

EUROPEAN GRIDS PACKAGE

AMPRION'S POSITION

INTRODUCTION

For more than a decade, the Trans-European Networks for Energy (TEN-E) Regulation (2013) has guided the identification and development of cross-border energy infrastructure, which is essential for Europe's clean energy transition. However, the scale and urgency of electrification now require a renewed policy push. Against this backdrop, the European Commission intends to present a European Grids Package by the end of 2025.

Based on the 2023 Grid Action Plan and forming part of the Clean Industrial Deal and the Competitiveness Compass, the European Grids Package is expected to include legislative measures that will simplify regulatory procedures, improve cross-sector coordination and strengthen network planning. Such reforms are essential to prevent delays to grid connections, reduce renewable energy curtailment caused by bottlenecks and ensure that Europe remains on track to meet its climate and competitiveness goals. This initiative also responds to the broader competitiveness debate highlighted in the Draghi report, particularly the recommendation to stimulate investment and reduce administrative barriers for strategic infrastructure.

Amprion welcomes the announcement of the European Grids Package in the Action Plan for Affordable Energy and is contributing its expertise as a German transmission system operator (TSO) on the framework required to deliver the next generation of European grid infrastructure.

EXECUTIVE SUMMARY

The current framework of the grid planning is a good base for the next years. The National Development Plans (NDPs) and Ten-Year Development Plans (TYNDP) complement themselves to complete the objectives of interconnection. Further improvement should be introduced, such as a better-interlinked model able to deal with an improved cross-sectoral planning, timings of the NDPs and TYNDP should also trend to the same year of analysis.

In terms of cost sharing, the process should be revised as the current one is not fit for purpose. It should be voluntary, regionally driven, politically supported and decoupled from CEF funding.

Simplification should also be at the heart of the new legislation. For example, permitting processes should be revised to assess the added value of each study performed to avoid delay. In the PCI process, some streamlining could also be introduced.

Generally, any further changes to the EU electricity market design must await the full implementation of recent reforms. Market rules must ensure the secure operation of the transmission system, which is the core responsibility of TSOs, while supporting the development of national and European networks in order to meet climate and energy policy objectives. Interconnections are essential for enhancing integration and supply security.

The EU framework must provide better support for the scale of investment required by TSOs, while ensuring affordability for consumers. The EU already provides a solid basis for system security through harmonised operational rules, adequacy assessments such as the ERAA and coordinated risk preparedness under ENTSO-E. However, fragmentation persists in terms of security of supply, infrastructure protection and cybersecurity. In order to strengthen resilience, the EU must address cyber-physical interdependencies more effectively and enable joint cross-border planning for protection, incident response and investment prioritisation, particularly for vulnerable assets such as interconnectors and subsea cables. Resilience must be integrated into all infrastructure projects from the earliest stages.

Key priorities:

- The TYNDP process should be improved with a better-interlinked model and alignment of timings.
- Cost-sharing processes must become voluntary, regionally driven, politically supported and decoupled from CEF funding.
- Preserve stable credit ratings by allowing balanced equity/debt financing and instruments such as hybrid bonds.
- Simplify permitting and accelerate project implementation.
- PCI/PMI processes must be simplified, aligned with TYNDP cycles and expanded to include digitalisation and resilience measures.
- Strengthening EU resilience by addressing cyber-physical risks and integrating protection by design.

EU-LEVEL PLANNING AND SCENARIOS

Currently, the Ten-Year Network Development Plan (TYNDP) does not fully integrate National Development Plans (NDPs). Stronger synchronisation and harmonisation are necessary, particularly with regard to time horizons, target years, the frequency with which information is provided and the consistency of scenarios. This would enable the NDPs to be developed in a consistent manner alongside the TYNDP, thereby reducing inconsistencies. One practical and efficient way forward could be a biennial scheme in which the TYNDP considers alternating NDPs.

