



The European Association of the Electricity
Transmission and Distribution Equipment
and Services Industry

Accelerating Grid Infrastructure for Europe's Energy Transition

Grids Package Position Paper

October 2025

The European Grids Package is crucial to the success of the Clean Industrial Deal. The strategy for dramatically improving Europe's global competitiveness depends on getting decarbonisation right and ensuring a just transition, while also strengthening resilience.

Grid investments are a no-regret solution, as they enhance Europe's resilience, are a critical enabler of Europe's decarbonisation targets, and strengthen Europe's competitiveness by continuing to provide clean, secure and affordable electricity to European consumers and industry.

This requires maintaining and further strengthening Europe's transmission and distribution sector. The good news is that Europe is home to a world-leading transmission and distribution technology sector, consisting of more than 600 companies, over 450 factories, and more than 175,000 people across Europe. The strength of this strategic net-zero technology sector lies in the combination of multinational corporations and specialised SMEs. Together, they form a strong industrial base in Europe. The sector is investing over €9 billion in expanding global manufacturing capacity. Therefore, strengthening and securing the supply chain must be a priority in the Grids Package.

At the same time, the Grids Package needs to be compatible with, and avoid overlaps with, other ongoing and upcoming policies, such as the Affordable Energy Action Plan, the Electrification Action Plan, the Strategic Roadmap for AI and

Digitalisation, and the revision of the EU Public Procurement Framework. As a strategic net-zero industry, we are looking for an integrated policy framework that addresses the entire system – from local, national to European level, and from generation to demand – to deliver benefit for all stakeholders.

T&D Europe is already delivering on its commitments and continues to advance others (see below). At the same time, we expect the Grids Package to introduce the right measures to support a flexible, efficient, and competitive grid, underpinned by a strong European transmission and distribution technology sector.

Our expectations

1. Planning, implementation, and simplification

- **Integrated strategic planning:** Grid development faces regulatory complexity, a lack of commitments, bureaucratic hurdles, skilled worker shortages, and political uncertainty. Effective planning requires a system-wide perspective across all voltage levels, but turning plans into reality is hindered by insufficient long-term visibility. Plans must be backed by clear policy instruments that provide long-term certainty and predictability for investors and manufacturers.

Network development plans for transmission and distribution should be clearly aligned with the National Energy and Climate Plans (NECPs) for all voltage levels and accompanied by industrial plans specifying the expected demand from network operators for grid technologies. Together with the active involvement of generators, consumers, and technology providers, this would enable the industry to make the business case, with a competitive return on equity, to expand capacity, organise its supply chain, and recruit and develop the necessary skills.

- **Transmission and distribution:** The Grids Package needs to address all voltage levels. The transmission grid and cross-border interconnections will play a crucial role in Europe's energy transition and security of supply in an increasing renewable-based reality. Achieving the electricity interconnection target of at least 15% should also remain a priority.

As consumers and prosumers move to the centre of the energy transition, grid-connected buildings and microgrids make distribution grids essential to the future energy system, connecting vast distributed energy resources and new flexible loads.

- **Implementation:** The massive challenge of building and expanding Europe's electricity network requires industry to deliver at both speed and scale. Swift implementation, application and enforcement of existing EU legislation are crucial. For example, EU network codes should refer to recognised standards without deviations. Furthermore, Member States should implement these EU network codes without introducing amended or additional requirements and with a harmonised implementation schedule.
- **Simplification:** Functional specifications in grid tenders for high-voltage direct current (HVDC) systems, prioritising the functionality and performance over design complexity, can provide long-term benefits, particularly in emerging areas, i.e. interoperable offshore high-voltage direct current systems. This approach also offers opportunities for collaboration between manufacturers, system operators, and regulators. Progress is evolving gradually, and it will be important to build on existing processes while maintaining constructive cooperation with ENTSO-E, EU DSO Entity, and other stakeholders.

2. Digitalisation

- **Accelerate the roll-out of interoperable digital smart grids:** Together with the Action Plan for the Digitalisation of the Energy Sector, the Grid Action Plan and the Electricity Market Design, the Grids Package and the anticipated Strategic Roadmap on AI and Digitalisation must coherently promote increased investment in digital electricity infrastructure. Accelerated digitalisation is essential to managing the growing complexity of energy transition. It enhances transparency, optimises operations, improves asset utilisation, and supports renewable integration through smart technologies, advanced planning tools, and grid indicators. To empower Europe's grids to accelerate and deliver on the energy transition, grid-enhancing technologies such as digital substations and dynamic

line rating play a crucial role. Both can increase capacity by 20-40%, thereby fast-tracking the EU's grid efficiency and climate goals.

