ACER
European Union Agency for the Cooperation of Energy Regulators

PUBLIC

DECISION No 04/2026
OF THE EUROPEAN UNION AGENCY
FOR THE COOPERATION OF ENERGY REGULATORS

of 13 March 2026

on the amendments to the methodology for the European Resource Adequacy Assessment (ERAA)

THE EUROPEAN UNION AGENCY FOR THE COOPERATION OF ENERGY REGULATORS,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators[1], and, in particular, Article 9(1)(a) thereof,

Having regard to Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity[2], and, in particular, Article 23(7) and Article 27 thereof,

Having regard to the outcome of the consultation with the European Network of Transmission System Operators for Electricity,

Having regard to the outcome of the consultation with ACER's Electricity Working Group,

Having regard to the favourable opinion of the Board of Regulators of 11 March 2026, delivered pursuant to Article 22(5)(a) of Regulation (EU) 2019/942,

Whereas:

[1] OJ L158, 14.6.2019, p. 22.
[2] OJ L 158, 14.6.2019, p. 54.

1. INTRODUCTION

(1) The European resource adequacy assessment (ERAA) is a pan-European assessment carried out annually by the European Network of Transmission System Operators for Electricity (ENTSO-E), covering a time horizon of up to ten years and aiming to model and analyse potential events that may adversely affect the balance between electricity supply and demand. The ERAA is conducted on the basis of a common Union-wide methodology (ERAA methodology), which is established pursuant to Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (Electricity Regulation) and ensures a coherent, transparent and consistent approach to resource adequacy assessment across the Union.

(2) In 2020, ENTSO-E developed a proposal for the ERAA methodology and submitted it to ACER for approval. On 2 October 2020, ACER adopted Decision 24/2020 approving the ERAA methodology.

(3) The Electricity Regulation was amended in 2024 to improve the Union's electricity market design[3]. To that end, Article 69(3) of the Regulation required the European Commission to:

- assess options to streamline and simplify the process for applying capacity mechanisms (CMs) under Chapter IV of the Regulation, with a view to ensuring that Member States can address adequacy concerns in a timely manner. In that context, the Commission was tasked with requesting that ACER amend the methodology for the European resource adequacy assessment. The Commission's Streamlining Report[4] was published on 3 March 2025 and sets out elements that ACER is requested to amend in the ERAA methodology; and

- after consultation with Member States, submit proposals with a view to simplifying the process of assessing capacity mechanisms as appropriate. The Commission's Clean Industrial State Aid Framework (CISAF)[5] was adopted in August 2025 and establishes a fast-track approval process for CMs.

(4) Following the Streamlining Report, on 16 April 2025, ACER issued a Request for Amendment to ENTSO-E, further specifying the key areas where ENTSO-E should propose amendments to the ERAA methodology and submit them for ACER's approval.

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[3] Regulation (EU) 2024/1747 of the European Parliament and of the Council of 13 June 2024 amending Regulations (EU) 2019/942 and (EU) 2019/943 as regards improving the Union's electricity market design, OJ L, 2024/1747, 26.6.2024 (Electricity Market Design reform, EMD).
[4] Report from the Commission to the European Parliament and the Council on the assessment of possibilities of streamlining and simplifying the process of applying a capacity mechanism under Chapter IV of Regulation (EU) 2019/943, in accordance with Article 69(3) of Regulation (EU) 2019/943, COM/2025/65 final.
[5] Communication from the Commission – Framework for State Aid measures to support the Clean Industrial Deal (Clean Industrial Deal State Aid Framework), C/2025/7600, OJ C, C/2025/3602, 4.

(5) The present Decision concerns the amendments to the ERAA methodology proposed by ENTSO-E. Annex I to this Decision sets out the amended ERAA methodology, as revised and approved by ACER.

2. PROCEDURE

(6) On 6 November 2025, ENTSO-E submitted to ACER its proposed amendments to the ERAA methodology (Proposal). On 17 November, ENTSO-E complemented its Proposal by providing the results of the public consultation.

(7) Between 6 November and 18 December 2025, ACER discussed the proposed amendments with ENTSO-E, in particular during four working level meetings. ACER's Electricity Working Group (AEWG) and the SOS Task Force were regularly briefed on those discussions.

(8) On 6 January 2026, ACER shared its preliminary position on the amendments to the ERAA methodology with ENTSO-E and the Member States via the Electricity Coordination Group (ECG), inviting views by 20 January 2026.

(9) On 20 January 2026, ENTSO-E submitted written comments on ACER's preliminary position and further elaborated its views during an oral hearing on 21 January 2026. ACER also received written comments through the ECG consultation from the Belgian Ministry (19 January 2026), the Slovak Ministry, the Italian Ministry, the Dutch Ministry and CRE (20 January 2026), as well as from the Spanish Ministry and BNetzA (21 January 2026). In addition, oral hearings were held with the Italian Ministry on 21 January 2026 and with BNetzA on 26 January 2026 upon their request.

(10) Based on the comments received, ACER introduced further amendments to the methodology and shared them with ENTSO-E and the Member States via the ECG on 4 February 2026, inviting their views by 11 February. ACER received feedback from ENTSO-E (written and during an oral hearing of 12 February 2026) and from the Ministries of Belgium, Luxembourg, Germany and Malta (written comments). Following these exchanges, the hearing phase was closed on 12 February 2026.

(11) The AEWG was consulted on ACER's draft Decision and provided its advice on 23 February. For details, see section 5.2.

(12) ACER's Board of Regulators issued a favourable opinion on 11 March 2026.

3. ACER'S COMPETENCE TO DECIDE ON THE PROPOSAL

(13) Pursuant to Article 9(1)(a) of Regulation (EU) 2019/942, ACER shall approve, and amend where necessary, the proposals for methodologies and calculations related to the European resource adequacy assessment pursuant to Article 23(3), (4), (6) and (7) of Regulation (EU) 2019/943.

(14) Pursuant to Article 23(7) of the Electricity Regulation, these proposals shall be subject to the prior consultation of Member States, the ECG and relevant stakeholders and approval by ACER under the procedure set out in Article 27 of the Regulation.

(15) Article 27 of the Electricity Regulation provides that before submitting a proposal, the ENTSO-E shall carry out a consultation involving all relevant stakeholders, including regulatory authorities and other national authorities. It shall duly take the results of that consultation into consideration in its proposal.

(16) Article 27 of the Electricity Regulation also provides that within three months of the date of receipt of the ENTSO-E's proposal, ACER shall either approve or amend it. In the latter case, ACER shall consult the ENTSO-E before approving the amended proposal. ACER shall publish the approved proposal on its website within three months of the date of receipt of the proposed documents.

(17) Pursuant to Article 27(4) of the Electricity Regulation, ACER may request changes to the approved proposal at any time. Within six months of the date of receipt of such a request, the ENTSO-E shall submit a draft of the proposed changes to ACER. Within three months of the date of receipt of the draft, ACER shall amend or approve the changes and publish those changes on its website.

(18) The current ERAA methodology was approved by ACER Decision 24/2020. Upon ACER's request, on 6 November 2025, ENTSO-E submitted its proposal to amend the current ERAA methodology. ACER thus is competent to decide on the proposed amendments based on Article 9(1)(a) of Regulation (EU) 2019/942 and Articles 23(7) and 27(4) of the Electricity Regulation.

4. SUMMARY OF THE PROPOSAL

(19) The submission of 6 November 2025 consisted of a cover letter and the Proposal entitled "Amendment of methodology for the European Resource Adequacy Assessment in accordance with Article 23 of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity". The document set out the proposed amendments integrated into the text of the ERAA methodology as approved by ACER Decision 24/2020. The main amendments proposed by ENTSO-E concern Articles 3, 6 and the addition of Articles 12 and 13. To reflect these changes, ENTSO-E also proposed amendments to the 'Whereas' section of the methodology.

(20) Upon ACER's request, ENTSO-E supplied the evaluation of comments received during its public consultation. ENTSO-E further explained that the Explanatory Document setting reasons for the proposed amendments is published as part of the consultation documents on ENTSO-E's website and there are no changes thereto.

5. SUMMARY OF THE OBSERVATIONS RECEIVED BY ACER

5.1. Consultation on ACER's preliminary position

(21) On 6 January 2026, ACER shared its preliminary position on the Proposal with ENTSO-E and the Member States through the ECG, inviting their views. The main elements of the feedback received are summarised below and are addressed in detail in Section 6.2.

(22) ENTSO-E submitted written comments and further elaborated its views during an oral hearing held on 21 January 2026. ENTSO-E's comments concerned, in particular, the computation and publication of CM-related parameters, the design of the scenario framework, the implementation timeline, the complementarity between the ERAA and NRAAs, and elements of the economic viability assessment.

(23) ACER also received written comments from five Member States (Belgium, Italy, Slovakia, Spain and the Netherlands). The Italian Ministry additionally presented its views during an oral hearing of 21 January 2026. In summary:

- The Belgian Ministry commented on the role of NRAAs in the context of State aid procedures, the importance of timely delivery of the ERAA, and the involvement of Member States in scenario development.
- The Italian Ministry commented on the delivery of CM-related parameters, the identification of adequacy concerns in NRAAs, the representation of investor risk aversion, and the overall complexity of the ERAA.
- The Slovak Ministry commented on the delivery of CM-related parameters, the identification of adequacy concerns in NRAAs, the scenario framework, the treatment of sensitivities, and the periodicity of the ERAA.
- The Dutch Ministry commented on the delivery of CM-related parameters, the with-CM scenario, the treatment of pivotal target years, and the economic viability check.
- The Spanish Ministry commented on the delivery and computation of CM-related parameters, the identification of adequacy concerns in NRAAs, the scenario framework, and the complexity of the ERAA.

(24) ACER further received comments from two regulatory authorities, BNetzA and CRE, commenting in their capacity as ECG members. BNetzA also supplemented its written submission during the oral hearing of 21 January 2026.

- BNetzA commented on the representation of investor risk aversion, the CM-related parameters, and certain drafting clarifications.
- CRE commented on the representation of investor risk aversion and on the delivery of CM-related parameters.

(25) On 4 February 2026, taking into account the feedback received, ACER introduced further amendments to its preliminary position and shared them with ENTSO-E and the

Member States via the ECG, inviting views on these additional amendments. These views are summarised below and addressed in detail in Section 6.2.

(26) ENTSO-E submitted written comments and further elaborated its views during an oral hearing held on 12 February 2026. ENTSO-E's additional comments concerned, in particular, the delivery of CM-related parameters, the implementation timeline and the complementarity between the ERAA and NRAAs.

