Summary report on the public consultation for ENTSO-E's proposed revision of the methodology for the European Resource Adequacy Assessment (ERAA)

17 November 2025

This document is intended to depict a summary of the contributions made by stakeholders during the public consultation for ENTSO-E's proposed revision the methodology for the European Resource Adequacy Assessment (ERAA) and outline how ENTSO-E has taken into account the feedback received in its final proposal for the ERAA methodology on several key points. Detailed feedback from stakeholders and subsequent responses from ENTSO-E can be found here. The finalised document of the revised ERAA methodology will be published on ENTSO-E's website following the approval process provided in Article 27 of Regulation 2019/943.

ENTSO-E Mission Statement

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 throughout 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.

In its Strategic Roadmap presented in 2024, ENTSO-E has organised 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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1. Background

Triggered by the energy crisis of 2022, the European Commission (EC) proposed an Electricity Market Design Reform (EMDR), including targeted updates to the Electricity Regulation[1]. These updates entered into force in July 2024, and the Electricity Regulation (recast) now provides that:

- capacity mechanisms (CMs) are no longer last resort nor temporary measures; and
- the EC had to adopt a report assessing the possibilities of streamlining and simplifying the process of applying a CM.

On 5 March 2025 the EC released its report[2] on "the assessment of possibilities of streamlining and simplifying the process of applying a capacity mechanism". The report highlighted that in addition to the complexity of the CM approval process, several stakeholders had been critical about the complexity of the methodology for performing the ERAA. To address these concerns, the EC requested the European Union Agency for the Cooperation of Energy Regulators (ACER) to update and streamline the ERAA methodology in a number of areas to ensure the robustness of the framework, ease its implementation by stakeholders at EU level and national level, reflecting on the lessons learnt from case practice.

On 16 April 2025, the European Network of Transmission System Operators for Electricity (ENTSO-E) received an official request[3] from ACER to propose amendments to the methodology for the ERAA based on the EC's report.

2. Purpose and scope of the public consultation

In line with the Electricity Regulation and in order to operate in a transparent manner, ENTSO-E launched a public consultation from 18 July to 29 August 2025, to reach Member States (MSs), National Regulatory Authorities (NRAs), Transmission System Operators (TSOs), Distribution System Operators (DSOs), market parties and other interested stakeholders to ensure that the proposed amendments to the ERAA methodology reflect the needs of the European Union. Inputs collected during the public consultation were taken into account in the final revision of the ERAA methodology before its submission to ACER.

This public consultation covers all the proposed amendments to the ERAA methodology. There were a total of 4 sections, 23 questions covering the following topics:

- personal information;
- ENTSO-E's proposed amendments to the ERAA methodology;

[1] *Regulation - EU - 2024/1747 - EN - EUR-Lex*
[2] *EUR-Lex - 52025DC0065 - EN - EUR-Lex*
[3] *ACER-letter-to-ENTSO-E-on-ERAA-streamlining-16042025.pdf*

- additional parameters to support the simplified State aid approval under the process set out in the Clean Industrial Deal State Aid Framework (CISAF); and
- any additional comments.

3. Contribution of stakeholders

In total, 28 responses were received through ENTSO-E's online consultation hub[4]. In addition, ENTSO-E engaged with the EC and ACER in several informal discussions throughout the drafting of the proposed amendments.

In terms of sectoral engagement, the largest proportion of participants to the public consultation were national authorities (Ministries and NRAs) and market actors (36% each), followed by membership associations (21%) and DSO-TSOs (7%), as shown in Figure 1.

