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Delivering on electricity grids

currENT recommendations for the European Commission

CURRENT
Enabling Network Technology throughout Europe

It is universally agreed that timely grid development has become the largest stumbling block to Europe's energy transition. Business as usual will not get us to net-zero or energy independence. The presumption that grid technology does not need further innovation is wrong. Europe must become much better at supporting and demonstrating grid technology innovation and at deploying those innovative grid technologies that are already commercially available.

Europe must recognise the short- and long-term efficiency gains, economic gains, environmental effects, and commercial opportunities of providing incentives to test and scale up innovative grid technologies. Grid Enhancing Technologies, such as Dynamic Line Rating, Modular Power Flow Control Systems, new sensor technologies, as well as storage technology, Advanced Conductors and superconducting grid technologies, can rapidly and cost competitively address Europe's energy and climate challenges.

Less obtrusive and environmentally friendly transmission technology, with increased transfer capacity, can unlock the current transmission backlog. All pathways to meet Europe's agreed 2050 decarbonisation target, would imply a 2040 energy system largely dependent on a fully decarbonised electricity supply. For such an energy system to materialise, Europe must start planning, demonstrating, and deploying innovative grid enhancing technologies and advanced power cable technology. It would be prudent of Europe to provide rapid and meaningful support to those innovative technologies**.** The International Energy Agency has already established that almost half of the 2050 reductions in greenhouse gasses must come from technologies that are currently at the demonstration or prototype phase.

The following measures would be a big step in the right direction in ensuring Europe delivers on the electricity grids needed for Net-Zero.

1. **Avoid 'death by pilot' – Issue guidance to NRAs** on how to incentivize the meaningful mass deployment of commercially available grid-enhancing technologies. There need to be incentives to scale-up innovative grid technologies much more quickly. Pilot deployments without a process and timeline to be in mainstream use en masse will remain a marginal technology, regardless of whether they are economically, technically, and environmentally superior. While the Commission has already taken steps towards overcoming the CAPEX bias in the proposed revision of the Electricity Market Design, further guidance on implementation needs to be given to NRAs.

2. **Measure and set specific targets for adding grid capacity**. Europe needs to measure how fast grid capacity is being added on an annual basis, and if this is keeping pace with what is needed to meet Europe's decarbonisation and energy independence objectives. SMART (specific, measurable, achievable, relevant, time-bound) goals for grid technology are needed – e.g. a certain amount of additional capacity and/or grid enhancing technology deployed within the next 18 months. At this point, Europe needs to take the conservatism out of planning grids – a step change is needed.

3. **A significant amount of innovation funding needs to go toward electricity grids**. Since 2020, 74% of the total funding of €3.1 billion spent under the EU ETS Innovation Fund, has gone to

hydrogen (24%) and Carbon Capture and Storage (50%). Only 18% has gone to renewables and storage and 8% to other technologies including efficiency. The EU's flagship innovation vehicle must become increasingly focused on innovative grid technologies.

4. **Don't turn sandboxes into sand traps.** Regulatory and technical sandboxes will be needed to ensure that safe and reliable technology can be proven as proposed by the Commission's Net Zero Industry Act. Specifically for Innovative Grid Technologies, a mechanism is needed to secure positive engagement from TSOs and DSOs. Moreover, Member States must ensure participation of relevant national bodies, notably TSOs and DSOs, in overcoming any technical or administrative barriers to establishing the net-zero sandboxes.

5. **Provide a guarantee for the perceived risk of performance of innovative technologies.** While the risk of inadequate performance of mature innovative technologies is minimal, this is still perceived by some to be a risk of stranding assets. If the EIB can provide guarantees for the duration of the payback period of these innovative technologies (typically much faster than conventional technology), this would mitigate any due diligence concerns in implementing newer grid technologies by stakeholders. Ringfencing specific funds for innovative grid technologies would also be a significant support.