(27) ACER also received written comments from four Member States (Belgium, Germany, Luxembourg and Malta):

- The Belgian Ministry commented on the role of NRAAs in State aid procedures and on the delivery of CM-related parameters.
- The German Ministry commented on the role of NRAAs in State aid procedures and on the delivery of CM-related parameters.
- The Luxembourg Ministry commented on the delivery of CM-related parameters.
- The Maltese Ministry commented on the possibility to run sensitivities.

5.2. Consultation of the AEWG

(28) Six regulatory authorities provided comments during the AEWG consultation. These views are summarised below and addressed in detail in Section 6.2.

- BNetzA proposed explicitly allowing the methodology to account for investor risk aversion by incorporating a revenue cap into the model. This proposal was supported by CRE and CNMC.
- E-Control welcomed allowing Member States to opt-out of calculating and publishing CM parameters, and proposed clarifying the opt-out process by explicitly including it in Article 10(1)(f) on the ECG consultation. This proposal was supported by ERSE, ACM, CRE and CNMC.

(29) On 23 February 2026, the AEWG endorsed the draft ACER Decision and invited ACER to further consider the proposals made by BNetzA and E-Control.

6. ASSESSMENT OF THE PROPOSAL

6.1. Legal framework

6.1.1. General requirements

(30) Articles 23 and 27 of the Electricity Regulation define the content and the process for developing and amending the ERAA methodology. Procedural requirements are outlined in section 3. In addition, Articles 31 and 41(2) of the Electricity Regulation specify requirements for ENTSO-E's stakeholder consultation.

(31) Minimum content of the ERAA methodology is defined in Article 23, paragraphs (1), (4) and (5), of the Electricity Regulation.

6.1.2. Streamlining report

(32) The Electricity Regulation was amended in 2024 to improve the Union's electricity market design[6]. To that end, Article 69(3) of the Regulation required the European Commission to:

- assess options to streamline and simplify the process for applying capacity mechanisms (CMs) under Chapter IV of the Regulation, with a view to ensuring that Member States can address adequacy concerns in a timely manner. In that context, the Commission was tasked with requesting that ACER amend the methodology for the European resource adequacy assessment. The Commission's Streamlining Report[7] was published on 3 March 2025 and sets out elements that ACER is requested to amend in the ERAA methodology; and

- after consultation with Member States, submit proposals with a view to simplifying the process of assessing capacity mechanisms as appropriate. The Commission's Clean Industrial State Aid Framework (CISAF)[8] was adopted in August 2025 and establishes a fast-track approval process for CMs.

(33) In the Streamlining Report, the Commission requested ACER to amend the ERAA methodology, with the requested amendments summarised below:

- **Scenario framework:** Introduce an additional, probabilistic Trends and Projections central reference scenario, reflecting actual progress in the energy transition (not only policy targets).

- **Target year selection:** Explicitly model only a limited number of key target years, using extrapolation for others.

- **Risk aversion:** appropriately model risk aversion via 'hurdle rates'.

- **CM-related parameters:** Include a post-process to identify procurement volumes and make de-rating factors publicly available with ACER oversight.

[6] Regulation (EU) 2024/1747 of the European Parliament and of the Council of 13 June 2024 amending Regulations (EU) 2019/942 and (EU) 2019/943 as regards improving the Union's electricity market design, OJ L, 2024/1747, 26.6.2024 (Electricity Market Design reform, EMD).
[7] Report from the Commission to the European Parliament and the Council on the assessment of possibilities of streamlining and simplifying the process of applying a capacity mechanism under Chapter IV of Regulation (EU) 2019/943, in accordance with Article 69(3) of Regulation (EU) 2019/943, COM/2025/65 final.
[8] Communication from the Commission – Framework for State Aid measures to support the Clean Industrial Deal (Clean Industrial Deal State Aid Framework), C/2025/7600, OJ C, C/2025/3602, 4.

- **Cross-zonal capacities:** Continuously monitor assumptions regarding exchanges with third countries (e.g., Morocco, Moldova, Tunisia, Ukraine) under ACER oversight.

- **Member States' implementation plans:** Anticipate the likely impact of measures in Member States' implementation plans (instead of explicitly modelling them) and make the sensitivity analysis on indirect price formation restrictions non-mandatory.

- **Demand response and storage:** Improve the modelling of non-fossil flexible resources.

(34) Following the Streamlining Report, on 16 April 2025, ACER issued its Request for Amendment to ENTSO-E, further specifying the key areas where ENTSO-E should propose amendments to the ERAA methodology and submit them for ACER's approval. These areas include, in particular:

- **Improved representation of adequacy risk:** This includes adding the Trends and Projections scenario, improving investor risk aversion modelling through hurdle rates, improving business case representation for non-fossil flexible resources, and monitoring cross-zonal exchanges with third countries.

- **Support the CISAF fast-track procedure:** Indicate capacity volumes to be procured by potential CMs to support the streamlined State aid approval and publish de-rating factors as an output of ERAA.

- **Methodological simplification:** This includes only modelling a subset of crucial target years and deriving the others through interpolation, reviewing implementation plans, finding potential simplifying assumptions.

6.2. ACER's assessment and revisions

6.2.1. Assessment of the general requirements for the development and content of the Proposal

(35) The Proposal complies with the procedural requirements of Article 23(7) of the Electricity Regulation as the Proposal was submitted by ENTSO-E, who is the entity responsible for developing the ERAA methodology.

(36) The Proposal was subject to a public consultation by ENTSO-E, between 18 July 2025 and 29 August 2025. ENTSO-E's answer to the comments received during the public consultation has been published on ENTSO-E's website[9]. The Proposal was also

[9] More information on the consultation available: https://consultations.entsoe.eu/system-development/revision-of-eraa-methodology/

presented to the ECG on 9 October 2025. Therefore, the Proposal meets the consultation requirements set out in Article 23(7) and 27(2) of the Electricity Regulation.

6.2.2. Assessment and amendments to the scenario framework

6.2.2.1. Trends and Projections and NECP scenarios

(37) ENTSO-E proposes in the Proposal to include an additional Trends and Projections central reference scenario in the scenario framework. However, the Proposal does not define the detailed content of that scenario, nor does it specify its methodological basis. ACER considers that such absence of definition constitutes an issue in terms of transparency, contrary to the requirement under Article 23(5) of the Electricity Regulation that the ERAA shall be based on a transparent methodology and the requirement in Article 23(6) that the ERAA methodology shall be based on transparent, objective and verifiable criteria. This should enable stakeholders to understand and anticipate the approach applied. In the absence of clear requirements, stakeholders would not be in a position to understand how the Trends and Projections scenario is constructed, nor how it differs from the scenario derived from National Energy and Climate Plans ("NECP scenario").

(38) In order to address this, ACER considers it necessary that the methodology, as amended by this Decision, set out the principles underpinning the Trends and Projections scenario. Those principles should ensure, in particular, that:

- the central reference scenario represents a best estimate of future market and system conditions, reflecting the most likely evolution of demand, supply and networks on the basis of available evidence, and avoiding unduly optimistic or pessimistic assumptions;
- the projections used by TSOs are based on factual and quantifiable evidence;
- the data, assumptions and sources used to develop the scenario are clearly documented and communicated, enabling stakeholders to interpret ERAA outcomes appropriately;
- the projections and assumptions are consistent with those used in related Union planning exercises, in particular the Ten-Year Network Development Plan ("TYNDP"), unless duly justified.

(39) In light of these considerations, ACER has added new paragraphs (3c) to (3g) in Article 3 in order to establish requirements for the development of the Trends and Projections scenario.

(40) ACER further considers that a clear conceptual distinction between the NECP scenario assumption basis and the Trends and Projections scenario assumption basis is necessary for the ERAA results to be properly interpreted. The NECP scenario assumption basis should reflect the system outlook assuming full implementation of the policies, measures and targets set out in the NECPs. By contrast, the Trends and Projections

scenario assumption basis should reflect the best estimate of the future evolution of the electricity system on the basis of observed trends and realistic projections. Accordingly, future policy measures should be reflected in the Trends and Projections scenario assumption basis only where they are supported by concrete implementation measures. Conversely, ENTSO-E should avoid introducing trend-based assumptions into the NECP scenario assumption basis where such assumptions would dilute the forward-looking nature of the NECP scenario assumption basis or undermine its function of testing the adequacy outlook under full achievement of NECP objectives. This ensures that the NECP scenario assumption basis continues to serve as a policy-implementation baseline, while the Trends and Projections scenario assumption basis serves as a distinct counterfactual describing the expected trajectory where the realised evolution of the system may diverge from the pathway implied by NECP objectives.

(41) For these reasons, ACER has amended Article 3 of the methodology to specify that: (i) policy targets not supported by sufficiently concrete implementation measures shall not be taken into account in the Trends and Projections scenario assumption basis; and (ii) observed trends shall not be used to adjust the NECP scenario assumption basis.

(42) ENTSO-E commented on these amendments in their response to ACER's preliminary position:

(43) ENTSO-E supports the objective of transparency and evidence-based assumptions for the Trends and Projections central reference scenario. However, it considers that ACER's proposed amendments to Article 3(3c)–(3f) would introduce overly prescriptive and disproportionate justification requirements. In particular, ENTSO-E argues that requiring a detailed, quantifiable justification for any deviation from a five-year linear trend for each asset type does not reflect the realities of power system development that are often non-linear.

(44) ENTSO-E further considers that many policy impacts cannot be translated into precise and quantifiable forecasts. Demand-side measures such as electrification, energy efficiency or demand response often depend on behavioural factors and evolving regulatory frameworks, making strict quantification difficult. It also notes that Member States differ significantly in data availability and planning practices; imposing uniform, highly detailed justification requirements may therefore create disproportionate administrative burdens without materially improving the quality of the ERAA. In ENTSO-E's view, the proposed amendments risk leading to extensive reporting obligations with limited added analytical value.

(45) ACER has acknowledged ENTSO-E's concerns on proportionality and administrative burden when finalising its Decision. ACER notes that the objective of the amendments is to enhance transparency and interpretability of assumptions underpinning the Trends and Projections scenario, as those are not based on Member States' decision like NECPs.

(46) In light of ENTSO-E's comments, ACER has streamlined the reporting obligations in Article 3, paragraphs (3c) to (3f) in several respects:

- First, the requirement to justify deviations from a linear trend has been replaced by a more flexible obligation to describe the approach and main assumptions used for the projections. This avoids treating linear trends as a benchmark and focuses instead on transparency regarding methodology and drivers.