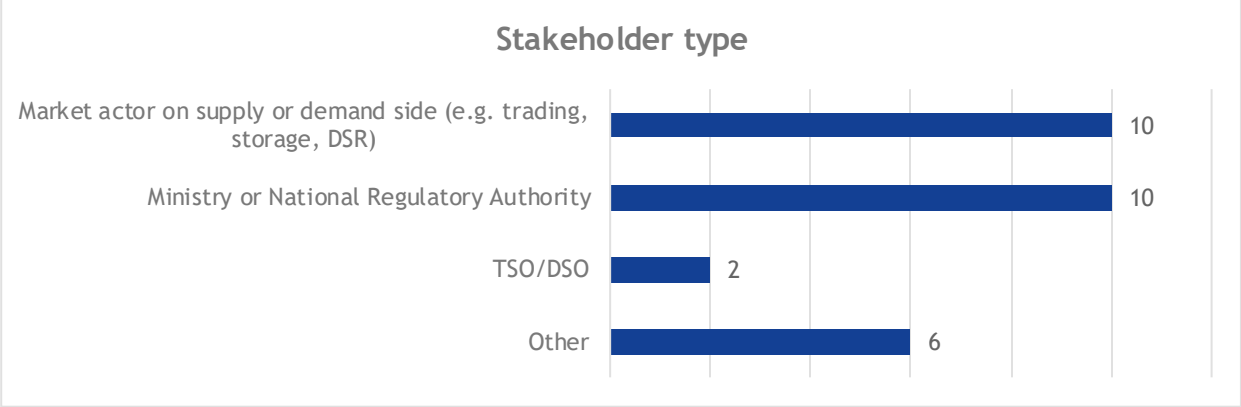

Figure 1: Overview of responses to the public consultation by stakeholder type

4. Summary of main stakeholder feedback

The following sections outline the main feedback received from stakeholders on selected articles of the ERAA methodology where ENTSO-E proposed amendments, and other topics where stakeholder feedback was requested including the scenario framework (Article 3), the Economic Viability Assessment (EVA) (Article 6), the complementarity between ERAA and National Resource Adequacy Assessments (NRAAs) (Recitals and Article 8), and additional parameters to support the fast-track capacity mechanism approval process under CISAF. Note that feedback received from stakeholders on all articles of the amendment methodology, as well as ENTSO-E's detailed responses, can be found in the detailed responses published in the Excel file on the ENTSO-E website.

[4] *Not all stakeholders responded to every question. Therefore, the total number of responses per question differs across the summary report.*

4.1.Scenario framework

4.1.1. Introduction of the new Trends and Projections scenario

Most responses to the public consultation (18 of 23) support ENTSO-E's proposal to introduce an additional central reference scenario (*'Trends and Projections'*), where the implementation of the National Energy and Climate Plan (NECP) targets may be delayed due to a slower pace of the energy transition. Moreover, many stakeholders considered this scenario as more concrete and realistic. While most of the feedback refers to delay in generation capacities, some stakeholders explicitly welcome the possibility to modify the demand and cross border exchanges in this scenario. Overall stakeholders would prefer that the ERAA should consider both central reference scenarios in each edition, but recognise the additional complexity involved in considering two central reference scenarios. A number of stakeholders highlighted that, if ENTSO-E can only consider a single central reference scenario in a given ERAA edition, the *Trends and Projections* scenario should be prioritised.

Following the received feedback, in the case where only a single central reference scenario is performed, ENTSO-E proposes to prioritise the *Trends and Projections* central reference scenario. As the assessment of two full central reference scenarios is not currently seen as feasible within the timeline, ENTSO-E propose to assess the *Trends and Projections* for all pivotal target years within the study horizon and, where possible, the NECP-based *National Plans* scenario for a subset of pivotal target years.

The assumptions of the central reference scenario(s) considered in each ERAA edition will be consulted, as done in the previous ERAA editions, and all stakeholders are invited to participate and provide their views. In terms of scenario dimensions, if only a single central reference scenario is considered, all dimensions of supply, demand and grid can be accommodated in the *Trends and Projections* scenario. However, in the case where multiple central reference scenarios are required, simplifications may be needed on the dimensions considered.

4.1.2. 'With CM' variant

The majority of stakeholders who responded to the public consultation (12/15) support ENTSO-E's proposal to keep the 'with CM' variant as non-mandatory in the proposed ERAA methodology revision, thus ENTSO-E retains the prerequisites and conditionality for performing this variant including technical feasibility, agreement between ENTSO-E and ACER, and timely delivery of the ERAA. Yet, several stakeholders see high value and importance of this variant for giving insights to competent authorities about potential CM development. Especially for the MSs who do not have a CM and whose EVA and adequacy results can be impacted by neighbouring MSs with CMs.

