

ENTSO-E Position Paper – Short Summary

Flexibility from RES

November 2025

TSOs emphasise the importance of flexibility from renewable energy sources for an efficient and secure electricity system.

Key Message: As the energy industry, we must ensure that renewable energy sources (RES) fully leverage their flexibility potential – especially during periods of high generation and low demand – by ensuring the observability and controllability of assets and offering appropriate financial incentives.

ENTSO-E supports the European energy transition by enabling the integration of RES into the electricity system. As the share of RES grows, their contribution to an efficient and reliable

electricity system is becoming increasingly important. This is particularly evident in situations with high generation potential and low load to avoid excess generation.

Excess generation and its consequences

To achieve a high share of RES in electricity generation, their installed capacity must significantly exceed the load – including new flexibility options such as batteries, electrolyzers, electric vehicles, or heat pumps. There are several situations with high generation potential when feed-in from RES must be reduced. Currently, many RES plants fail to switch off, even when spot prices are negative. This can lead to energy surpluses that may affect system frequency

and compromise reliable operation. In addition, congestion problems can arise when non-controllable systems feed into local clusters, which can also lead to cancellations of planned outages, further increasing costs and delays in network reinforcement. To ensure secure system operation, it is essential to leverage the flexibility potential of RES by improving observability and controllability and offering financial incentives for market players.

Improving observability and controllability

Observability and controllability are essential preconditions for assets to respond flexibly to market, grid, and system needs. However, these conditions are still not being consistently met, especially for small plants. In this context, ENTSO-E emphasises the following priorities:

- › Roll out smart metering or other granular metering systems (e.g. Art. 7 d in Electricity Market Design Review [EMDR]) to enable the observability of assets.
- › Improve data exchange requirements, including between plant operators and balancing responsible parties (BRPs).
- › Facilitate controllability of assets by plant operators or professional parties (BRP, supplier or RES aggregator), i.e. by standardising interfaces.
- › Enforce controllability requirements outlined in the requirements for generators by TSOs and national authorities, in line with local system needs. This includes enabling their use in TSO system defence plans or remedial actions, including regular testing.
- › Implement necessary control infrastructure (dedicated control boxes).
- › Strengthen cybersecurity at the product level to improve resilience.

Improving market-dependent behaviour

For a resilient system, market players must be motivated to act in ways that benefit the system. This requires appropriate financial incentives, including effective subsidy schemes and low costs for adjusting generation capacity. Accordingly, ENTSO-E makes the following specific recommendations:

- › Establish appropriate support schemes as declared in ENTSO-E's position paper: [Sustainable Contracts for Difference Design](#).
- › Stop net metering where it is currently applied.
- › Facilitate dynamic feed-in and grid tariffs for small-scale power plants.
- › Automate processes (control and settlement) to reduce the cost of shutting down assets.
- › Provide incentives to adhere to operating constraints as determined by the relevant system operator.
- › Encourage RES participation in balancing or other system services (through appropriate support schemes and aggregation for small-scale assets).

About ENTSO-E

ENTSO-E, the European Network of Transmission System Operators for Electricity, is the association of the European transmission system operators (TSOs). The 40 member TSOs, representing 36 countries, are responsible for the secure and coordinated operation of Europe's electricity system, the largest interconnected electrical grid in the world.

Before ENTSO-E was established in 2009, there was a long history of cooperation among European transmission operators, dating back to the creation of the electrical synchronous areas and interconnections which were established in the 1950s.

In its present form, ENTSO-E was founded to fulfil the common mission of the European TSO community: to power our society. At its core, European consumers rely upon a secure and efficient electricity system. Our electricity transmission grid, and its secure operation, is the backbone of the power system, thereby supporting the vitality of our society. ENTSO-E was created to ensure the efficiency and security of the pan-European interconnected power system across all time frames within the internal energy market and its extension to the interconnected countries.

ENTSO-E is working to secure a carbon-neutral future.

The transition is a shared political objective through the continent and necessitates a much more electrified economy where sustainable, efficient and secure electricity becomes even more important. **Our Vision: "a power system for a carbon-neutral Europe"**^{*} shows that this is within our reach, but additional work is necessary to make it a reality.

With the present Strategic Roadmap, ENTSO-E has reorganised its activities around two interlinked pillars, reflecting this dual role:

- › "Prepare for the future" to organise a power system for a carbon-neutral Europe; and
- › "Manage the present" to ensure a secure and efficient power system for Europe.

ENTSO-E is ready to meet the ambitions of Net Zero, the challenges of today and those of the future for the benefit of consumers, by working together with all stakeholders and policymakers.

* <https://vision.entsoe.eu/>

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