- Second, for the supply side, ACER has allowed reporting to be carried out at an aggregated level, rather than systematically at the level of each asset type. This reduces the reporting burden, while still ensuring that the overall key drivers are clearly described.

- Third, ACER has clarified that the availability of quantifiable evidence may vary across Member States and that the requirement applies "where available". This acknowledges structural differences in data availability across Member States.

- Fourth, ACER has explicitly allowed reference to existing reports, such as relevant chapters of national resource adequacy assessments or other official planning documents, where these provide an equivalent level of detail. This prevents duplication of reporting and reduces administrative effort.

- Fifth, the reporting obligation regarding policy developments has been streamlined. Rather than providing an exhaustive justification, ENTSO-E is required to provide a description of the policy developments and an explanation of how their impact has been reflected in the projections.

With these amendments, ACER considers that Annex I to this Decision strikes an appropriate balance between transparency, proportionality and practical feasibility.

(47) Further comments on the Trends and Projections scenario were received from the Belgian Ministry. While supporting the introduction of an additional central reference scenario, the Ministry called for reinforced involvement of national administrations in the development of scenario assumptions, in particular where those assumptions deviate from the trajectories set out in the NECPs.

(48) ACER agrees that enhanced involvement of Member States is appropriate for the Trends and Projections scenario assumption basis, which allows for greater modelling discretion than the NECP-based scenario assumption basis. This is reflected in Article 9(4)(a), which strengthens transparency requirements in the context of the ECG consultation by requiring a clear description of the assumptions underpinning the Trends and Projections scenarios. This ensures that Member States are provided with sufficient information to effectively review and comment on the proposed assumptions.

6.2.2.2. With-CM scenario

(49) In the Proposal, ENTSO-E suggested amending the ERAA methodology by making the execution of with-CM scenarios conditional upon certain criteria. ACER considers that such an approach would not meet the condition of Article 23(5)(f) of the Electricity Regulation that ERAA "includes variants without existing or planned capacity mechanisms and, where applicable, variants with such mechanisms." Meeting this

condition would require that each ERAA edition includes, at a minimum, one central reference scenario accounting for future revenues from capacity mechanism ("with-CM") and one central reference scenario excluding such revenues ("without-CM").

(50) Considering this, ACER disagrees with ENTSO-E's reading that "where applicable" creates a conditional obligation exempting the with-CM scenario. Omitting the with-CM scenario would yield incomplete, and thus inaccurate, adequacy results. Instead, the provision requires that capacity mechanisms be taken into account when they exist or are planned. Excluding the with-CM scenario would only be defensible if no capacity mechanisms exist or are planned anywhere in the EU, which is not the case.

(51) Beyond being legally required, ACER considers that a with-CM central reference scenario is operationally necessary and provides material added value for several processes, in particular because:

- it provides Member States without capacity mechanisms with a basis to assess the cross-border effects of neighbouring capacity mechanisms on their own security of supply.
- it constitutes the ERAA scenario basis for the RCCs to compute the MEC in accordance with the Technical specifications for cross-border participation in capacity mechanisms; and
- it supports the derivation of CM-related parameters required for the effective implementation of the CISAF fast-track approval procedure;

(52) In their response to ACER's preliminary position, ENTSO-E argues that cross-border effects are already reflected in the without-CM scenario, insofar as that scenario includes capacity already contracted under approved capacity mechanisms. ENTSO-E further notes that additional information on cross-border interactions can be derived from standard ERAA outputs, such as scarcity coincidence indicators, import and export flows during scarcity periods, and the geographical distribution of ENS.

(53) ACER does not share that view. The purpose of the with-CM scenario is precisely to reflect, in a coherent and forward-looking manner, the expected impact of approved capacity mechanisms on the adequacy situation across interconnected systems. By modelling the full effect of capacity mechanisms as they are expected to operate, the with-CM scenario enables Member States to assess how capacity procured in other modelled zones affects their own adequacy metrics. This information cannot be substituted by ex post indicators such as scarcity coincidence or import/export flows during scarcity, which do not quantify the adequacy situation of a modelled zone relative to its reliability standard.

(54) ACER further observes that the inclusion of already contracted capacity in the without-CM scenario provides only a very limited representation of the capacity expected to be secured under approved capacity mechanisms. In many capacity mechanisms, a significant share of capacity is procured through short-term auctions (e.g. Y-1 auctions), which are not yet contracted at the time of the ERAA and are therefore not

reflected in the without-CM scenario. Similarly, for more distant target years, capacity subject to one-year contracts may not be captured, despite being expected to participate in future auctions. Moreover, the without-CM scenario is not designed to assess the cross-border effects of capacity mechanisms, as its purpose is to simulate a counterfactual situation in which no capacity mechanisms are implemented beyond already contracted volumes. It therefore does not model the structural impact of approved capacity mechanisms on other modelled zones.

(55) In their answer to ACER's preliminary position, ENTSO-E and the Spanish Ministry raise concern on the fact that requiring a with-CM scenario would create new burdensome requirements that would significantly increase the complexity of the ERAA and would risk the timely delivery of the ERAA.

(56) ACER notes, however, that the execution of a with-CM central reference scenario does not constitute a new obligation introduced by this amendment. The requirement to include a with-CM scenario was already embedded in the initial ERAA methodology. The present amendment does not expand that obligation but provides an extended implementation timeline. Moreover, as explained above, the inclusion of a scenario reflecting the effects of capacity mechanisms is required under Regulation (EU) 2019/943.

(57) As regards technical feasibility, ACER observes that ENTSO-E has already delivered a with-CM scenario in the first ERAA edition. The practical implementation of such a scenario therefore demonstrates its feasibility. ACER further notes that this was achieved at an earlier stage of methodological development and with less operational experience than ENTSO-E has today. In light of the experience gained through subsequent ERAA editions, ACER considers that ENTSO-E is in a position to implement this requirement within the current foreseen timeline.

(58) ACER also notes that comparable modelling approaches are applied in national adequacy assessments. For example, the French national resource adequacy assessment includes a reliability-standard adjustment exercise, whereby capacity levels are calibrated to ensure compliance with the applicable reliability standard across relevant zones. ACER considers that this demonstrates that modelling steps of a similar nature and complexity can be implemented in practice. In comparison, the with-CM scenario under the ERAA methodology is more limited in scope, as it concerns only those modelled zones with approved capacity mechanisms as defined in Annex I to this Decision.

(59) In their responses to ACER's preliminary position, ENTSO-E and the Spanish Ministry express concerns that the with-CM central reference scenario requires modelling choices and that, consequently, the results may not be unique.

(60) ACER acknowledges that different modelling choices may lead to alternative solutions, which is an inherent feature of large-scale optimisation and probabilistic adequacy modelling. However, the same type of non-uniqueness also affects the without-CM scenario. For example, where viable but non-invested capacity exists in several

modelled zones, the allocation of new capacity across those zones necessarily involves modelling choices that influence the final results.

(61) ACER further considers that uncertainty in model outcomes cannot constitute a justification for not implementing a requirement under Regulation (EU) 2019/943. The ERAA is, by its nature, a forward-looking assessment that relies on assumptions and projections which may evolve across editions as inputs are updated. The appropriate response to such uncertainty is to ensure that the modelling approach is transparent, well-defined and consistently applied, and to communicate the underlying assumptions, rather than to omit required scenario from the methodology.

(62) ACER also recalls that Member States may complement ERAA by performing NRAAs under Article 24 of Regulation (EU) 2019/943 and to rely on such an assessment for the purposes of State aid process. Accordingly, where a Member State considers that national specificities warrant a different modelling approach than that applied in the ERAA, it remains free to reflect such specificities in an NRAA.

(63) In light of the above, ACER considers that the argument regarding the existence of multiple potential capacity distributions does not call into question the technical feasibility or appropriateness of running a with-CM central reference scenario.

(64) In its response to ACER's preliminary position, ENTSO-E argues that the execution of a with-CM central reference scenario is not necessary for the computation of the MEC by RCCs. According to ENTSO-E, RCCs may rely on alternative adequacy assessments where the ERAA central reference scenario with CMs does not result in the modelled zone meeting its reliability standard.

(65) ACER acknowledges that, in principle, RCCs could rely on other adequacy assessments where available. However, ACER observes that, in practice, RCCs currently rely on the ERAA without-CM central reference scenario for the estimation of the MEC, even though this is not foreseen in the Technical specifications for cross-border participation in capacity mechanisms. In this context, the availability of a with-CM central reference scenario within the ERAA would provide a more consistent and methodologically aligned basis for RCCs to perform their tasks under the MEC framework. ACER therefore maintains that the inclusion of the with-CM scenario in the ERAA supports the effective implementation of the Technical specifications for cross-border participation in capacity mechanisms.

(66) ACER acknowledges, however, that ENTSO-E may not be in a position, in the short term, to produce with-CM central reference scenarios for all target years in the ERAA 2026, ERAA 2027 and ERAA 2028 editions. ACER therefore considers it appropriate to provide for a staged implementation of with-CM central reference scenarios. In particular, ACER considers it proportionate to: (i) require a proof-of-concept in the ERAA 2026 edition, with a view to facilitating the practical implementation and operationalisation of the with-CM central reference scenario in subsequent ERAA editions; (ii) require modelling of the Trends and Projections with-CM central reference scenario for one target year in the ERAA 2027 edition and for two target years in the ERAA 2028 edition; and (iii) require full coverage of all target years from the ERAA

2029 edition onwards. For the same transitional period, i.e. up to and including the ERAA 2028 edition, ACER also considers it appropriate to allow ENTSO-E to apply a simplified procedure for constructing the with-CM central reference scenario, in order to ensure timely delivery while progressively increasing methodological maturity.

(67) In light of the above, ACER has amended Article 3 of the Proposal to require that each ERAA edition includes the execution of at least one with-CM central reference scenario. ACER further amended Article 13 of the Proposal to set out: (i) a staged implementation timeline for the with-CM central reference scenarios; and (ii) the possibility for ENTSO-E to apply a simplified procedure for their construction. In ACER's preliminary position, the simplified approach was proposed to be allowed up to and including the ERAA 2028 edition.

(68) On the staged implementation foreseen by ACER, ENTSO-E considers that, if the 'with-CM' scenario were to be implemented as a proof of concept in ERAA 2026, integrating its results into the main ERAA deliverables would provide limited added value. ENTSO-E therefore proposes to deliver the proof of concept as a separate study outside the formal ERAA process for publication no later than 6 months after the submission of the ERAA 2026 report.

