

# Energy efficiency legal framework post-2030

*Call for evidence*

Electricity grids are a central component of EU competitiveness. They are crucial to enable the mass uptake of renewables, support the electrification of end uses, and meet the 90% reduction of greenhouse gases by 2040. Due to the challenges related to rapid grid expansion, it is important to consider measures to do this as (cost-)efficiently as possible, as has already been stated in the Affordable Energy Action Plan.

The Energy Efficiency Directive (EED) places energy efficiency at the core of the Union's energy policy, notably through the Energy Efficiency First Principle. With regards to electricity grids, this principle requires that cost-effective energy solutions are systematically considered before investing in new energy infrastructure.

In order to fully comply with the Energy Efficiency First Principle, it is therefore important to consider technologies that optimize the use of the existing grid (such as Dynamic Line Rating, Advanced Power flow Control, Advanced Line Coatings, Advanced Sensors, Grid Inertia Measurement Devices, Voltage Regulators, Digital Twins, Network Optimization tools etc.), and build new grids as efficiently as possible (using Advanced Conductors, Superconductors, Advanced digital planning tools, etc.).

This is why the new Energy Efficiency post-2030 legal framework should include the formal implementation of the NOVA principle for all electricity grid infrastructure, ensuring that optimisation of the existing network is prioritized where possible, reconductoring existing lines is prioritized where possible, and when building new lines, that the best available technologies are systematically evaluated and deployed.

While recent revisions to the EED have already strengthened the legal basis for the Energy Efficiency First Principle, gaps remain that could hinder the cost-effective transition of our energy systems post-2030. For example, the application of this principle should not be restricted by high capital thresholds. Specifically, the provision that limits consideration to large-scale investments exceeding €150 million risks overlooking smaller and fast-to-deploy innovative solutions that provide significant system-level benefits.

Furthermore, the current reliance on non-binding provisions for energy efficiency measures allows National Regulatory Authorities the option to provide guidance rather

than requirements. This fails to ensure that Member States provide the necessary incentives for TSOs and DSOs to prioritize efficiency. To ensure the EU grid is fit for purpose, the post-2030 framework must evolve to a more holistic approach to system efficiency. We recommend that annual losses become part of the regulated cost base that operators must manage and improve just like other operational expenses. According to the 3rd CEER Report on Power Losses, system operators should be given clear incentives to reduce power losses instead of just being allowed to pass the cost to consumers.

Beyond operational costs, the Commission's proposal should address the fact that, when investing in network components, most countries do not require grid operators to consider the capitalized value of losses, consisting of the total cost of energy wasted over a component's entire lifespan, calculated as a single upfront. If this were to be considered by grid operators, this would justify investing in more efficient equipment. Integrating the long-term value of energy savings into investment appraisals, as seen in the Irish and Spanish models, is therefore essential to support our energy efficiency targets.

In summary, gaps remain that could limit the EU's ability to fully optimize electricity grids post-2030. Addressing these gaps requires moving beyond large-scale investments. Incorporating innovative solutions and systematically evaluating the best available technologies will be essential to align grid expansion with decarbonization and energy efficiency objectives.