

Penta statement on the need to ensure a resilient electricity system for future electricity crises

Ensuring security of electricity supply is of high priority. The emergence of unexpected crises, such as the energy crisis triggered by the Russian war of aggression on Ukraine in 2022, but also previous crises, have reminded us of the importance of secure energy supplies. Some of these crises might not be resolved by flexibility and generation as provided by the market alone.

As identified within the framework of the EU risk preparedness regulation, the future may bring new challenges and extraordinary crises situations triggered by e.g. extreme weather events, fuel shortages, failure of critical infrastructure, or cyber- or physical attacks. Future electricity crises are – by definition - difficult to predict with certainty, their impact however, will likely extend across Europe's interconnected electricity systems reaching beyond national borders. While each Member State bears strong responsibility in terms of national electricity security of supply (e.g. own definitions of appropriate risk level and developing own capacities as part of the European internal market), expanding regionally available cross-border capacity could be an important factor to address such crises by fostering solidarity and mutual support, and should therefore be further evaluated.

To address these challenges, we need a resilient electricity system that can rapidly adapt to, withstand and recover from extreme and unexpected disruptions. This requires a portfolio of measures, including flexibility such as demand response management, sufficient grid infrastructures, as well as adequate amounts of generation capacity as for example provided via reserves or capacity mechanisms.

Regarding generation capacities, market actors typically don't adequately anticipate and accommodate for very unlikely electricity crises or short-term shocks. Similarly, capacity markets as planned or implemented by several EU Member States may struggle to account for rare and unexpected crisis events, as their dimensioning is constrained to average foreseeable situations and reliability standards. Yet, as the recent past has taught us, these crises events can in fact happen. Therefore, it is important to ensure reliable generation capacity in order to cope with unexpected crises that extend beyond acceptable levels of loss of load expectation.

The Pentilateral Energy Forum has a strong track record in the field, due to its work on security of supply on the one hand¹, and cross-border integration electricity systems on the other.

However, the current EU framework does not seem to be entirely fit for future challenges. Currently, "strategic reserves" or "capacity mechanisms" shall address resource adequacy concerns as identified by European Resource Adequacy Assessment (ERAA), but not crisis scenarios in line with the risk preparedness regulation. The identified capacity gaps and hence the dimensioning of current strategic reserves or capacity mechanisms may thus not reflect the needed capacities during severe energy crises. Beyond the capacity gaps, the EU framework needs to be further scrutinized, including with respect to e.g. assessment of usage criteria for strategic reserves. The next energy crisis might need a more flexible approach in order to avoid a loss of load.

Against the aforementioned background, **we, as the Pentilateral Energy Forum, envisage the following:**

- **Penta study on crises measures:** In line with the MoU of 1 December 2021, Penta countries will conduct a study to assess the economic costs and benefits of reliable capacity provided via capacity mechanisms or reserves during electricity crises (and considering stress tests). The study shall include an assessment of economic costs and benefits from different intensities of using cross-border capacities during crises. The study shall be discussed with national TSOs and NRAs.
- **Updated EU framework:** Based on the Penta Study, Penta countries will assess the relevant provisions of the Electricity Market Regulation and the provisions of the Risk Preparedness Regulation regarding their suitability to address future severe energy crises, and, if appropriate, make proposals how to update the current EU legislation.
- **Establishing a regional approach of capacities:** Based on the outcome of the Penta study on crises measures, Penta countries commit to explore the option to establish a joint approach and possible use of cross-border capacities during crises in the medium to long-term, where feasible. The Penta countries will work together with the goal to develop a framework to enable such a cooperation.

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¹ Work package 5 of the Penta Project "[Methodological improvements of Resource Adequacy Assessments](#)" might be particularly relevant for the proposed work on cross-border reserve capacities.