(69) ACER acknowledges the importance of ensuring the timely delivery of the ERAA 2026 edition. In order to avoid any risk of delay to the formal ERAA process, ACER considers it acceptable that the proof of concept for the 'with-CM' scenario be delivered separately and after the submission of the ERAA 2026 report. ACER has therefore provided in Annex I to this Decision that, for the ERAA 2026 edition, the proof of concept may be published as a stand-alone deliverable within the specified timeframe.

(70) Additionally, ENTSO-E requests that the simplified approach introduced by ACER for the implementation of the with-CM scenario be allowed to continue beyond the ERAA 2028 edition. In ENTSO-E's view, extending this option to subsequent ERAA editions would provide greater flexibility and help manage the associated computational burden.

(71) ACER considers that the simplified approach constitutes a proportionate transitional measure, given the importance of implementing the with-CM scenario and the significant reduction in computational effort that it entails. At the same time, ACER acknowledges that such simplification may affect the level of precision of the with-CM scenario. While ACER recognises the benefits, in terms of flexibility, of allowing the simplified approach to continue beyond ERAA 2028, its performance should first be assessed in light of practical experience gained in the ERAA process, including an evaluation of its impact on accuracy and the identification of potential methodological improvements. For this reason, ACER has amended the Proposal to permit the continued use of the simplified approach after ERAA 2028, subject to (i) a review by ENTSO-E of its performance and potential improvements in the ERAA editions in which it is applied, and (ii) a recommendation in the ERAA 2028 edition as to whether the simplified approach should be continued in subsequent editions.

6.2.2.3. Definition of existing and planned CM

(72) A necessary input for the construction of the with-CM central reference scenarios is the identification, for each target year, of the modelled zones in which capacity mechanisms are assumed to be in place. In the Proposal, ENTSO-E suggests limiting this identification to modelled zones with capacity mechanisms approved under Union State aid rules.

(73) In its preliminary position, ACER had considered whether it would be realistic, for modelling purposes, to assume that a modelled zone with an approved capacity mechanism at the time of the ERAA would take the necessary step to prolong such a mechanism for as long as an adequacy concern is identified in the considered ERAA edition for that Member State.

(74) ENTSO-E and the Spanish Ministry argued that such an assumption could result in unequal treatment between modelled zones with already approved capacity mechanisms, which would be presumed to be prolonged, and modelled zones without an approved mechanism.

(75) In light of these considerations, ACER has aligned Annex I to this Decision with the Proposal and limited the identification of relevant modelled zones to those with capacity mechanisms approved under Union State aid rules.

6.2.2.4. ACER assessment on the scenarios to be run in each ERAA edition

(76) In the Proposal, ENTSO-E provided that at least one central reference scenario should be run in each ERAA edition and that priority should be given to the Trends and Projections scenario. ACER agrees that, in order to manage workload and modelling complexity, it is not necessary to run all possible scenarios in every ERAA edition. Such an approach also allows ENTSO-E to allocate resources to further methodological improvements aimed at strengthening the robustness of the ERAA. However, ACER considers that the Proposal does not provide sufficient clarity regarding the minimum set of scenarios to be performed. The methodology should therefore specify, in a clear and predictable manner, the minimum scenarios to be run in each ERAA edition. This clarification enhances legal certainty and planning predictability.

(77) In determining the minimum set of scenarios to be run in each ERAA edition, ACER has balanced the following considerations:

- the need for the ERAA to include at least one central reference scenario without-CM as set out in section 6.2.2.2;
- the need to preserve interpretability of ERAA results and comparability across editions;
- the relevance of each scenario in light of the frequency with which the underlying inputs can be updated;
- the technical complexity and resource implications for ENTSO-E, taking into account the need to continue improving the ERAA methodology; and

- stakeholders' and ENTSO-E's expressed preference to place greater emphasis on the Trends and Projections scenarios.

(78) ACER recognises that NECP-based scenarios remain important, as they reflect Member States' planned trajectories for their energy systems. However, NECPs are, as a general rule, updated on a five-year cycle. Consequently, rerunning an unchanged NECP scenario annually is likely to provide limited incremental value, given that its underlying policy assumptions and input data would remain largely stable between revisions. By contrast, Trends and Projections scenarios are designed to reflect observed trends and updated projections, including deviations from the pathways implied by NECP objectives, and therefore provide more timely and decision-relevant insights when produced on an annual basis.

(79) For these reasons, ACER proposed in its preliminary position to amend Article 3 of the Proposal to require that:

- in each ERAA edition, ENTSO-E shall run the Trends and Projections without-CM central reference scenario and the Trends and Projections with-CM central reference scenario; and

- following the adoption or revision of Member States' NECPs, and at least every five years, ENTSO-E shall additionally run the NECP without-CM central reference scenario.

(80) In its response to ACER's preliminary position, ENTSO-E expresses support for the prioritisation of the Trends and Projections scenario and agrees that, in most ERAA editions, at least one central reference scenario should be based on that assumption basis. However, ENTSO-E considers that requiring both the Trends and Projections and the NECP-based scenarios in the ERAA edition immediately following an NECP update or adoption would provide limited additional value. In its view, the two scenario assumption bases are likely to be closely aligned at that stage, as the NECP has just been updated. ENTSO-E therefore recommends that only one scenario assumption basis be required in that edition.

(81) The Italian Ministry similarly raises concerns regarding the feasibility of delivering scenarios under both scenario assumption bases in the year immediately following the adoption or update of the NECPs, pointing to risk of delays.

(82) ACER recalls that the annual execution of the Trends and Projections scenario enhances transparency and facilitates the comparability and interpretability of ERAA results over time. ACER also considers that it would not be appropriate for the NECP-based scenario to cease being run altogether. At the same time, ACER acknowledges that modelling resources may be limited. Accordingly, ACER has introduced in Annex I to this Decision that, where ENTSO-E considers it not feasible to run both without-CM central reference scenarios in the relevant ERAA edition, ENTSO-E may limit the exercise to running the NECP-based scenarios, with and without capacity mechanisms.

6.2.2.5. ACER assessment on the use of simplified central reference scenarios

(83) ACER considers that the methodology should not allow the use of simplified central reference scenarios for the purpose of increasing the number of scenarios produced in an ERAA edition. Central reference scenarios constitute the basis for the identification of potential resource adequacy concerns. They must therefore be developed using the full modelling framework and in accordance with all methodological requirements laid down in the methodology. Allowing simplified variants of central reference scenarios would risk weakening the robustness of the ERAA and undermining the comparability of results across scenarios and across editions.

(84) Furthermore, ACER considers that ENTSO-E should prioritise the consistent delivery of both the without-CM and with-CM central reference scenarios for a given scenario assumption basis, rather than diverting resources towards modelling additional scenario assumption basis. This focus ensures methodological completeness, supports the calculation of CM-related parameters, and strengthens the interpretability of adequacy outcomes across ERAA editions.

(85) In light of the above, ACER has amended Article 3 of the Proposal to preclude the use of simplified central reference scenarios for the purpose of increasing the number of scenarios delivered in an ERAA edition.

6.2.3. Pivotal target years

(86) In the Proposal, ENTSO-E introduces the concept of "pivotal target years", defined as a subset of target years to be explicitly modelled in the ERAA. ENTSO-E proposes that at least four years be designated as pivotal target years and that adequacy metrics and capacity mechanism–related parameters be provided only for those years, while the remaining target years within the ten-year horizon would not be explicitly modelled.

(87) ACER agrees, in principle, with the approach of explicitly modelling only a subset of target years. ACER considers that this is consistent with the Streamlining Report and with ACER's request for amendment, and may support a more proportionate allocation of modelling resources. However, ACER cannot accept the Proposal insofar as it would result in adequacy metrics and CM-related parameters being provided only for pivotal target years. Article 23(1) of Regulation (EU) 2019/943 requires that the ERAA cover each year within a period of ten years from the date of that assessment. Accordingly, the ERAA shall provide results for all target years within the ten-year horizon. Hence, ENTSO-E shall derive the adequacy metrics and CM-related parameters for non-pivotal target years by means of interpolation based on the explicitly modelled pivotal target years.

(88) In order to ensure compliance with Article 23(1) of Regulation (EU) 2019/943, ACER amends Article 4 of the Proposal to require that results be provided for all target years, including non-pivotal target years, by applying an interpolation approach to the outputs of the pivotal target years. In addition, ACER amends Article 12 of the Proposal to set out an interpolation procedure for the determination of CM-related parameters for non-pivotal target years.

(89) In response to ACER's preliminary position, ENTSO-E and the Spanish Ministry argue that, for non-pivotal target years, adequacy indicators and CM-related parameters should be set equal to those of the preceding or subsequent pivotal target year exhibiting the higher adequacy risk. By contrast, the Dutch Ministry supports ACER's proposal to provide results for all target years, including non-pivotal ones, through interpolation between the explicitly modelled pivotal target years.

(90) ACER does not agree with the approach proposed by ENTSO-E and the Spanish Ministry. Assigning the values of the most adverse pivotal year to intermediate non-pivotal years would systematically overstate adequacy concerns and could distort the temporal evolution of adequacy indicators and CM-related parameters. By contrast, linear interpolation between adjacent pivotal target years provides a more proportionate and methodologically consistent approximation of the likely evolution of the system between explicitly modelled years. It ensures that greater weight is given to the closest pivotal years, preserves the trends identified in the simulations, and avoids artificial step changes in adequacy outcomes. ACER therefore considers linear interpolation to offer a technically sounder representation of intermediate target years.

(91) As regards the selection of pivotal target years, the Proposal provides that target years of high policy relevance, i.e. years that are multiples of five (for example 2030 and 2035), shall be included, while the selection of any additional pivotal target years would be determined in the context of each ERAA cycle.

(92) ACER agrees that years that are multiples of five should, as a general rule, be prioritised as pivotal target years, given their high policy relevance and their alignment with Union and national planning milestones. ACER considers, however, that where a target year that is a multiple of five coincides with SY+1, that year need not be selected as a pivotal target year, in light of the more limited role of the ERAA for that target year.

(93) However, ACER considers it necessary that, as requested in the Streamlining Report, the selection of pivotal target years should also ensure the availability of data required by the RCCs to compute the MEC for capacity mechanisms, as well as for the determination of other CM-related parameters. In this regard, ACER considers that the pivotal target years selected in addition to the years that are multiples of five should be chosen so as to (i) ensure the availability of results for the delivery periods needed for the computation of the MEC and (ii) provide adequate coverage of the ten-year study horizon by including at least one pivotal target year in the short-term horizon (SY+2 or SY+3), one in the mid-term horizon (SY+4 to SY+7) and one in the long-term horizon (SY+8 to SY+10).