Digitalisation also enables the deployment of artificial intelligence and generative AI applications, enhances local flexibility, and facilitates variable grid tariffs, making it a cornerstone of an intelligent and competitive European grid. Furthermore, it enables closer links between different grid areas, empowering greater distributed control and more efficient integration of distributed resources, such as power plants and end-user flexibility, thereby increasing the overall resilience of the electricity system.

In addition, digital solutions, such as software, gateways, SCADA systems, and cloud services, should be developed in accordance with existing data models standards on interoperability to avoid incompatibility across the sector.

Digitalisation of planning processes between regulators, utilities and manufactures will save time, reduce errors, and enable faster implementation of new grid assets. Using a Digital Product Passport (DPP) that covers all asset information, with agreed ontologies and data spaces, will help enable an all-electric society.

T&D Europe calls for: The rapid roll-out of interoperable digital and smart grid solutions to optimise grid operations, enable flexibility, and strengthen the resilience of the European power system. Furthermore, OPEX-based digital innovation must be recognised and incentivised.

- Enforce robust cybersecurity requirements for equipment manufacturers:** While security requirements for grid devices placed on the market are largely covered by the Cyber Resilience Act (CRA), including secure development lifecycle principles, the real emerging cyber risk lies in the ability to remotely control large quantities of grid-connected devices from a central location managed by their manufacturers. Moreover, the EU needs to insist on reciprocity by granting access to grid-connected devices only to manufacturers from non-EU countries that allow foreigners having access to grid-connected assets.

T&D Europe calls for: Reciprocity and the introduction of robust cybersecurity measures – equivalent to CRA requirements - for grid-connected devices with the capability to remotely control large volumes of equipment dealing with an aggregated power capacity exceeding 250 MW, and operating platforms not currently subject to EU cybersecurity legislation.

3. Industrialisation

- **Long-term framework agreements:** Planning needs to be backed by reliable commitments from governments, regulators, and customers. Member States and network operators should provide predictable demand signals through long-term instruments, such as framework contracts including quantitative commitments, to give investors and industry the certainty needed to expand capacity and secure resilient supply chains.

T&D Europe calls for: The Grids Package should enable and facilitate the conclusion of long-term framework agreements with suppliers.

- **Financing, manufacturing and investor certainty:** Transmission system plans provide greater visibility than distribution plans, but visibility alone is not sufficient. Grid development faces investment risks, and remuneration frameworks for TSOs and DSOs remain unclear. This uncertainty slows down the expansion of networks, both physically and through digital solutions such as distributed control, software, and algorithms. To enable private investors to take viable decisions, dedicated financial instruments and regulatory clarity are essential.

T&D Europe calls for:

- i. The establishment of dedicated financial instruments and clear remuneration frameworks for both transmission and distribution grids, ensuring visibility for TSOs, DSOs, and investors
- ii. A common definition of anticipatory investment, ensuring forward-looking investments are properly recognised and supported across regulatory frameworks

- iii. The inclusion of this financing direction in the Multiannual Financial Framework (MFF) to secure long-term EU budget support for grid development
- **Strengthen European manufacturing of critical grid technologies, safeguarding supply chains, and ensuring fair trade conditions:** Security of supply depends not only on energy flows but also on maintaining and expanding Europe's manufacturing base for critical net-zero transmission and distribution technologies by ensuring that Europe remains an attractive investment destination. Enhancing and reinforcing this capacity is essential for Europe's resilience.

Not only should administrative procedures be streamlined, but Europe must go a step further by establishing a fast, transparent and reliable permitting process that is harmonised across all Member States. Such consistency would make Europe more attractive for industrial investment aligned with its electrification and net zero ambitions. For example, the creation of single points of contact, as referenced in the NZIA, could serve as an effective gateway to facilitate and accelerate industrial development.

At the same time, measures such as the CBAM or steel safeguards must be carefully designed to avoid weakening European manufacturers or giving an advantage to non-European competitors. A balanced approach should secure supply chains, expand domestic capacity, and preserve fair trade conditions.

T&D Europe calls for: Further strengthening of European manufacturing capacity for critical grid technologies as part of security of supply, while ensuring that trade measures do not undermine competitiveness or favour non-European players.