Identification of needs should take place across the entire energy system, encompassing both hydrogen and electricity infrastructures, as well as flexibility providers. In order to compare projects across sectors, it is indispensable to have a harmonised and holistic cost-benefit analysis (CBA) framework for system-wide indicators. A multi-sector CBA methodology embedded in an integrated modelling framework would provide such comparability. At the same time, sector-specific indicators with no cross-sectoral impact should remain within a single-sector CBA methodology. Importantly, projects planned at the national level must serve national and European objectives.

Scenario building should also incorporate adaptive strategies to allow flexible decision-making in the face of uncertainties and disruptions. Identifying multiple development pathways and tipping points would strengthen resilience and crisis preparedness while ensuring robustness across a range of possible outcomes.

Amprion believes that the two-year cycle for TYNDP updates strikes the right balance: it reflects the dynamics of the energy transition while allowing sufficient time for robust, interconnected modelling. To improve efficiency, synergies must be identified between scenario building and other TYNDP components, particularly with regard to input data and modelling approaches. There should also be methodological alignment between TYNDP outputs and other ENTSO-E products, such as the European Resource Adequacy Assessment (ERAA).

Finally, a new TYNDP project category should be introduced to encompass measures that augment existing grids, such as digitalisation, climate resilience and cybersecurity. Stakeholders have expressed a strong desire to see these aspects represented, as they are essential for ensuring the grid is fit for the future.

The determination and awarding of hosting capacities shall remain at the discretion of national level due to diverging regulatory frameworks and grid planning competences. Improving transparency at European level by monitoring the hosting capacities should be foreseen where applicable. But generally, the first come, first served principle should be revised. German TSOs are presently developing a first ready, first served principle.

Policy recommendations:

- Synchronise and harmonise NDPs and TYNDP with respect to time horizons, target years, frequency and scenarios.
- Maintain a two-year TYNDP cycle as the right balance between timeliness and modelling depth. Alternate TYNDP with alternating NDPs to improve coherence.
- Improve the multi-sector CBA framework within an integrated modelling environment.
- Complement scenario building with adaptive strategies to strengthen resilience and crisis preparedness.
- Identify methodological synergies between TYNDP and other ENTSO-E products such as ERAA.
- Revise the first come, first served principle with a first ready, first served principle.

SIMPLIFICATION: PCI/PMI AND TYNDP EFFICIENCY

The PCI and PMI processes are resource-intensive and are often not aligned with other planning instruments. Amprion proposes aligning the PCI/PMI process with the TYNDP by finalising the latter in one year and starting the former the next.

Projects that are already under construction should be able to retain their PCI/PMI status without having to reapply. Monitoring should be limited to material changes. The efficiency of the TYNDP process must also be improved by exploiting synergies between scenario building, identifying infrastructure gaps and assessing projects.

Amprion also proposes introducing a new TYNDP category for measures that enhance existing grids, such as digitalisation, climate resilience and cybersecurity, even where no CBA is required.

Policy recommendations:

- Align PCI/PMI timing with TYNDP cycles.
- Maintain PCI/PMI status for projects under construction without reapplication.
- Limit monitoring to material changes rather than annual questionnaires.
- Improve TYNDP efficiency through methodological synergies.
- Introduce a new TYNDP category for digitalisation, resilience and cybersecurity measures.

STREAMLINE PERMITTING

Permitting remains a key bottleneck in the timely delivery of grid infrastructure projects. To accelerate the energy transition, environmental assessments must be simplified and streamlined. Standardised measures and protections that extend beyond individual projects could reduce duplication and improve efficiency. Shifting from an individual-based to a population-based approach to species protection could generate significant time savings while maintaining environmental safeguards.

Currently, projects must undergo numerous assessments to comply with legal obligations. In several cases, such as under the Water Framework Directive or the Marine Strategy Framework Directive, the required expert reports often serve as mere formalities, adding little real value. Streamlining these requirements would improve efficiency and the use of resources, but this would require targeted adjustments to the European legal framework. Derogations should be introduced from Articles 4 of the Water Framework Directive, 1 and 5 of the Marine Strategy Framework Directive, and from the forthcoming Soil Monitoring Law for grid projects, within the framework of Article 15e of the Renewable Energy Directive (RED III).