(94) In light of the above, ACER has amended the Proposal to require that, in addition to the inclusion of target years that are multiples of five (except for SY+1), ENTSO-E shall select the remaining pivotal target years in accordance with the principles set out above, following consultation with ACER, the European Commission, Member States and the RCCs.

(95) For reasons of clarity, ACER has further amended the Proposal to consolidate the provisions concerning pivotal target years into a dedicated Article 2a.

6.2.4. Economic viability assessment

6.2.4.1. Investor business case

(96) In previous ERAA cycles, attention has been given to the way in which the model represents investor behaviour. Two main points have emerged: (1) how to represent investors' risk aversion and their consideration of extreme price events; and (2) how to incorporate the different revenue streams relevant for flexible resources.

(97) The Streamlining Report and ACER's request for amendment expressly refer to both elements. They call, in particular, for (i) a better representation of investors' consideration of extreme price events, including through the use of hurdle rates as a means of representing risk aversion; and (ii) a more accurate representation of revenues beyond the wholesale energy market, which are decisive for investment decisions in flexible resources.

(98) ACER considers that a realistic representation of investor behaviour in the EVA requires a coherent treatment of both aspects. While extreme price events may influence investment decisions, the underlying business case also depends on expected profitability across all the markets in which the asset is expected to participate (e.g. energy, ancillary services and support schemes).

(99) For reasons of coherence, ACER has amended the Proposal by introducing Article 6(8a) to require that the economic viability assessment (EVA) incorporate a comprehensive and realistic representation of investor behaviour, including: (i) risk aversion (including the treatment of extreme price events); and (ii) the consideration of the different revenue streams.

Risk hedging in forward market

(100) ACER observes that the Proposal does not sufficiently consider the potential role of forward markets in mitigating the risks faced by investors. ACER considers that the EVA should reflect investors' ability to hedge exposure to price volatility, in particular where sufficiently liquid forward market instruments are available. Ignoring such hedging opportunities would overstate exposure to short-term price fluctuations and could result in unrealistic signals, including excessive decommissioning or underinvestment. For instance, an asset owner considering decommissioning can partially mitigate exposure to extreme price events through one-year forward contracts.

(101) For this reason, in Article 6(9e), ACER has added a requirement that the ERAA shall consider the risk-mitigating effect of forward markets when representing investor behaviour.

(102) In their response to ACER's preliminary position, ENTSO-E and CRE argue that forward markets are only liquid for certain time horizons and products. They consider that, as a result, the ability of forward markets to hedge price risk for long-term investment decisions is limited and should not be overstated in the modelling of risk aversion within the EVA.

(103) ACER agrees that the risk-mitigating effect of forward markets must be represented in a realistic manner. ACER has therefore clarified in Annex I to this Decision that forward market hedging shall be taken into account for those EVA decision variables and asset types for which appropriate and sufficiently liquid hedging instruments are expected to exist in the relevant time horizon.

Risk aversion measure

(104) ACER notes that the Proposal allows the simultaneous application of multiple approaches to represent risk aversion. ACER considers that such an approach would materially reduce transparency and interpretability, as it would become difficult to distinguish the effect of each parameter on the results. It would also create a risk of double counting risk aversion, potentially biasing EVA outcomes and, in turn, the adequacy assessment.

(105) At the same time, ACER recognises that, as reflected in the Streamlining Report, the methodology should be capable of reflecting investors' specific behaviour in relation to extreme price events. ACER therefore considers it appropriate to distinguish between: (i) a single main measure representing general risk aversion (for instance through hurdle rates); and (ii) a complementary approach addressing investors' treatment of extreme price events, where necessary.

(106) ENTSO-E's survey indicates that hurdle rates are commonly used in practice to reflect investor risk aversion. This is consistent with the Streamlining Report and ACER's request for amendment, which identify hurdle rates as the preferred primary means of capturing risk aversion in the EVA. ACER therefore sets hurdle rates as the default primary risk-aversion approach, while allowing alternative robust approaches.

(107) In light of the above, ACER has amended Article 6(9e) to specify that: (i) only one primary risk-aversion metric shall be applied in the EVA; (ii) hurdle rates shall be the default primary metric; and (iii) alternative primary metrics may be applied where they are robust. The main metric may be complemented by a complementary approach to reflect investors' treatment of extreme price events, as provided for in Article 6(15), provided that such complement does not result in double counting of risk aversion, and remains consistent with established industry practices.

Extreme price event consideration

(108) The Proposal includes a requirement to mitigate the reaction of investors in the EVA to extreme price events through the use of a "revenue cap", discount factors, or other corrective measures. ACER considers that ENTSO-E has not sufficiently demonstrated that, in the absence of such measures, the representation of investor behaviour would be unrealistic by default.

(109) ACER therefore amends Article 6(15) to allow the use of a complementary approach to reflect investors' specific treatment of extreme price events, without making such complementary approach mandatory.

(110) In addition, the Proposal does not define a default method or minimum requirements governing how such complementary approaches should be designed and applied. In ACER's view, this would create undue discretion and reduce transparency, predictability and comparability across ERAA editions.

(111) ACER therefore considers it necessary to lay down, in the methodology, minimum requirements for any complementary approach addressing extreme price events. Such approach shall: (i) reflect realistic investor behaviour in relation to extreme price events; (ii) ensure a coherent treatment of risk; (iii) avoid double counting of risk already captured through the primary risk-aversion metric; and (iv) take into account potential investors' ability to mitigate exposure to extreme price events through forward market hedging.

(112) For transparency and predictability, ACER considers it appropriate to define an acceptable default approach for the complementary treatment of extreme price events. ACER considers that a partial discounting of Monte Carlo sample years with the highest revenues is suitable, as it reflects that investors may discount business cases where a material share of expected profitability relies on low-probability high-revenue sample years. The methodology should nevertheless allow ENTSO-E to apply alternative approaches, provided that they reflect investor risk at least as robustly as the default approach, and that their use is duly justified and documented.

(113) In light of the above, ACER has amended Article 6(15) to introduce: (i) the list of minimum requirements to the complementary approach addressing extreme price events; and (ii) the default approach described above, while allowing duly justified and documented alternatives.

(114) In their response to ACER's preliminary position, BNetzA recalls that a recurring criticism of the ERAA is that the investment resulting from the EVA does not reflect observed market developments and that increasing hurdle rates alone may not adequately capture investor behaviour. In BNetzA's view, investors do not base their decisions primarily on price limits, or at least not to the extent currently reflected in the modelling. BNetzA therefore considers that a revenue-cap such as ENTSO-E's approach constitutes an appropriate mechanism to reflect investors' expectation about extreme price events. Under this approach, revenues above a predefined cap are excluded from the EVA calculation. In the draft ERAA 2025, for target year 2028, this cap was set at EUR 1 000/MWh.

(115) ACER considers that this approach is not robust from a modelling perspective. By applying a fixed revenue cap independently of the distribution of revenues across Monte-Carlo sample years, the approach results in the same proportional discount of expected revenues regardless of whether price spikes are concentrated in a small number of extreme scenarios or spread more evenly across years. Consequently, it does not differentiate between fundamentally different risk profiles and fails to reflect the fact that price spikes concentrated in a few rare events are materially riskier (for example, years characterised by significant nuclear outages or prolonged low renewable output events), and therefore less investable, than revenues distributed across a broader set of system conditions.

(116) By contrast, the approach in the combined scenario[10] in the French national resource adequacy assessment, consisting in the partial discounting of the highest-revenue Monte-Carlo sample years, directly links the degree of revenue discounting to the distribution of revenues. Where expected revenues are heavily concentrated in a small number of extreme system situations, a larger share of those revenues is discounted. Conversely, where revenues are more diversified across years, the discount applied is lower. ACER considers that this approach provides a more coherent representation of investor behaviour towards risk and therefore constitutes a more realistic modelling of risk aversion in the EVA.

(117) In its response, BNetzA further notes that price interventions have occurred in practice and suggests that this supports the use of a revenue-cap mechanism.

(118) ACER observes that past public interventions in electricity markets have not been triggered by isolated price spikes occurring under otherwise normal market conditions, as implicitly assumed under a static revenue-cap approach. Rather, such interventions have been limited to exceptional electricity price crisis situations, as defined in Article 66a(1) of Directive (EU) 2019/944. In this respect, interventions are more closely aligned with scenarios characterised by extreme and systemic stress events. The French NRAA-type approach, which discounts revenues associated with extreme Monte Carlo sample years, more accurately reflects the type of situations in which regulatory intervention is plausibly expected.

(119) BNetzA considers the approach of setting a revenue cap to be in line with the Electricity Regulation, as it provides a way of taking investors' risk aversion into account. It does not interfere with technical price limits, but rather reflects the expectations of investors. The revenue cap in the EVA depicts which expectations about future prices investors consider for their investment decision.

(120) ACER indeed considers that if the revenue-cap would be interpreted as a price cap, it would not be aligned with the treatment of price caps under Article 10 of the Electricity Regulation and, by extension, with ACER decisions concerning day-ahead price limits.

(121) However, ACER also considers that a modelling assumption whereby all investors systematically disregard any prices above a predefined threshold, in particular where that threshold is set below the applicable day-ahead technical price limit, would equally raise concerns under the Regulation, for the following reasons:

- The Electricity Regulation is founded on the principles of free price formation and effective scarcity pricing (Article 3(b) and recital 24). Articles 10(1) and 10(2) require technical price limits to be set at sufficiently high levels linked to the value of lost load, so as not to unduly restrict scarcity price signals. Scarcity prices therefore constitute an integral component of the investment

[10] See recitals (92) and (93) of ACER Opinion 12/2025

signal envisaged by the Regulation, especially for flexible resources. A modelling approach that assumes that all investors in all types of technology, by definition, ignore all revenues above a fixed threshold would structurally suppress that signal within the assessment framework and contradict the Regulation.

- Moreover, the Electricity Regulation establishes a link between adequacy assessments and implementation plans. Where adequacy concerns are identified, Member States are required to address distortions to price formation before resorting to capacity mechanisms, including by assessing the removal or adjustment of price caps pursuant to Article 10 and the introduction of shortage pricing mechanisms (Article 20(3)(b) and (c)). The legal framework therefore treats strengthened scarcity pricing and higher effective price limits as corrective measures designed to improve investment incentives and mitigate adequacy concerns. If the EVA were constructed on the premise that investors categorically disregard prices above a lower modelling cap, the potential effect of such legally mandated remedies would be neutralised ex ante, which would be inconsistent with Article 20.

