

# ERAA 2023

# Consultation response

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A Eurelectric response paper

February 2024

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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**6. 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 the ERAA 2023 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

**7. How is the ERAA 2023 useful to you or your business?**

- A. Adequacy situation in the mid-term drives our business decisions.
- B. The results of ERAA are a support for 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. Other (please explain)

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

**8. In your opinion, what are the most important methodological achievements of the 2023 ERAA edition? Rank your answers from 1 (most important) to 4 (least important).**

- A. Economic Viability Assessment (1)
- B. Flow-Based Market Coupling (2)
- C. Adequacy simulation with curtailment sharing (3)
- D. Other (4)

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

Eurelectric acknowledges and welcomes the methodological improvements carried out by ENTSO-E in the development of the 2023 edition of the ERAA report. In particular with regards to the evolution of the Economic Viability Assessment (EVA). However, it is imperative to underscore that further refinements are essential within the underlying methodology to ensure the provision of consistently reliable results.

The EVA methodology and underlying assumptions should:

- **Reflect actual transmission capacities** - taking into account the transmission capacities that best reflect the actual capacities of the network while mitigating artificial increases resulting from the methodological aspects of capacity calculation. In particular, the inclusion of the 70% rule would require the consideration of cross-border corrective actions, such as redispatching, where availability may not be guaranteed during tense situations. These unanticipated actions could lead to a significant underestimation of adequacy problems.

- **Adequately reflect latest available data** - without overrelying on National Energy and Climate Plans submitted by Member States. Instead, the EVA shall adequately reflect trajectories and incorporate the latest available data.
- **Comprehensively consider climate variability** – by incorporating enough climate years, a more accurate representation of climate events would be ensured. Thus, preventing the underestimation of the high variability of climatic conditions on the energy system.
- **Integrate annual granularity in the model for a decade** – aligning with the approved ACER methodology, as opposed to the current limited horizon of 3-7 years. Economic viability assessments attain realistic precision when they encompass the remaining lifetime of the assets in question, necessitating consideration across a series of consecutive years.

**9. What are in your opinion the most important features to be developed in future ERAA editions with regards to the adequacy assessment? Rank your answers from 1 (most important) to 7 (least important).**

- A. Improve demand forecasting (2)
- B. Improve explicit demand response modelling (4)
- C. Improve implicit demand response modelling (3)
- D. Improve modelling of climate change (5)
- E. Improve electrolyser modelling (7)
- F. Improve the maintenance optimization methodology (describe in comment below) (6)
- G. Other (1)

#### *Additional comments*

Eurelectric emphasises the need for enhancing existing features such as the stochastic multi-year EVA and Flow-Based Market Coupling (FBMC) before introducing new elements in forthcoming editions of ERAA. It is essential that the ERAA aligns closely with the Electricity Regulation and ACER methodology to ensure the reliability of assessment outcomes. Notably, the documents accompanying the ERAA report do not explicitly detail progress post the ACER's February 2023 decision, which identified three problematic sections incompatible with current legislation.

Future editions of the report shall underscore the prospective nature of the modelling and caution against using it as the sole basis for policy decisions on generation adequacy and capacity mechanisms by decision-makers. The findings should be complemented by more in-depth national assessments that consider local nuances, jurisdictional experiences, and national security of supply targets. Given the highly interconnectedness of certain countries, for instance Belgium, it becomes imperative to recognise and address additional risks. Therefore, national adequacy assessments must incorporate considerations of foreign-related risks, such as limitations on imports or reduced availability of foreign capacity - factors not currently addressed by the ERAA.

While the complete methodology is expected to be deployed in 2024, there is still room for improvements even if the implementation challenges of the methodology should not be underestimated. To effectively identify potential adequacy issues, the robustness of EVA results across diverse scenarios must be ensured, and a critical evaluation of input data from TSOs is imperative.

**10. What are in your opinion the most important features to be developed in future ERAA editions with regards to the Economic Viability Assessment (EVA)? Rank your answers from 1 (most important) to 6 (least important)**

- A. Inclusion of additional technologies as investment candidates in the EVA (name technologies in comments). (4)
- B. Increased number of climate years (CY) for the EVA (2)
- C. Improvement in the methodology for CY scenario reduction for the EVA (3)
- D. Implementation of the EVA on a Flow-Based model instead of an Net Transfer Capacity model (5)
- E. Other (1)

*Additional comments*

**Inclusion of additional technologies as investment candidates in the EVA-** all relevant technologies capable of providing flexibility into the system (pumped hydro storage, electrolyzers, but also demand response, batteries/storage, renewable & low-carbon gases, etc.) should be considered as investments candidates in the EVA since their impact on the adequacy parameters can be significant considering the increasing penetration of non-programmable RES. Despite the inherent development constraints of certain technologies (e.g. not easy to find suitable sites for pumped hydro storage), the EVA shall recognise their importance in achieving the EU 2030 climate and energy objectives. Doing so would allow alignment and consistency of adequacy and flexibility assessments. This alignment is vital, as even though different KPIs are reported for each, a more holistic and accurate representation of the complex interplay of technologies to meet the system's needs is needed.