Legal certainty must be preserved. Where EU law simplifies compliance, as with RED III, it must be clarified that projects that fulfil these requirements and hold valid permits cannot be held liable under the Environmental Liability Directive. Without this clarification, the intended acceleration could be undermined by increased legal uncertainty.

Data availability is another key enabler. Sharing environmental, geological and technical data can significantly improve the efficiency of planning and permitting, provided that confidentiality rights and legitimate interests are respected. Existing databases should be used more effectively to provide up-to-date information and optimise project preparation.

In Germany, one-stop shops for full approval procedures have already been widely implemented. Additional measures should not duplicate existing systems or create new uncertainties. More generally, while measures to accelerate planning are important, frequent changes to the legal framework often generate legal risks and longer approval times. Given the significant acceleration steps already taken in recent years, only moderate further changes are necessary in Germany in the near future.

Policy recommendations:

- Simplify environmental assessments, including a shift from individual- to population-based species protection.
- Streamline requirements where assessments add little value (e.g. WFD, MSFD).
- Introduce targeted derogations for grid projects under RED III (WFD, MSFD, Soil Monitoring Law).
- Clarify that compliance with RED III and valid permits excludes liability under the Environmental Liability Directive.
- Ensure availability and sharing of environmental, geological and technical data, respecting confidentiality.
- Maintain existing one-stop shops in Germany; avoid redundant or destabilising reforms.
- Prioritise legal certainty by avoiding frequent regulatory changes that increase risks.

FINANCING AND COST SHARING

Different cost-sharing mechanisms address different types of costs and time frames. Inter-TSO Compensation (ITC), for example, focuses on ex post operational costs for transit flows over existing infrastructure, ensuring that the costs of making networks available for cross-border flows are shared. In contrast, the Cross-Border Cost Allocation (CBCA) mechanism addresses ex ante investment costs (capex) for future cross-border infrastructure projects, dealing with assets and long-term capital expenditure. Finally, congestion income is collected on cross-border exchanges and will be reinvested to solve the cross-border bottlenecks.

Amprion recommends a cost-sharing approach guided by transparency, voluntary participation and regional cooperation. Clear benefits for all participating countries must be demonstrated early in the planning process to enable inclusion in national planning frameworks. Decisions should be based on net benefits, using common methodologies, scenarios and data. However, it should be recognised that some large-scale projects require political decision-making that goes beyond technical TSO assessments. Regional initiatives such as OTC and BOGI could serve as effective facilitators. Non-coastal member states should be able to contribute to offshore projects on a voluntary basis if they will benefit, supported by transparent cross-border cost-sharing assessments.

For offshore hybrid projects, the cost-sharing agreement must distinguish between infrastructure costs and generation costs. While infrastructure provides priced and unpriced benefits, generation revenues stem from market prices and support schemes. Revenues from exported electricity can serve as an appropriate cost-sharing key for generation. Whether settlements should be based on ex ante forecasts or ex post adjustments is a political decision: ex ante forecasts provide predictability, while settlements offer accuracy. Where reopeners are applied, predefined triggers and thresholds are necessary to preserve investor certainty and budget visibility.

Due to the significant financial burdens involved, the regulatory framework must remain attractive to investors and offer a diverse range of tools, given that ownership structures and financing conditions vary among TSOs. Finally, EU-level cooperation targets, such as the North Seas Energy Cooperation's ambition to generate 100 GW of electricity, can incentivise member states to cooperate beyond their national renewable energy needs.

Policy recommendations:

- Ensure cost sharing is voluntary, benefit-based and supported politically at regional level.
- Engage potential contributing countries early to align with national planning and highlight mutual benefits.
- Base cost-sharing keys on net benefits, common methodologies and agreed data.
- Enable regional initiatives (e.g. OTC, BOGI) as facilitators for voluntary cooperation.
- Allow voluntary contributions from non-coastal countries, supported by transparent cost-sharing assessments.
- Treat infrastructure and generation cost sharing separately for offshore hybrid projects; use export revenues as sharing key for generation.
- Define clear thresholds and triggers for reopeners to balance predictability and accuracy.
- Provide a flexible financing toolbox to accommodate different TSO ownership and financial structures.
- Introduce EU-level cooperation targets (e.g. NSEC 100 GW) into NECPs to incentivise cross-border collaboration.