(122) In the AEWG consultation, BNetzA reiterated its request that the methodology explicitly allow the use of a revenue cap within the EVA. This position was supported by CRE and CNMC. CRE further noted that the revenue cap approach is one of the relevant methods for modelling risk aversion and has received quite positive stakeholder feedback during ENTSO-E's public consultation. It its advice, AEWG invited ACER to further consider BNetzA's proposal.

(123) ACER observes that ENTSO-E's survey on investor risk aversion shows hurdle rates are the primary tool used in practice to reflect investor risk aversion. Some respondents also indicated that they complement hurdle rates with additional measures, to address tail risks associated with extreme price events. The current wording of Annex I to this Decision is consistent with investor practices as it allows such complementary approaches, including mechanisms inspired by the French NRAA or alternative methods provided that they reflect investor risk aversion at least as robustly as the default approach.

(124) For these above reasons (see recitals 115, 116, 118, 120, 121 and 123), ACER has not included in Annex I to this Decision the possibility to introduce a revenue cap as a complementary approach for extreme price event treatment.

Revenue of flexible resources

(125) In the Proposal, ENTSO-E suggests that revenue streams shall be taken into account in the EVA only where they are deemed "relevant" for a given asset type, without defining which revenue streams fall within that category. The Proposal also does not specify, with sufficient clarity, which asset types would be associated with which revenue streams. ACER considers such an open-ended and discretionary approach incompatible with the requirements of transparency, predictability and interpretability that must guide the ERAA methodology. Allowing the set of revenue streams to completely

change at ENTSO-E's discretion from one ERAA edition to the next would undermine comparability over time and hinder stakeholders' ability to understand and assess the EVA results.

(126) ACER therefore considers it necessary to establish, in the methodology, a minimum (non-exhaustive) list of revenue streams that shall be considered in the EVA. This minimum list is intended to ensure a consistent treatment of the investor business case, while allowing the methodology to accommodate additional revenue streams where they show relevant.

(127) In its preliminary position, ACER proposed that, at a minimum, the EVA shall include the following revenue streams:

- **wholesale electricity market revenues**, for all assets, as wholesale market prices are explicitly modelled in the ERAA;
- **revenues from capacity mechanisms and other support schemes or subsidies**, for all assets benefiting from such support, as those revenues form part of the economic rationale for the corresponding investments;
- **ancillary services revenues**, for those asset types for which such revenues constitute a material driver of investment behaviour, as also supported by the responses to ENTSO-E's survey on investor risk aversion; and
- **intraday and short-term trading-related revenues,** including revenues associated with a 15-minute market time unit in actual market operations, for storage technologies, for which business cases are materially driven by short-term price volatility.

(128) ACER considers the inclusion of ancillary services revenues, short-term flexibility revenues essential. The non-consideration of these revenue streams in previous ERAA editions has weakened the modelled business case for certain flexible technologies, in particular storages, and has thereby biased EVA outcomes. Incorporating these revenue streams is necessary to ensure that the ERAA reflects realistic investment drivers and produces investment signals that are consistent with observed market behaviour, including the increasing deployment of storage and other flexible resources.

(129) ACER acknowledges that the endogenous modelling of ancillary services, intraday revenues and 15-minute MTU-related revenues may entail technical complexity. ACER therefore considers it proportionate to allow these revenue streams to be represented exogenously, including by relying on approaches already applied by TSOs at national level. To ensure consistent and robust implementation, ENTSO-E should: (i) identify TSOs that already conduct such analyses; and (ii) assess how corresponding revenues can be derived for modelled zones where such methodologies are not yet available, including by interpolation or other technically robust methods. This will ensure that essential revenue streams are reflected in the EVA and will improve the realism of investment signals, in particular for technologies such as storage and demand response, whose deployment in practice critically depends on such revenues.

(130) Accordingly, in its preliminary position, ACER has amended Articles 6(9a) to 6(9d) of the Proposal to define the minimum list of revenue streams that shall be considered in the EVA. ACER has further amended the Proposal to require ENTSO-E to carry out a study of national-level approaches developed by TSOs to model revenues from ancillary services, intraday markets and 15-minute MTU-related opportunities, and to assess how such approaches can be applied, adapted or approximated for modelled zones where no such methodologies are currently available.

(131) In its response to ACER's preliminary position, ENTSO-E considers that the requirement to include additional revenue streams in the EVA raises concerns regarding feasibility and data robustness. In particular, ENTSO-E argues that it may not be in a position to collect the relevant data in a sufficiently harmonised and consistent manner across all technologies and modelled zones. According to ENTSO-E, this could result in an incomplete representation of revenues, thereby introducing distortions or biases into the EVA outcomes. ENTSO-E further highlights that certain revenue components, such as support schemes, bilateral contracts or other commercially sensitive arrangements, may be subject to confidentiality constraints, which could limit ENTSO-E's ability to obtain or disclose the necessary information.

(132) ENTSO-E welcomes the inclusion of a survey of TSOs on national practices for estimating such revenues. However, it argues that a feasibility assessment should first be conducted regarding whether and how additional revenues can be incorporated in a pan-European ERAA setting. In ENTSO-E's view, requiring implementation before that feasibility assessment is completed would be premature.

(133) ENTSO-E also highlights the potential methodological and computational implications, in particular as regards revenues linked to 15-minute granularity. It notes that moving to a 15-minute resolution would materially increase modelling complexity. ENTSO-E further notes that, according to the responses to its investor survey, intraday revenues are generally not a material driver of investment decisions for thermal technologies, and therefore considers that the additional modelling effort may not be proportionate to the benefit.

(134) ACER considers that the inclusion of additional revenue streams is necessary to ensure that the EVA is fit for purpose, in particular for technologies whose business cases depend materially on revenues beyond the day-ahead wholesale market, such as storage and demand response. Excluding such revenues would risk systematically understating the profitability of these technologies and thereby distorting investment outcomes. ACER observes that ENTSO-E's investor survey identifies ancillary services and intraday revenues as material components of the business case for certain technologies. This is corroborated by national studies, including analyses carried out for TenneT on intraday revenues and for ELIA on ancillary services revenues, which indicate that these revenue streams can represent a significant share of total revenues.

(135) As regards ENTSO-E's concerns on data availability and potential bias, ACER considers that the systematic omission of material revenue streams currently creates a structural bias in EVA outcomes. In particular, under-representing revenues relevant to storage and other flexible resources may lead the EVA to produce investment signals

inconsistent with observed market developments, including by understating the economic viability of storage and overstating the relative attractiveness of thermal investment. In ACER's view, specifying minimum revenue streams and developing transparent estimation approaches is therefore necessary to improve the robustness of EVA results and reduce, rather than create bias.

(136) As regards revenues linked to 15-minute granularity, ACER does not share the view that their consideration necessarily entails excessive modelling complexity, given that Annex I to this Decision allows these revenues to be estimated exogenously. At the same time, in order to streamline implementation efforts for ENTSO-E, ACER has revised in Annex I to this Decision, its amendments to prioritise the inclusion of revenue streams for which there is already robust evidence of material relevance, notably ancillary services and intraday revenues. This phased approach enables ENTSO-E to focus its resources on the most significant flexibility-related revenue components, while preserving the possibility to further extend the modelling framework in the future should additional evidence confirm that the consideration of 15-minute granularity has a material impact on investment signals.

6.2.4.2. Construction period

(137) In previous ERAA editions, ENTSO-E has applied restrictions in the EVA on the earliest target year in which new capacity of specific technologies could enter the market, based on assumed lead times for project realisation. For example, in the ERAA 2024 edition, battery storage was not permitted to enter before 2026 and thermal units before 2028. In the Proposal, ENTSO-E seeks to formalise this practice by introducing a "construction period" limitation intended to reflect the time required for new investments to materialise. ENTSO-E further proposes that this period should include the time needed to obtain a grid connection.

(138) ACER considers that the term "construction period" could be misleading, as it may be understood as referring to a physical characteristic of the asset, rather than to the modelling constraint applied in the EVA. For reasons of clarity and legal certainty, ACER replaces this concept with a "technology-specific earliest entry year", which explicitly refers to the earliest target year in which new capacity of a given technology can realistically be assumed to enter the market within the EVA.

(139) ACER considers that the technology-specific earliest entry year should be determined by reference to the year of the ERAA edition and by assessing whether sufficient time exists for an investment to be realised before the target year concerned. In this context, the relevant time interval is the period from final investment decision to commissioning, including construction and commissioning activities.

(140) Accordingly, ACER has amended the Proposal by deleting references to "construction period" and by introducing the concept of "technology-specific earliest entry year".

(141) ACER does not agree with ENTSO-E's Proposal insofar as it would include, in the determination of the earliest entry year, the time required to obtain a grid connection. ACER considers that integrating such grid-related constraints into the EVA would

undermine the purpose and efficiency of the ERAA. Pursuant to Article 23 of the Electricity Regulation and the CISAF framework, the ERAA is designed to assess whether market-driven investments, under the existing market design, are sufficient to meet the reliability standard and thereby whether a capacity mechanism may be justified.

(142) Including constraints that are not related to investor behaviour, such as delays in obtaining grid connections or the lack of internal transmission capacity, would prevent ERAA from assessing the necessity of a capacity mechanism. These factors are not indicative of a market failure that could be addressed by a CM but rather reflect structural issues in the network. For example, a situation where adequacy is at risk because new capacity cannot be connected within the study horizon would not, in itself, justify a capacity mechanism, as a capacity mechanism cannot remove grid access bottlenecks. Such issues are instead more appropriately addressed through network development planning.

(143) For these reasons, ACER has amended Article 6(16a) in Annex I to this Decision to clarify that, for the purposes of determining the technology-specific earliest entry year, the relevant duration shall be limited to the period from final investment decision to commissioning, including construction and commissioning activities. ACER further clarifies that grid connection constraints shall not be taken into account when determining the earliest entry year.

6.2.4.3. Economic viability check

(144) In the Proposal, ENTSO-E introduced an alternative approach to the EVA referred to as the economic viability check ("EVC"). Under the EVC, the outcome would be expressed as a probability (or likelihood) of capacity being present, rather than as a deterministic investment outcome. ENTSO-E further proposes that these probabilistic outcomes would subsequently be converted into a deterministic investment plan for the purposes of the economic dispatch simulations.