**Improvement in the methodology for CY scenario reduction for the EVA –** recognising the computational constraints that limit simulating all climate years, it is essential to ensure that the selected representative climate years align with the anticipated climate changes in the coming decade. To achieve this, representative climate years should be constructed by considering the expected impact of climate change. Alternatively, as a secondary approach, significant past years with climate characteristics similar to those expected in the Target Years can be considered representative, with due consideration for the potential occurrence of extreme climatic events.

Furthermore, it has been observed, particularly in regions like Portugal, that only average and wet years have been employed for CY simulations. To enhance the accuracy of results, it is crucial to include dry years in the selection process, as relying solely on wet/average years may compromise the precision of the outcomes.

**Implementation of the EVA on a Flow-Based model instead of a Net Transfer Capacity:** the implementation of Flow-Based model should contribute to a better representation of the adequacy contribution of neighboring countries, which is important in particular for bidding zones heavily relying on imports.

***Additional comments on future EVA features:***

- Key priority is that EVA should evolve into a multi-year assessment in order to provide a trajectory for investment decisions and appropriate risk apportionment.
- The EVA methodology does not consider some of the difficulties that market players face in the real world: market risks and the underlying uncertainties over the long term, regulatory risks (e.g. changes in energy policy, permitting, risks of exceptional measures

implemented to limit revenues, ...), technology risks (e.g. which options will prove profitable over the long term), etc. Moreover, the EVA does not consider additional revenue for the generating units besides the wholesale electricity market, i.e., revenues from district heating or ancillary services - which may also impact their economic viability. Instead of evaluating their impact on the economical situation, EVA simply excludes them from the analysis.

- The EVA methodology should consider market failures, coordination problems, uncertainty and risks to fully represent key challenges for investors.
- The use of the National Estimate scenario (i.e. a bottom-up aggregation of NECPs) as the starting point for the EVA warrants further scrutiny as the attainment of these targets should not be assumed. The choice of an iterative algorithm's starting point, such as the Low Thermal Capacity Scenario, should be explored to conduct sensitivity analyses of EVA results.
- Assumptions based on the modelling of the realisation of new capacity should be complemented with clarification of uncertainties. It is important to ensure full transparency on the assumptions around installed capacity considered for any given target year. The EVA should question both existing and new generation capacities outlined in NECPs and only incorporate capacities into the system if they are deemed economically viable. Furthermore, some of the EVA results seem impossible, e.g., in the Netherlands, EVA indicates the decommissioning of more coal capacity than the total capacity in the National Estimates dataset.
- The EVA must consider mothballing if the concerned TSO explicitly declares that a detailed regulatory framework at national level (incl. environmental permitting aspects) is in force and guarantees free exit. Additionally, the EVA should factor in a minimum duration of mothballing to reflect real plant owner decisions, considering the risk of technical problems upon demothballing and the small savings during mothballing periods.
- Even in countries with established capacity markets (e.g., Belgium), access conditions for existing capacities, especially those with limited Long-Term contract possibilities, and uncertainties about future conditions (e.g., reduced CO<sub>2</sub>-emission limits) may not be sufficient to ensure their retention in the market.

**11. Which additional scenarios or sensitivities would you be interested to see in future ERAA editions? Rank your answers from 1 (most interested) to 7 (least interested).**

- Sensitivities on the demand levels (1)
- Cross-border capacities restrictions (2)
- Anticipated Capacity Mechanisms capacities (5)
- DSR levels (6)
- Sensitivity on fossil fuel limitations (7)
- Sensitivity on system stress (3)
- Sensitivity on EVA with different fuel prices (4)

*Additional comments: sensitivity for capacity resources that are not assessed under EVA (i.e. nuclear),*

## 12. Do you have additional suggestions or comments?

Eurelectric expresses the following additional considerations:

- Request for a comprehensive document introducing the most recent improvements compared to the previous exercise, offering a detailed presentation of EVA outcomes. This document should outline existing assumptions, the overall energy mix, and details on additional capacities and decommissioning for each country. For this purpose, an online platform accessible to TSOs and selected stakeholders to provide, view and assess assumptions could minimise delays between data collection and elaboration.
- Further details on the state of the network for the modelled years, on the FMBC model and the underlying assumptions driving simulation (including information about the commissioning and decommissioning of network elements that significantly affect cross-zonal capacity).
- Eurelectric calls for an explanatory note that outlines how the results obtained align with expected economic considerations behind adequacy assessments. It is crucial to understand how deviations from modeled situations would impact the results and conclusions drawn.
- An in-depth comparison between the ERAA and NRAA exercises is requested, delving into assumptions and results. This analysis aims to recognise best practices from TSOs in NRAA analyses, with an expectation that these practices gradually integrate into the ERAA for continuous improvement.
- Finally, with regard to the need for "new flexibility tools" mentioned in the summary, Eurelectric stresses that these tools will primarily be needed to manage the system and ensure its reliability and puts forward the following two points:
  - (i) all sources of flexibility (in particular all kind of dispatchable assets) should be taken into account;
  - (ii) further information should be provided to justify the type of new tools needed and the ramps and peaks mentioned should be characterised more precisely.

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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