FINANCING AND REGULATORY RISK

The scale of investment required for the European energy transition demands a robust and predictable financing framework. The current EU legal framework must be improved to support these investment needs more effectively, while ensuring affordability for consumers. The share of the EU's long-term budget (MFF) dedicated to Projects of Common Interest (PCIs) and Projects of Mutual Interest (PMIs) must increase.

In order to mobilise sufficient private and institutional capital, measures must be taken to reduce investment risk and facilitate access to financing for European TSOs. A key requirement is providing adequate and predictable returns on equity that align with financial market conditions. Where regulated returns are too low, access to additional equity is limited, which undermines TSOs' ability to finance large-scale projects.

Regulation should enable TSOs to use the full range of financial instruments available to reduce financial burdens and lower capital expenditure, including hybrid bonds. Financing must be secured through a balanced mix of equity and debt in order to maintain acceptable credit ratings. Preserving creditworthiness is crucial because deteriorating ratings immediately increase financing costs and reduce access to capital markets, which threatens the timely implementation of infrastructure projects.

The regulated rate of return varies between member states. In Germany, for example, TSOs have comparatively limited yields, which puts them at a structural disadvantage when seeking new capital. This disparity must be considered in discussions on regional financial instruments. National Regulatory Authorities (NRAs) should therefore be fully involved in shaping financing frameworks to ensure that solutions remain effective in different national contexts.

Guarantees can also play a key role in de-risking investments and lowering the cost of debt by reducing interest rates. Strengthened EU budgetary support, adequate returns, diverse financing instruments and effective guarantees, when combined, will provide TSOs with the stable conditions needed to deliver critical grid projects.

Policy recommendations:

- Increase the share of the EU long-term budget (MFF) allocated to PCIs and PMIs.
- Provide predictable and adequate regulated returns on equity to ensure access to capital.
- Enable TSOs to use all appropriate financing instruments, including hybrid bonds.
- Secure investments through a balanced equity/debt mix to maintain strong credit ratings.
- Recognise differences in regulated returns across member states, particularly the limited yields of German TSOs.
- Fully involve NRAs in the design of regional financing instruments.
- Promote the use of guarantees to de-risk investments and reduce the cost of debt.

ENERGY SECURITY AND RESILIENCE

A solid framework is already in place for the protection of national critical infrastructure. However, the EU-wide resilience perspective is less clearly defined. Where it is addressed, the requirements are often fragmented or not sufficiently aligned across areas such as cybersecurity and environmental protection. Rather than creating an entirely new EU legal framework, the priority should be to ensure the effective implementation of the existing framework and to strengthen cooperation at EU level, for example through union or regional stress tests and coordinated resilience measures.

Recent European directives (NIS2, NCCS and CER) represent progress in improving cybersecurity and physical protection; however, they still fail to fully address the growing interdependencies between cyber and physical systems. At the same time, security of supply must consider more than just cybersecurity or physical protection. It also requires clear operational rules to allow safe transmission system operation, which is a prerequisite for a well-functioning internal electricity market.

Policy recommendations:

- Focus on implementing and enforcing existing EU frameworks, rather than creating new ones, while enhancing cooperation at EU level (e.g. union/regional stress testing).
- Strengthen resilience measures in the NIS2, NCCS and CER directives to address interdependencies in cyber-physical systems.
- Ensure that security of supply rules go beyond cybersecurity and physical protection, supporting safe TSO operation and a well-functioning electricity market.
- Integrate resilience by design into all infrastructure projects from the earliest stages of planning.

FLEXIBILITY

Flexibility is an essential element of a cost-efficient transition. Demand response and innovative grid technologies must be considered as alternatives to costly grid expansion. The existing EU framework already provides a basis for integrating flexibility, but effective implementation is urgently needed.

Policy recommendations:

- Integrate flexibility as a genuine alternative to grid expansion.
- Promote demand response and innovative grid technologies.
- Ensure effective implementation of the existing EU framework on flexibility.