(145) The Proposal also envisaged (i) the possibility of applying the EVC to a single target year in isolation; and (ii) the possibility of incorporating additional entry and exit barriers into the EVC, without specifying ex ante which barriers would be applied and how.

ACER assessment on the consideration of individual target years

(146) ACER considers that allowing the EVC to be applied to a single target year in isolation would be inconsistent with the purpose and legal requirements of the ERAA. Article 23(1) of Regulation (EU) 2019/943 requires the ERAA to assess adequacy for each year within a ten-year horizon. Investment and decommissioning decisions are inherently intertemporal, as investors assess expected profitability and risk over multiple years. A single-year assessment would therefore fail to reflect investor behaviour, for example where an investment is profitable in one target year but is expected to be unprofitable in subsequent years and would therefore not be undertaken.

(147) For these reasons, ACER has amended Article 6(16b) in Annex I to this Decision to remove the possibility of applying the EVC to a single target year independently.

(148) In its response to ACER's preliminary position, ENTSO-E argues that applying the EVC on a yearly basis could provide meaningful insights into the viability of different types of economic decisions and may better reflect real-world behaviour, in particular for existing capacity resources that reassess their market position on a continuous basis.

(149) ACER acknowledges that a single-year assessment may provide relevant information for new investment decisions. An investment should not be assumed to occur if the asset is not expected to be profitable in the year of commissioning.

(150) As regards decommissioning decisions, ACER does not agree that a single-year negative outcome should automatically trigger exit. Investors may maintain assets in operation during temporarily unprofitable periods where improved market conditions are anticipated in subsequent years (e.g. when demand is expected to increase). This dynamic may help explain why substantial early-year decommissioning projected in certain ERAA editions has not materialised in practice. Accordingly, ACER considers that economic viability assessments should not, by default, rely exclusively on a single-year modelling framework, as this could distort entry/exit signals.

Entry and exit barriers

(151) ACER further considers that the Proposal cannot be accepted insofar as it would allow ENTSO-E to introduce, on a discretionary basis, additional entry or exit barriers into the EVC without defining them ex ante in the methodology. Any structural barriers that materially affect investment or closure decisions must be specified transparently and ex ante in the ERAA methodology, just as the earliest entry year (construction period).

(152) Accordingly, ACER amends the methodology to remove the possibility for the EVC to incorporate additional, unspecified entry and exit barriers. At the same time, following the example provided by ENTSO-E, ACER introduces the concept of a technology-specific "earliest exit year", reflecting that an asset cannot be assumed to decommission instantaneously and that closure decisions are also subject to realistic temporal constraints.

(153) In its response to ACER's preliminary position, ENTSO-E considers that the EVC should allow for the consideration of additional, context-specific entry and exit barriers, including regulatory, technological or locational constraints, which may not be fully captured through high-level parameters such as hurdle rates. ENTSO-E argues that such barriers may differ across Member States, technologies and individual units, and that their inclusion should therefore not be excluded in principle. At the same time, ENTSO-E proposes that any such adjustments be subject to appropriate justification, in line with other methodological elements.

(154) ACER does not share this view. Allowing the methodology to incorporate unspecified and wide-ranging entry or exit barriers, even subject to justification, would introduce significant ambiguity into the ERAA framework. Such open-ended discretion would

reduce predictability and make it difficult for Member States and stakeholders to understand ex ante which factors may be reflected in the ERAA and how they are operationalised. ACER considers that any structural barriers that materially affect investment or decommissioning decisions must be clearly defined in the methodology itself. This ensures transparency, comparability across editions, and consistent application of the ERAA. Moreover, ACER does not see a principled basis for limiting the consideration of such barriers to the EVC approach. If these barriers materially affect economic decisions, they would equally be relevant for the broader EVA.

(155) In its response to ACER's preliminary position, the Dutch Ministry emphasises the importance of allowing the use of the EVC in the context of NRAAs. It argues for the robustness of the EVC developed in the Dutch NRAA.

(156) ACER notes that the EVC remains permitted, as it is explicitly provided for in Annex I to the Decision, and acknowledges the efforts undertaken in the Dutch NRAA to represent additional revenue streams, which enhance the robustness of the assessments. ACER further clarifies that the deletion, from the ERAA methodology, of an open-ended possibility to incorporate unspecified additional entry–exit barriers does not prevent Member States from reflecting national specificities in NRAAs. Article 24 of Electricity Regulation requires NRAAs to include central reference scenarios as referred to in Article 23(5)(b) and provides that NRAAs are subject to ACER's opinion. Within that framework, Member States may introduce national adaptations, including, where duly justified, the consideration of additional barriers relevant to investment or decommissioning decisions. ACER's role is to assess, on a case-by-case basis in the context of the Article 24 opinion process, whether the differences between the NRAA and the ERAA are justified.

Conversion of probabilistic outcomes into deterministic inputs for adequacy metrics

(157) ACER considers it acceptable for ENTSO-E to express the EVA results as a likelihood of each of the decision variables, provided that the ERAA continues to produce deterministic adequacy metrics and CM-related parameters in accordance with the methodology. However, the conversion of probabilistic outcomes into a deterministic investment plan cannot be performed in an arbitrary manner, as this would undermine transparency and interpretability.

(158) ACER considers that such conversion must be consistent with the viability assessment criteria foreseen in the EVA itself. In particular, Article 6(4a) establishes the approach for translating uncertain revenues and risks into deterministic investment decisions through risk-adjusted criteria. For example, where hurdle rates are used to represent investor risk aversion, an asset is deemed economically viable where its expected risk-adjusted return exceeds its technology-specific hurdle rate. Accordingly, the EVA/EVC outcome should correspond to an equilibrium in which no economically viable technologies remain uninvested and no economically non-viable technologies are assumed to be invested.

(159) Accordingly, ACER has amended the Proposal to clarify that any conversion of probabilistic EVC outcomes into a deterministic investment plan for the purposes of the economic dispatch shall apply the same economic viability criteria as those used in the EVA pursuant to Article 6(4a). ACER has further amended the Proposal to require that, where EVC results are expressed in probabilistic form, ENTSO-E shall nevertheless derive deterministic adequacy metrics.

6.2.5. CM-related parameters

6.2.5.1. Parameters to deliver

(160) In the Proposal, ENTSO-E provides that de-rating factors, total firm capacity need and adequacy gaps ("CM-related parameters") would be calculated by each Member State, or by an entity designated by it, and subsequently communicated to ACER for publication.

(161) The Commission's Streamlining Report requested that the ERAA methodology contain a post-process enabling the direct identification of the volume to procure for each bidding zone, linked to the adequacy gap identified in the model. Consistently, ACER requested ENTSO-E to propose amendments enabling the ERAA to indicate, for each modelled zone with an identified adequacy concern, the relevant parameters supporting the dimensioning of a potential capacity mechanism.

(162) ACER considers ENTSO-E's proposal to compute the total firm capacity need rather than determining the volume to procure to be acceptable. ERAA is indeed an appropriate tool to calculate the total firm capacity need, as this parameter follows directly from the adequacy modelling undertaken by ENTSO-E.

(163) By contrast, the subsequent conversion of the computed total firm capacity need into the volume to procure requires subtracting:

- capacity that is not eligible to participate in the CM;
- capacity whose participation in the CM is restricted or excluded due to support schemes, subsidies, or other policy instruments; and
- the maximum entry capacity (MEC).

(164) The first two elements rely on information that is not readily available to ENTSO-E, specifically national choices regarding CM design and the various support schemes implemented by each Member State, which also affect the eligibility of capacity to participate in the CM. It is therefore proportionate that the ERAA provides the total firm capacity need and the adequacy gap as a common basis, while the translation into "volume to procure", where required for the CM auction, is performed at national level and is verified during the CM approval process. The third element, namely the MEC, must be calculated by the regional coordination centres (RCCs) and published in accordance with the Technical specifications for cross-border participation in capacity mechanisms, approved by ACER Decision 36/2020. This information is therefore

publicly available and accessible to Member States for the purpose of CM dimensioning.

(165) ACER therefore accepts, in principle, the approach to compute the total firm capacity need and the adequacy gap within the ERAA, while noting that the ERAA cannot, on its own, determine a Member State's final "volume to procure" without relying on national inputs on eligibility and support-scheme constraints.

6.2.5.2. Delivery of CM-related parameters

(166) ACER considers that ENTSO-E's organisational set-up proposal cannot be retained, insofar as it would set direct requirements to Member States or entities designated by them. ACER's decision amending the ERAA methodology is addressed to ENTSO-E and cannot impose direct obligations on Member States or designated entities.

(167) In its preliminary position, ACER further considered that the computation and publication of CM-related parameters should remain an integral part of the ERAA for all modelled zones with an adequacy concern, for the following reasons:

- **Consistency with the streamlining report**

The Streamlining Report envisages a post-process within the ERAA in order to enable the direct identification of the volume to procure and the public availability of de-rating factors with ACER oversight. This is best achieved by requiring ENTSO-E to compute and publish the relevant parameters as part of the ERAA under a methodology approved by ACER;

- **Interpretability and quantification of adequacy concerns**

The CM-related parameters fulfil an essential diagnostic function within the ERAA, as they enable a proper interpretation of the adequacy situation. In particular, understanding the adequacy situation requires an appreciation of the magnitude of any expected shortfall and the factors driving that outcome. Total firm capacity needs and adequacy gaps provide a transparent quantification of the magnitude of the adequacy concern, while de-rating factors explain how different technologies contribute to meeting the reliability standard under scarcity conditions.

In relation to the identification of the sources of possible resource adequacy concerns, Article 23(5)(k) of the Electricity Regulation requires the ERAA to identify whether such concerns relate to a network constraint, a resource constraint, or both. De-rating factors are directly relevant to this requirement, as they allow stakeholders to understand which technologies contribute effectively to resource adequacy and thereby support the interpretation of the drivers of any adequacy concern.

Similarly, the firm capacity required under the with-CM scenario and the corresponding adequacy gap indicate, for each modelled zone, both:

- the total amount of capacity required to meet its reliability standard; and
- the additional capacity that would be needed on top of what is expected to be delivered by the market without a CM.

Together, these parameters provide a consistent and transparent measure of the magnitude of the adequacy concern for each modelled zone and target year. Publishing these parameters also enables Member States to monitor whether the capacity required to meet their own reliability standards, and those of their neighbours, is materialising in practice.

