

ENTSO-E Policy Paper – Short Summary

The role of Capacity Mechanisms to enable a secure and competitive energy transition

April 2025



Decarbonising in a cost-effective and secure manner is essential to ensure that the European economy remains competitive, as highlighted in the recent Competitiveness Compass by the European Commission. Keeping the electricity system adequate is crucial for this ambition.

Capacity Mechanisms (CMs), part of the electricity market design in several European countries, play a critical role in ensuring resource adequacy by providing incentives to capacity providers (generation, storage, or demand side response assets), thereby addressing the risk of supply shortages, especially during periods of peak demand or system stress.

The recent Electricity Market Design (EMD) reform recognised CMs as a possible structural element of national electricity markets. However, further improvements in the EU regulatory framework are needed to facilitate a simpler and quicker process for introducing, reforming, or extending CMs, in order to allow Member States to address adequacy concerns and additional system needs in a timely manner. In addition, as the energy system evolves, it is critical to ensure that CMs not only address immediate resource adequacy concerns but also align with broader and longer-term objectives such as decarbonisation, market efficiency, and cross-border integration.

Therefore, to support EU and national policymakers in making informed decisions that enhance the effectiveness and sustainability of Capacity Mechanisms, ENTSO-E recommends to:

- **Introduce Capacity Mechanisms where needed and make them fit for the energy transition.** CMs are a critical tool to complement energy markets for ensuring proper resource adequacy, and therefore energy system security, in many regions. CMs should be introduced where adequacy concerns have been identified through the European or national resource adequacy assessments (ERAA or NRAAs) and energy markets may fail to ensure sufficient available capacity during limited renewable and carbon neutral output or system stress. CMs' design must balance adequacy needs with decarbonisation goals and other system security issues resulting from the energy transition. To avoid locking in fossil fuel technologies beyond their necessary contribution, CMs must evolve to support the clean energy transition, prioritising low-carbon and flexible resources in the long run.

- › **Design Capacity Mechanisms to ensure effective capacity delivery at the lowest cost for consumers.** This can be achieved by minimising over-procurement and excess profits, incorporating penalties for non-performance, and carefully calibrating strike prices. Also, the distribution of CM costs should be equitable and reflect consumers' contribution to adequacy needs during periods of system stress. In this regard, capacity subscriptions, limited grid access agreements, consumer segmentation, or dynamic/ time-of-use pricing incentivise demand side response during times of system stress improve fairness and lower overall procurement costs.
- › **Promote technology inclusivity rather than technology neutrality.** CM design should address barriers faced by technologies like demand side response and storage. Design features like investment thresholds (longer contracts to support larger CAPEX) and multi-year contracts can ensure fair participation of diverse technologies. Derating factors (to assess the reliability contribution of different capacity types) coupled with flexible service level agreements and aggregation options can facilitate the participation of energy-constrained resources like storage and demand side response.
- › **Evolve Capacity Mechanisms to address flexibility and broader system needs, while balancing complexity and market efficiency.** Where necessary, Member States should consider CMs evolving from purely capacity-based mechanisms to solutions that reward flexibility and benefits for other system needs (e.g. frequency and non-frequency ancillary services, and congestion management) and providing efficient locational signals. Going forward, careful consideration needs to be given on how to best coordinate CMs and non-fossil flexibility support schemes (where introduced) to exploit synergies and avoid negative interactions.
- › **Promote more practical solutions for cross-border participation and Member States cooperation.** CMs should be designed to facilitate regional collaboration between Member States. Design solutions should minimise unnecessary complexity and administration burden by for instance harmonising key processes and establishing clear and practical frameworks for coordination. Cross-border participation in CMs, while reflecting real contribution to resource adequacy, should be simpler and more practical to decrease implementation complexity. Gradual implementation – including allowing direct interconnector participation and implicit participation as an interim solution - can facilitate a faster approval and stepwise implementation process, ensuring that implementation of cross-border participation does not unduly delay the procurement of capacity through a capacity mechanism. Furthermore, the conditions under which implicit participation can be allowed as an enduring solution should be explored.
- › **Assess evolution opportunities of Capacity Mechanisms' framework in the European context.** The objective of streamlining and simplifying the approval process of CMs for Member States should prevent the introduction of new EU rules based on excessively restrictive criteria for Member States. EU and national regulatory frameworks should, in fact, allow swift and regular CM design adjustments in response to market developments, technological innovation, and evolving energy policies. EU policy makers should better involve national regulators, system operators and relevant stakeholders to adequately assess opportunities and challenges of streamlining CM designs and their coordination at regional or European level.

These recommendations are explored in greater depth in our extended [Policy Paper](#). The paper offers a comprehensive analysis of the key challenges associated with the design and implementation of Capacity Mechanisms, drawing on current policy developments, market dynamics, and stakeholder perspectives. Based on this analysis, the paper provides evidence-based recommendations to enhance Capacity Mechanisms' effectiveness in supporting a competitive, reliable, and sustainable energy transition. ENTSO-E remains committed to working with the European Commission, Member States, and stakeholders to achieve these goals.

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