- **Apply ROI-linked KPIs for grid investments:** In the race to accelerate the energy transition, profitability, i.e. Return On Investment (ROI), must not be overlooked, particularly in the context of public investment. Investments must deliver expanded capacity to connect more renewable energy, to electrify more industries, to connect more data centres, and private consumers wanting to electrify their home and drive an electric vehicle. Clear Key Performance

Indicators (KPIs) should be established, with corresponding incentives and penalties, to prevent an erosion of the support for the energy transition from industry and citizens.

T&D Europe calls for: The definition and systematic application to all relevant investment frameworks of KPIs, such as:

- i. Reduction of renewable curtailment
 - ii. Improved grid stability with higher renewable energy penetration
 - iii. Reduction of energy price volatility
 - iv. Shorter connection time for electrified stakeholders (e.g. renewable generators, industries, data centres, EV infrastructure)
 - v. Smart Grid Indicators (SGI) demonstrating grid digitalisation and efficiency
 - vi. Satisfaction with and timeliness of flexibility investments
- **Grid mainstreaming:** A stable policy framework is a prerequisite of a resilient and competitive European grid sector. Policymakers need to avoid introducing new measures that negatively impact the competitiveness of the transmission and distribution industry in Europe. While the Net-Zero Industry Act, the Clean Industrial State Aid Framework, and EIB's Grid Manufacturing facility are supportive, the inclusion of critical inputs, such as grain oriented electrical steel in the CBAM, as well as certain support measures for the European steel industry, are increasing uncertainty and cost for EU-based manufacturers.

For manufacturing, it is also essential that the product requirements and specifications remain stable and do not change in a way that requires re-design or re-formulation. For example, the EU should reconsider a blanket restriction of all PFAS in favour of a more differentiated regulation approach that takes into account the specific risks, availability of substitute materials, and the benefits of different PFAS substances and uses. Many PFAS substances are essential to guarantee the electrical safety and performance of the equipment ensuring electricity supply across Europe.

To avoid unintended consequences of other EU policies for the EU grid sector, it is vital to mainstream the grid by systematically assessing the impact of EU

industrial, trade, climate, energy and environmental policy proposals on the grid sector and its supply chain.

T&D Europe calls for: The launch of a Strategic Dialogue between the Commission and the transmission and distribution technology sector to discuss, inter alia, the creation of *the European Supply Chain Council for the Clean Electricity Technology Sector* — a periodic forum bringing together all relevant Commission Directorates-General and representatives of the transmission and distribution technology industry to assess and discuss the impact of existing, proposed, and upcoming policies. Such a Supply Chain Council could be organised as part of the Net-Zero Europe Platform.

Europe's T&D sector is delivering on its commitments

Following the release of the EU Grid Action Plan, T&D Europe made clear commitments and has been delivering on them. T&D Europe members have:

- Increased manufacturing capacity in Europe to meet growing demand. A survey of public announcements of T&D Europe's 11 corporate members over the past 12 months shows total investment exceeding €9 billion in expanding global manufacturing capacity.
- Worked closely with TSOs, DSOs and other European technology providers to explore streamlining and simplification of tendering processes and identify possible common practices and functional specifications.
- Led the work of the Clean Electricity System Alliance in the High-Level Forum on European Standardisation to ensure consistency across Europe and identify standardisation gaps.
- Collaborated with EU stakeholders to improve skills curricula at different education levels to increase the number of qualified workers in grid technologies, as well as to develop reskilling programmes for diverse industries.

We remain committed to:

- Scaling up EU manufacturing capacity for transmission and distribution grid infrastructure assets
- Modernising and simplifying the tendering process for electricity grid technologies is essential, as it remains too complex and not designed for industrialised production at the scale required. In particular, this could include exploring the potential of harmonised specifications, which could contribute to enhancing efficiency, ensuring interoperability, and supporting the rapid deployment of grid infrastructure across Europe.
- Exploring with transmission system operators the possibilities of developing and applying functional specifications for interoperable offshore HVDC systems in grid tenders, to achieve economies of scale and reduce project costs without hampering innovation or competition.
- Contributing to the update and further development of the ENTSO-E and EU DSO Entity Technopedias, particularly on the technology readiness levels of transmission and distribution technologies

We look forward with great expectation to the publication of the Grids Package. We trust that the major challenges Europe currently faces will be met with bold ambition from the European Commission. Europe must support Europe-based manufacturers and software developers in strengthening domestic production of strategic grid technologies. T&D Europe stands ready to support the Commission in delivering this ambition.