POLICY INPUT

Climate proof recommendations for the revision of the security of supply framework

Climate Action Network (CAN) Europe is Europe's leading NGO coalition fighting dangerous climate change. With over 200 member organisations active in 40 European countries, representing over 1,700 NGOs and more than 40 million citizens, CAN Europe promotes sustainable climate, energy and development policies throughout Europe.

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The European Commission's ongoing Energy Security Fitness Check revising the Security of Gas Supply Regulation and the Electricity Risk Preparedness Regulation presents a unique opportunity to address the dual challenge of ensuring energy security and speeding up the transition to a more integrated, resilient, and cost-effective energy system. By incorporating measures that enhance gas and electricity integration, promote energy savings, flexible (non-fossil) storage solutions, and expand EU-wide grid interconnections, these revisions can deliver long-term economic and societal benefits, increasing EU's resilience against external shocks, while reducing dependence on volatile fossil fuel markets.

We present here our key recommendations to maximise the benefits of the revision of the EU's energy security architecture:

1. Continuation of Gas Demand Saving measures with the dual objective of boosting energy savings and phasing out fossil gas

Structural energy efficiency and energy savings measures leading to energy demand reduction are strategically important for energy security on regional, national and EU-level. Energy savings and renewables deployment ensure a reduction of fossil fuel imports beneficial for the EU's competitiveness. Energy savings also reduce supply interruptions and help optimise the need for storage, distribution and transmission infrastructure crucial for the EU's transition to a 100% renewable energy system.

During the energy crisis in 2022, the European Union has agreed on measures under Regulation 2022/1369 to lower its reliance on Russian fossil fuels. In just over a year, those measures led to a 18%+ gas demand savings across EU Member States, overachieving on the targeted 15%.

Building on the success of this Regulation, **mandatory gas-saving targets with long lasting structural effects** should be introduced in the revision to ensure continuity and relieve people and companies from very high energy prices linked to volatile gas prices, still on the rise. The **Security of Supply (SoS) review**, should contribute to a structured phase-out of fossil gas by 2035 that the EU needs to plan for and the following points should be included:

- Make the Council's Regulation 2022/1369 binding and decouple it from crisis situations. Focus on developing structural energy savings measures contributing to national energy efficiency targets in line with the EU 2030 (and any future) energy efficiency target. Ensure that measures do not exacerbate energy poverty while prioritising energy efficiency measures for people living in energy poverty.

- Include EU Pathways for Gas Savings with binding 5 year plans for 2025, 2030 and 2035 including dedicated sectoral phase out plans for buildings, industry and power.

- Member States develop Gas Exit Roadmaps in National Energy & Climate Plans (NECPs) including sectoral gas phase-out plans, in line with the EU's 2030 and 2040 climate targets and aligning to 5 year steps.

- Cut methane emissions: by setting a binding target to reduce methane emissions by 75% or higher by 2030 so as to ensure the EU captures the social and environmental benefits. Member States should implement national methane reduction targets as part of their integrated NECPs.

2. Incentives for Flexible Storage Measures and Infrastructure Integration

The infrastructure fit for a fully renewables based, flexible, and efficient energy system will need to further expand and interconnect power transmission grids while also accelerating deployment of different types of storage that balance flexible renewable energy generation. These are two key components for a successful rollout of the energy transition to avoid grid bottlenecks and costly curtailment, as underscored in EU's Grid Action Plan, but also to increase the EU's competitiveness and develop a strong homegrown EU industry base. Although the bi-annual Pan-European Ten-Year Network Development Plan (TYNDP) already proposes storage and transmission projects, a much faster deployment rate is needed. The SoS review should build on the Electricity Market Design recommendations, such as 1) flexibility assessments, objectives, and support schemes, 2) energy sharing, 3) DSO flexibility procurement, and 4) storage as fully integrated network components, to further develop **a legal and financial (State Aid review for example) framework for alternative storage solutions to fossil gas** such as the following examples of existing storage and flexibility mechanisms:

- **Batteries:** German TSOs TenneT, TransnetBW, and Ampirion have all opted for "Grid Boosters", large battery projects to increase the utilisation of existing transmission lines, increase electricity supply from renewables, and protect against blackouts. Belgium's Capacity Remuneration Mechanism (CRM) is supporting 1.1GW of batteries to stabilize grids, secure supply, and support renewable integration.

- **Demand-Side Management (DSM)**: Initiatives like Flexcity in Belgium optimize energy use by shifting demand to periods of high renewable generation. Slovenian DSO pays consumers directly to turn down consumption in periods of undersupply to ensure energy security.

