

ENTSO-E consultation on the European Resource Adequacy Assessment 2025

A Eurelectric consultation response paper

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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Eurelectric response to the ENTSO-E consultation on the European Resource Adequacy Assessment 2025

About you

1. What is your first name?

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4. What is your organisation?

Eurelectric / Other

5. If you tick this box, we will publish your comments, but we will not publish your name and organisation.

I want my answer to be anonymous. [box unticked]

6. If you tick this box, we will not publish your answer to this consultation. However, your answer, without your name and organization, may be shared with EU and national authorities, drafting committee members, and other persons or entities involved in the adoption process of the consulted document to ensure the performance of ENTSO-E legally mandated tasks.

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Your feedback on ERAA 2025

9. The ERAA target methodology is set to support the achievement of the EU 2030 climate and energy objectives set out in Article 1(a) of Electricity Regulation. Do you agree that ERAA 2025 is already an important analysis in view of EU ambitious climate and energy targets?

- a) Strongly agree
- b) Agree
- c) Neutral
- d) Disagree
- e) Strongly disagree
- f) Don't know

10. How is ERAA 2025 useful to you or your business?

- a) Adequacy situation in the mid-term drives our business decisions.
- b) The results of ERAA support our policy or regulatory decisions.
- c) We are interested in understanding the methodology of ERAA for research purposes.
- d) We are interested in understanding the methodology of ERAA for business/consulting purposes.
- e) We are using the ERAA's input data (e.g. for national studies).
- f) Other (please explain)

In case you checked the box "Other", or in case you want to give additional explanations, please provide your comments in the text box below.

N/A

11. In your opinion, how important are the following features of the 2025 ERAA edition? (5 being very important; 1 being less important)

Economic Viability Assessment	1	2	3	4	5
Consideration of uncertainty of investment decision-making by alternative risk aversion modelling approaches in the central reference scenario	1	2	3	4	5
Refined risk aversion modelling by enhanced hurdle premiums	1	2	3	4	5
Refined risk aversion modelling by introduction of revenue-cap to exclude revenues from rare price spikes	1	2	3	4	5
Adequacy simulation with curtailment sharing	1	2	3	4	5
Analysis of scarcity events	1	2	3	4	5
Revenue-Based EVA proof-of-concept	1	2	3	4	5

Weather Scenario selection methodology advancements

1

2

3

4

5

In case you want to give additional explanations or describe other features, please provide your comments in the text box below.

Risk aversion modelling: the alternative risk aversion modelling approach provides an improved view to the EVA. Increased regulatory risk and greater price volatility mean that investors into new generation assets are more demanding when making decisions about how and where to invest. There are concerns that risk aversion modelling has been developed based on limited stakeholder feedback, making it more challenging to interpret the ERAA results. A more detailed explanation of the revenue-cap logic and methodology would be important to enhance understanding of such a measure.

Weather Scenarios: stress-testing resource adequacy against sufficiently extreme (but not too extreme) weather scenario is of the most interest. However, not all weather scenarios are as relevant to all of Europe in terms of adequacy. Refining the approach to regional differences in relevant weather scenarios in a pan-EU exercise will also be an important exercise for future ERAA models.

Improvements for future editions

12. What are in your opinion the most important data and general modelling features to be developed in future ERAA editions? Rank your answers from 1 being most important

- 1 Additional scenario (c.f. Trends and Projections scenario definition in proposal to update ERAA methodology)
- 5 Variant scenario considering all approved capacity mechanisms
- 6 Improve demand response modelling
- 7 Improve maintenance optimization methodology
- 2 Weather scenarios and weather-dependent generation datasets (feedback will be forwarded to Copernicus Climate Change Service)
- 3 Improve forced-outage modelling (e.g. by considering correlations with weather conditions)
- 4 Other (please elaborate in comment box below)

Please elaborate on any Other features ranked or any additional comments

Data Centres: future ERAA editions should further consider the effect of Data Centre development in demand forecasting. A more explicit incorporation of their consumption would contribute to more accurate and forward-looking projections.

Weather-dependent demand scenarios: alongside weather scenarios, future modelling updates should also include modelling of demand scenarios and demand profiles

according to different climate evolutions. This is becoming increasingly important, especially in the Mediterranean region with the increasing load during summer for cooling.

Improve network outage modelling: network outage modelling should be improved further, notably for HVDC lines.

13. What are in your opinion the most important features of Economic Viability Assessment to be developed in future ERAA editions? Rank your answers from 1 (most important)

- 3** Implementation of revenue-based EVA in central reference scenario framework
- 5** Consideration of increased number of weather scenarios (WS)
- 2** Improvement of the methodology for WS scenario selection for the EVA
- 1** Representation of uncertainties in the central reference scenario
- 8** Further enhancements of investors' risk aversion representation
- 7** Improvement of storage investment modelling
- 6** Improvement of DSR investment modelling
- 4** Other (please elaborate in comment box below)

Please elaborate on any other features ranked or any additional comments

Ensure that adequacy assessments consider important regional, national and local specificities: the existing EVA may not account for important regional specificities, which would likely lead to ongoing plant operation for a longer period, whilst the investment trajectory for other technologies seem very optimistic (for example DSR). Eurelectric supports the principle of NRAA use alongside ERAA results for capturing important nuances at regional/national level.

Furthermore, the limited nature of results of the current annex on revenue-based EVA do not allow a challenge of the sensitivity of final LOLE values for the different methodologies. More transparency on marginal cost time-series used to assess asset revenues would be of high relevance.

Final comments

14. Do you have additional suggestions or comments?

Eurelectric acknowledges the methodological improvements carried out by ENTSO-E in the development of the European Resource Adequacy Assessment 2025.

Eurelectric agrees that National Resource Adequacy Assessments should be seen as complementary to ERAA results (c.f. page 9 of the ERAA 2025 [Executive Report](#)). NRAAs reflect local/regional specificities that could materially affect adequacy analysis for a country. ERAA should therefore not be the sole basis for assessments of national adequacy but should be complemented with a methodologically coherent NRAA. To continue to improve the alignment between ERAA and NRAAs, it is important not only to

consult national TSOs but also to ensure that their technical considerations and alignment proposals are effectively integrated into the final methodologies and outputs.

Members also raise concerns regarding the modelled trajectory of the deployment of certain technologies; for example, underestimating development of certain technologies such as BESS whilst overestimating hydrogen.

ENTSO-E should additionally prioritise the implementation of an accurate revenue-based approach to the EVA, which would provide a more reliable representation of investment signals and enhance the coherence of scenario assessments.

Particularly with regards to Spain and the Spanish bidding zone, it should be noted that by 2030 approximately 12GW of CCGT capacity will have reached the end of its operational lifetime, which will require investments in lifetime extensions to remain operational. This is not included in the EVA, which results in no life-extension investments in CCGTs, whilst the ERAA retains the whole CCGT fleet as the base-case scenario for 2030. This should be clarified to avoid the risk of potential retirement of certain CCGT units in 2030.

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



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