the recognition of electricity grids among the beneficiaries of the Competitiveness Fund in order to mitigate the impact of costs for consumers. Nonetheless, TSOs need support beyond EU funding to preserve financial attractiveness and leverage financing at lower costs.

## 3.1 Attractiveness of regulatory framework

- To mobilise long-term private investments, **regulatory frameworks** must be stable, predictable and forward-looking. They must enable sufficient cash flows, competitive returns on capital, and provide adequate risk-return profiles and stronger equity positions for TSOs.

## 3.2 Role of the European Investment Bank (EIB) and National Development Banks

- **Provide further investments in TSOs' equity and expand strategic support via EIB and NDBs**, including through equity-related financial schemes (possibly blended finance schemes), as well as EIB-backed guarantees, grants, and lending schemes to de-risk investments.

## 3.3 EU Funds and Grants

- **Increase EU public funding** for electricity transmission. The Connecting Europe Facility for Energy (CEF-E) must be reinforced in the next MFF or integrated via complementary funds.
- Limit competition between transmission grid investments and other contributors to the energy transition. ENTSO-E recommends creating dedicated envelopes for transmission and prioritising projects that significantly contribute to decarbonisation and deliver system-wide benefits that are not easily attributed to individual countries in cost-sharing schemes.
- Recognise electricity transmission projects as strategic assets for EU defence, energy independence and security and thus include them in the scope of the growing EU defence budget.

## 3.4 Simplification of grants procedures

› Simplify and standardise processes for applying for and managing EU grants and development bank support. Lead times for application and decisions should be shortened. Given the agreed necessity of investments in transmission grid projects, proof of profitability or solvency should not be required.

## 3.5 Cross-Border Cost Allocation (CBCA)

› Access to CEF funding should be decoupled from CBCA agreements which should be a voluntary mechanism.

› Voluntary regional approaches should be encouraged to facilitate cost-sharing agreements, with early engagement of all relevant stakeholders, TSOs and project promoters to allow for a transparent, consensual process and proper alignment of project data.

# 4. Strengthen Supply Chains

To meet demand by 2030, Europe must install over 150,000 km of onshore and offshore transmission lines and critical equipment (e.g. more than 14,000 circuit breakers). This increases the pressure on the entire supply chain, driving up prices and lead times. While many grid technology manufacturers are based in Europe, the supply chain is globalised. Europe must make itself a priority market for manufacturers. European TSOs are thus increasingly competing on a global market for limited manufacturing capacity. While the TYNDP was not originally tailored to address supply chain management, the 2024 edition includes a section exploring TSOs' investment pipelines. With continued focus and gradual enhancements, the TYNDP could play an increasingly useful role in supporting supply chain considerations in the future.

## 4.1 Value Chain Coordination

- ENTSO-E acknowledges the benefits of harmonising technical requirements, in particular HVDC, but emphasises that this is a long, costly process requiring careful assessment and coordination with all stakeholders. ENTSO-E urges co-legislators to allow adequate time for the development of supply production chains, in order to avoid deepening import dependency.

## 4.2 Procurement Reform

- Manufacturers need more than projections: they require a reliable political framework, as well as firm contracts and financial commitments. **Allowing for greater flexibility in framework agreements** can have a significant effect on stabilising supply, incentivise investments in new production lines and capture more capacity.
- **ENTSO-E urges EU co-legislators to simplify public procurement rules** to reflect today's challenges – oligopolistic market structures, spiking prices, and booked out supply chains for critical components.
  - **Allow contracting authorities to negotiate technical and economic terms during tenders** and allow room for fundamental adjustments as a project evolves without launching new tenders.
  - **Increase EU-wide thresholds for works to goods/services and for works** to reflect real supplier behaviour and reduce administrative burdens on low-value procedures.

## 4.3 Workforce Shortages:

- 88 % of TSOs identify skilled workforce as a supply chain bottleneck. ENTSO-E calls for a Net-Zero Academy for Grids and broader EU action to develop grid-focused technical talent.

# ENTSO-E Mission Statement

**ENTSO-E, the European Network of Transmission System Operators for Electricity, is the association of the European transmission system operators (TSOs).** The **40 member TSOs, representing 36 countries**, are responsible for the secure and coordinated operation of Europe's electricity system, the **largest interconnected electrical grid in the world.**

**Before ENTSO-E was established in 2009, there was a long history of cooperation among European transmission operators, dating back to the creation of the electrical synchronous areas and interconnections which were established in the 1950s.**

**In its present form, ENTSO-E was founded to fulfil the common mission** of the European TSO community: to power our society. At its core, European consumers rely upon a secure and efficient electricity system. Our electricity transmission grid, and its secure operation, is the backbone of the power system, thereby supporting the vitality of our society. ENTSO-E was created **to ensure the efficiency and security of the pan-European interconnected power system** across all time frames within the internal energy market and its extension to the interconnected countries.

**ENTSO-E is working to secure a carbon-neutral future.** The transition is a shared political objective through the continent and necessitates a much more electrified economy where sustainable, efficient and secure electricity becomes even more important. **Our Vision: "a power system for a carbon-neutral Europe"*** shows that this is within our reach, but additional work is necessary to make it a reality.

In its Strategic Roadmap presented in 2024, ENTSO-E has organised its activities around two interlinked pillars, reflecting this dual role:

- "Prepare for the future" to organise a power system for a carbon-neutral Europe; and
- "Manage the present" to ensure a secure and efficient power system for Europe.

**ENTSO-E is ready to meet the ambitions of Net Zero, the challenges of today and those of the future for the benefit of consumers, by working together with all stakeholders and policymakers.**

* https://vision.entsoe.eu/

## Glossary

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| **ACER** | Agency for the Cooperation of Energy Regulators |
| **CBCA** | Cross-Border Cost Allocation |
| **CEF** | Connecting Europe Facility |
| **CEF-E** | Connecting Europe Facility for Energy |
| **EIB** | European Investment Bank |
| **ENTSO-E** | European Network of Transmission System Operators for Electricity |
| **MFF** | Multiannual Financial Framework |
| **NDB** | National Development Bank |
| **NECPs** | National Energy and Climate plans |
| **NPD** | National grid Development plans |
| **PCI** | Project of Common Interest |
| **PMI** | Project of Mutual Interest |
| **TSO** | Transmission System Operator |
| **TYNDP** | Ten-Year Network Development Plan |


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