- **Renewable Hydrogen Storage:** Projects like North H2 enhance seasonal storage capabilities, advancing energy system design with variable renewable energy sources.

- **Thermal Energy Storage:** EIB-financed Sun2Store project in Spain will use pumped heat and molten salt to store renewable energy, able to provide the grid 100 MW of electricity for 10 hours.

- **Thermal Storage + Vehicle-to-Grid (V2G):** Technologies like V2G systems and district heat pumps can act as distributed storage, contributing to grid flexibility and resilience. Heat pumps produce heat in a 3:1 ratio. As electric vehicles become more common, V2G allows EVs to discharge their batteries to the grid.

- **Compressed air energy storage (CAES):** is a way to store energy for later use, at a time when required, by using compressed air. TYNDP 2022 already lists 6 CAES projects.

The SoS review should also further integrate Grid Expansion and Interconnection Targets

- **Implementing the EU interconnection target of at least 15% by 2030**, focusing on cross-border infrastructure to ensure energy flow between regions with surplus and deficit capacities.

- **Prioritizing investment into vulnerable regions and for vulnerable groups** to prevent energy poverty and ensure equitable access to clean energy technologies like heat pumps and rooftop solar.

- **Maximising the use of existing electricity infrastructure**: National Grid in the UK is using Advanced Power Flow Control to increase existing grid capacity by 2GW without the time needed to build new lines and saving £390 million over 7 years. Belgium is using Dynamic Line Rating allowing for existing cables to transport more electricity during colder weather, enhancing security of supply in the winter.

- The **N-1 standard** requires transmission system operators to maintain adequate infrastructure, including reverse flow capabilities, to enhance system flexibility and interconnectivity. This standard needs to be tackled differently for gas and electricity. **While it is important to ensure back up in the event of a failure of electricity supply infrastructure, the security of supply needs to be approached differently for gas infrastructure.** As the gas grid will be built back because of shrinking volumes of gas in the energy mix, unnecessary costs through stranded assets, and outdated backup logic have to be avoided. The N-1 principle for gas should be reviewed in conjunction with phase out plans for gas across Member States (see point 1) and the buildup of electricity grid infrastructure and grids for renewable hydrogen in priority sectors only.

3. Regional Cooperation for Integrated Planning and Governance

Siloed long term planning and governance problems are the main bottlenecks for integrated infrastructure planning between Member States and for the different energy carriers (electricity, gas and hydrogen grids). Most EU countries continue to inefficiently plan for infrastructure, and inadequately address 100% renewable energy system principles. As the first step in the right direction, the gas package has introduced provisions for more integrated planning between hydrogen, gas and electricity networks. However, governance problems still lead to conflict of interest, responsible for producing biased outcomes. The Ten Year Network Planning process (TYNDP), which is guiding European long-term energy infrastructure planning, needs to be based on energy scenarios modelling gas phase-out, priority uses of hydrogen and phase-in of renewable electricity and heat.

Remaining limitations in electricity market design, Electricity Market Design Directive (2024), lead to high electricity price differences between regions, countries and price zones. Increased cross-border and regional collaboration within the EU, would alleviate security of supply concerns that are nation-centric. The Security of Supply Review should ensure that :

- **Security of Supply and integrated risk and TYNDP planning:** TYNDP infrastructure planning, and its underlying evidence basis, needs to take into account increasing electrification rates at accelerated pace (50-60% of final energy demand as projected by the Commission's Impact Assessment for the European Climate Law) or almost 70% according to CAN Europe's PAC scenario.

- **Reform the composition of the Gas and Electricity Coordination Groups**: Ensure that electricity network and flexibility storage representatives are adequately represented in those groups. Stakeholders involved in infrastructure and risk preparedness planning need to reflect high electrification rates i.e. electricity TSOs and DSOs, flexibility and storage partners, should be adequately represented. In addition, advice from independent stakeholders, such as the European Scientific Advisory Board for Climate Change (ESABCC), and their reviews of the TYNDP planning cycle, should be prioritised.

- Member States must develop **integrated Risk-Preparedness Plans and Preventive Action Plans** specifying measures to prevent, manage and mitigate risks and respond effectively to supply disruptions. These plans need to be in line with very high electrification rates and must pursue the development of electricity and flexibility infrastructure with a focus on efficiency and energy demand savings.

- Future TYNDP modelling will simulate **variability in future weather years** which will help to evaluate impact and risks on energy infrastructure.

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