ENTSO-E acknowledges the views expressed by some stakeholders that a "with CM" variant (i.e. needing to contract additional CMs - under an already approved CM framework - to reach the country's reliability standard) can add value to the implementation of a CM, in particular to the quantification of the potential volume of capacity needed. However, it requires a complex, iterative approach (still to be developed) to obtain meaningful results and may not always be

feasible within the tight timeframe of the ERAA. ENTSO-E therefore propose that, as part of the implementation plan, the detailed methodology for developing this variant shall be developed, and the feasibility and extent of a 'with CM' variant shall be agreed between ACER and ENTSO-E for each ERAA cycle.

4.2. Economic Viability Assessment

4.2.1. Improvements to investor risk aversion approach

The majority of stakeholder responses support ENTSO-E's proposals to enhance the risk aversion modelling. A common position by stakeholders is that hurdle rates alone are not sufficient to capture the correct investor behaviour. Additionally, some stakeholders suggest ENTSO-E to consider price and revenue caps. The consideration of additional measures beyond hurdle premiums pursuant to Art 6(10)(c) and Art 6(17) are justified to consider the fact that investments, of which profitability relies on outlier prices, are not considered as reliable investments by investors.

4.2.2. Consideration of relevant revenues for EVA

Overall stakeholders endorse the proposal of including only the relevant revenue streams for different technologies and decisions, while requesting more clarity on e.g. how the relevant revenue streams are decided for each technology to ensure future economic decisions are captured accurately, and how revenues other than the energy ones coming from the modelled economic dispatch will be assessed. To ensure that the list of relevant revenue streams for each technology to ensure future economic decisions are captured accurately and kept up-to-date, ENTSO-E has updated the ERAA methodology with an additional paragraph (22) in Article 6 to provide for regular surveys to ensure these aspects fully capture real-world behaviour.

4.2.3. Economic Viability Check (EVC) as an alternative form of revenue-based EVA

Overall, stakeholders support the proposal for the economic viability check (EVC) as an alternative form of revenue-based EVA, alternative implementation of the revenue-based approach to allow for a computationally simpler but more nuanced assessment of the likelihood of market exit and entry decisions compared to the current approach. However, several stakeholders also requested more clarity on how it would work in practice, which has been duly elaborated by ENTSO-E, in Article 6(20) of the ERAA methodology.

4.3. Complementarity between ERAA and NRAAs

Many stakeholders strongly emphasised the role of NRAAs as important tools for complementing the ERAA, and welcomed ENTSO-E's proposal to clarify the principle of complementarity between the ERAA and NRAAs in the ERAA methodology. The majority of stakeholders are aligned that sensitivities can also be used to identify adequacy concerns as stated in the Recitals of the ERAA methodology proposal, thus ENTSO-E has retained this element as a possibility for NRAA to

complement the ERAA in identifying adequacy concerns. Moreover, pursuant the Electricity Regulation (Art. 23 and 24), it is ENTSO-E's understanding that the ERAA (and therefore NRAAs) is capable of identifying adequacy concerns through sensitivities.

Various stakeholders also suggested for complementarity to be explicitly included in Article 8 (Identifying a resource adequacy concern) and for NRAA results to be included or at least considered in the ERAA. The updated version of Article 8 reflects that resource adequacy concerns might be identified through CRSs and sensitivities, as the case may be. Updated recitals of the methodology also provide explicitly that the identification of resource adequacy concerns might result from the ERAA or NRAAs. However, the content of the ERAA methodology should strictly reflect the provisions of the Electricity Regulation and cannot prescribe additional legal implications.

4.4. Additional parameters to support the fast-track capacity mechanism approval process under CISAF

Following the recommendation in the CM streamlining report, ACER's letter to ENTSO-E requesting proposed amendments to the ERAA methodology outlined two specific requests regarding the streamlining of State aid approval for CMs:

- *"the ERAA should indicate the capacity volumes to be procured through potential capacity mechanisms for each modelled bidding zone with an identified adequacy concern", and*
- *"ENTSO-E should submit to ACER robust de-rating factors derived from each ERAA for each Member State and relevant technology type, along with the methodology used to derive them"*

Given the considerations outlined in the explanatory note, ENTSO-E did not include any proposals on these aspects in the draft methodology amendments published for publication consultation, but first instead sought views from stakeholders as part of the public consultation by asking two specific questions:

- *Do you think that parameters such as volumes to procure under potential capacity mechanisms and de-rating factors should be computed as part of the ERAA, considering the existing legal framework?, and*
- *If you answered 'No" in the previous question, or in case the calculation of these parameters is not ultimately feasible within the ERAA, what is your view on an alternative approach in which ENTSO-E could make available the relevant data to enable the Member State (or another entity designated by it) to determine these parameters at national level?*

The responses to the first question showed that:

- The majority (16 out of 28) of respondents answered "No", that the parameters should not be computed as part of ERAA, including 6 out of 10 national authorities;[5]
- Six stakeholders answered "Yes", that the parameters should be computed as part of ERAA;
- Two stakeholders answered "Not sure"; while
- Four stakeholders did not provide an answer.

Some of the reasons given by stakeholders for not including the CM parameters in the ERAA were:

- The scope of ERAA is only to identify potential resource adequacy concerns, not to address them.
- Indicators such as volumes to procure under a potential CM and de-rating factors are the responsibility of MSs to assess and define in addressing any identified adequacy concerns, as MSs have the legal responsibility of national adequacy.
- Given its European scope, the ERAA can only provide indications on the future trends of the system.
- Significant country-specific data is necessary to define a CM, and thus it should be up to the MS to define the relevant scenarios for computing volumes to procure under potential CMs.
- Potential delays to the ERAA delivery (as well a subsequent ACER approval) mean that CM parameters based on ERAA may not be available in time for the national administration and regulator to propose and approve volumes for potential CM auctions in a timely way.

From those stakeholders who indicated the CM parameters should be included in the ERAA, the main reasons and feedback given were:

- The ERAA should not only identify adequacy concerns, but also provide quantitative insights into the nature of indicative capacity needs and de-rating factors, which would give competent authorities a consistent and credible starting point for CM design.
- Inclusion of these parameters would be a valuable step towards further integration of European electricity markets, harmonisation of CMs, and reducing administrative burden at national level.
- If a MS considers the high-level outputs of the ERAA sufficient for the dimensioning of its capacity mechanism, ENTSO-E should make these outputs available. The MS may then choose to use the data for its own internal study, or request ENTSO-E to perform the calculation on its behalf, where the MS lacks the necessary resources or expertise to carry it out independently.

[5] *Looking specifically at the answers of the 10 national authorities that responded, six answered "No", three answered "Yes", and one answered "Not sure".*

- MSs should retain the option to use their own calculations, especially where national or regional specificities justify doing so.

Taking into account all the stakeholder comments received, three main updates were made in the draft methodology submitted to ACER in order to facilitate the fast-track CM approval process for those MSs which would like to make use of it:

- A new Article 12 "ERAA-based parameters supporting CISAF implementation" was added to the corpus of the methodology outlining the process for the parameters to be calculated in which:
  - the responsibility for calculating the CM parameters lies with the MSs wishing to apply for the simplified State aid approval process, while the MS may designate another entity to perform the calculation (e.g. national TSO, or even ENTSO-E);
  - the CM parameters are to be calculated based on a set of non-binding guidelines provided as an Annex to the ERAA methodology (see below);
  - the parameters should be calculated based on the latest ACER-approved ERAA results to ensure the most up-to-date official adequacy results serve as the basis for the calculation, while keeping the parameter calculation separate to the ERAA process to avoid delaying ERAA delivery; and
  - the CM parameters calculated by the MS (or designated entity) are to be communicated to ACER within 3 months of the ERAA approval for publication.
- A new Article 13 "Alternative assessments for establishing capacity mechanisms" was added clarifying the other options that MSs have for identifying the potential need for and dimensioning of CMs, in addition to the simplified State aid procedure based on ERAA results.
- A new Annex 1 "Non-binding guidelines for the estimation of parameters specifically for the fast-track approval process for capacity mechanisms" was added to provide a consistent set of guidelines for the calculation of the CM parameters based on the ERAA results by the MS (or designated entity), allowing for additional refinement at national level.

With these additions, ENTSO-E's proposal ensures that MSs wanting access to the fast-track CM approval process are facilitated, without encroaching on MS prerogatives. Moreover, a consistent approach for calculating high-level CM parameters is outlined in the methodology, as the starting point for further calculations to be performed at national level.