- **Simplicity and efficiency for Member States**

Providing CM-related parameters as an integral part of the ERAA makes the CISAF fast-track procedure practically usable by Member States. If these parameters were computed separately, or only on request, this would likely introduce additional administrative steps, which would lead to potential delays and run counter to the objective of streamlining and simplifying the CM approval process.

- **Efficiency and proportionality of computing the CM-related parameters in the ERAA**

Computing the CM-related parameters does not impose a disproportionate burden on ENTSO-E. The ERAA methodology provides approaches that allow these parameters to be derived directly from the results of the adequacy simulations, using simple and transparent post-processing steps.

By contrast, if another entity were required to compute these parameters outside the ERAA, it would first need to build a complex technical infrastructure to receive, store and process the full set of ERAA simulation data. This would be significantly more complex and error prone than requiring ENTSO-E to perform the post-processing itself.

(168) In light of the above, ACER proposed in its preliminary position to amend Article 12 of the methodology to require that ENTSO-E: (i) compute the CM-related parameters as an integral part of the ERAA through a transparent post-processing step; and (ii) publish those parameters, in accordance with the methodology, for all modelled zones and target years in which an adequacy concern is identified. ACER has also introduced the relevant definitions in Article 2.

(169) In their responses to ACER's preliminary position, the Italian and Spanish Ministries, CRE, as well as ENTSO-E, argue that requiring the computation and publication of CM-related parameters for all modelled zones, including those of Member States that do not intend to use the CISAF fast-track procedure, would be disproportionate. In their view, such publication would encroach on Member States prerogative to decide their CM parameters and publication could undermine Member States' ability to address adequacy concerns through their NRAAs. During the oral hearing, the Italian Ministry

further argued that the publication of ERAA CM-related parameters may create ambiguity in cases where Member States intend to rely on parameters derived from their NRAAs.

(170) By contrast, the Dutch and Luxemburg Ministry support the computation and publication of CM-related parameters for all relevant modelled zones, considering that such publication enhances transparency and improves the interpretability of ERAA results in an interconnected system.

(171) ACER does not share the view that the publication of CM-related parameters for all modelled zones with an identified adequacy concern affects Member States' prerogatives. The inclusion of such parameters in the ERAA does not constrain Member States in their choice of instruments to address adequacy concerns, nor does it prevent them from relying on NRAAs for the purposes of State aid approval. The CISAF fast-track procedure constitutes an additional procedural option; it neither replaces existing routes nor limits Member States' ability to rely on national assessments and processes in accordance with Union law.

(172) At the same time, ACER acknowledges the concern expressed that the simultaneous publication of ERAA CM-related parameters and nationally derived parameters could, in certain cases, lead to potential ambiguity, particularly where a Member State intends to rely exclusively on its NRAA for the design and dimensioning of its capacity mechanism.

(173) Considering the above, ACER has revised its preliminary position to introduce the possibility for a Member State to request that ENTSO-E does not compute CM-related parameters for the relevant modelled zone.

(174) The Italian, Spanish, German and Belgian Ministries and ENTSO-E also mention that it should be acknowledged that NRAAs might be able to better account for national specificities in the way CM-related parameters are computed.

(175) ACER acknowledges that NRAAs can capture certain national specificities that may not be reflected in a pan-European assessment. Furthermore, Member States are permitted to rely on NRAAs in the context of State aid assessment. This is illustrated by recent State aid practice, including the Commission decision approving the reform of the French capacity mechanism, which relied on the French NRAA and the related ACER's opinion. This approval was based on Guidelines on State aid for climate, environmental protection and energy 2022.

(176) In their response to ACER's additional amendments, the Belgian and German Ministries and ENTSO-E argue that it would be preferable that the computation of CM-related parameters be based on an opt-in mechanism, rather than an opt-out mechanism. In their view, it would be preferable that only Member States that explicitly request the computation of such parameters would have them calculated and published. The Belgian and German Ministries consider that this approach would ensure that CM-related parameters are produced only where genuinely needed and would avoid unnecessary modelling efforts.

(177) By contrast, the Luxembourg Ministry argues that the opt-out option should not be introduced and that CM-related parameters should be computed and published for all modelled zones exhibiting an adequacy concern. In the Ministry's view, this would enhance transparency and comparability, as ENTSO-E's computation would provide a common baseline across Member States. It would also facilitate regional coordination by making adequacy gaps in neighbouring Member States more visible.

(178) ACER agrees with the Luxembourg Ministry that the systematic computation and publication of CM-related parameters enhance transparency, comparability and the interpretability of ERAA results. In particular, for the purpose of dimensioning capacity mechanisms, access to CM-related parameters beyond a Member State's own bidding zone(s) can support national authorities in making well-informed decisions. The firm capacity required to meet a given reliability standard depends not only on domestic capacity but also on the capacity expected to be available in neighbouring Member States and, more broadly, on the adequacy situation across interconnected systems. Providing access to parameters for a wide range of modelled zones therefore supports Member States in assessing cross-border contributions and verifying whether the assumptions underpinning their security-of-supply assessments are materialising in practice.

(179) At the same time, ACER acknowledges concerns raised by certain Member States, including Italy, that the coexistence of ERAA-derived parameters and NRAA-derived parameters could lead to potential ambiguity where national authorities rely on NRAA results for the design and notification of capacity mechanisms.

(180) Balancing these considerations, ACER considers that an opt-out approach strikes the appropriate balance between ensuring transparency and interpretability as the default and preserving the possibility for Member States to request that CM-related parameters are not computed or published for their modelled zone. ACER therefore considers this approach preferable to an opt-in system, under which transparency and interpretability would not be ensured by default.

(181) ACER further observes that an opt-out mechanism is preferable to an opt-in mechanism from a risk-management perspective. If a Member State were to omit opting in despite needing the parameters, the absence of published CM-related parameters could create practical difficulties. By contrast, where a Member State does not wish to rely on ERAA-derived parameters, the publication of such parameters does not constrain its ability to rely on its NRAA for national decision-making or State aid notification.

(182) Finally, ACER notes that even where a Member State does not intend to rely on the ERAA-derived parameters, their computation and publication contribute to overall transparency and regional understanding of adequacy developments. As highlighted by the Dutch and Luxembourg Ministries, such transparency constitutes an intrinsic value of the ERAA framework.

(183) During the AEWG consultation, E-Control proposed to introduce a clearer procedural framework for the opt-out mechanism in Article 10(1)(f). Specifically, E-Control suggested that, in the context of the ECG consultation on scenarios, sensitivities, input

variables and assumptions, ENTSO-E should also consult on the possibility of calculating the CM related parameters pursuant to Article 12. This comment was supported by CRE, ACM, CNMC and ERSE. In its advice, the AEWG invited ACER to further consider E-Control's proposal.

(184) ACER agrees that clarifying the arrangements for the opt-out mechanism enhances transparency, and that the ECG consultation on scenarios, sensitivities, input variables and assumptions is an appropriate channel to also consult the Member States on the option to opt-out of the computation of the CM-related parameters. ACER has therefore amended Article 10(1)(f) to explicitly refer, in the context of that consultation, to the possibility for Member States to request that CM-related parameters not be computed for their modelled zone.

(185) In their responses to ACER's preliminary position, the Slovak, Spanish, Italian Ministry and ENTSO-E express the view that including the computation of CM-related parameters within the ERAA would increase the computational burden on ENTSO-E, which could lead to potential delays. ENTSO-E and the Spanish Ministry also point out to amendments introduced by ACER that introduce complexity for ENTSO-E and that deviate from a simple post processing process.

(186) ACER agrees with the fact that the computation of CM-related parameters should remain feasible for ENTSO-E in the ERAA timeline. For this reason, through the amendments mention in section 6.2.5.3, 6.2.5.6 and 6.2.5.7, ACER has ensured that, for each CM-related parameter, the methodology provides for an approach based on limited post-processing of ERAA scenario outputs.

(187) In its response to ACER's preliminary position, ENTSO-E considers that the Streamlining Report is not a legally binding instrument and cannot therefore expand the scope of the ERAA beyond what is provided for in Regulation (EU) 2019/943. ENTSO-E further argues that parameters such as the total firm capacity need and de-rating factors are not designed to identify the drivers of adequacy concerns and therefore fall outside the scope of the ERAA. In this context, ENTSO-E refers to other diagnostic indicators, including the probability of simultaneous scarcity events, demand percentiles, cross-border contributions during scarcity and the spatial and temporal distribution of ENS, as more appropriate tools for understanding the adequacy situation.

(188) ACER notes that the Electricity Regulation requires the Commission to prepare the Streamlining Report for a specific purpose: streamlining and simplifying the process of applying a CM, and to ensure that adequacy concerns can be addressed by Member States in a timely manner. In that context, the Regulation requires the Commission to request that ACER amend the ERAA methodology as appropriate. The Streamlining Report cannot therefore be regarded merely as a policy document, but as a required step in the legally binding process for amending the ERAA methodology, envisaged by the legislator. At the same time, ACER considers that the inclusion of CM-related parameters in the ERAA neither contradicts nor exceeds the current methodological scope defined in Article 23 of the Electricity Regulation. As explained in Recital (167), those parameters contribute to the interpretation and quantification of adequacy concerns and therefore fall within the scope and objectives of the ERAA.

(189) ACER further considers that the existence of other adequacy indicators serving different purposes does not render CM-related parameters redundant or outside the scope of the ERAA. Rather, CM-related parameters perform a complementary function by providing a quantified measure of adequacy gaps, total firm capacity need and of the contribution of different technologies to meeting the reliability standard.

(190) ENTSO-E also questions ACER's argument that computing the total firm capacity need within the ERAA enhances simplicity and efficiency, given that national calculations remain necessary anyway in order to determine the final volume to be procured in a capacity mechanism auction.

(191) ACER considers that the determination of the volume to be procured can be conceptually separated into two distinct steps. The first step consists in determining the total amount of firm capacity required to meet the applicable reliability standard. The second step consists in translating that system-wide capacity need into an auction volume, taking into account national design choices, including eligibility rules and the contribution of assets that are not eligible to participate in the capacity mechanism. The first step is the computation of a high level adequacy indicator and can be performed within the ERAA, as it directly results from the adequacy modelling and relies on the probabilistic simulations and large datasets generated in that context. This step constitutes the complex component of the process in terms of data management and can be efficiently carried out by ENTSO-E as part of the ERAA. The second step, by contrast, concerns simple computations based detailed policy and design choices of the CMs for which the information is better available to Member States. Given this clear functional separation, ACER does not see any impediment to ENTSO-E determining the total firm capacity need within the ERAA, while Member States remain responsible for determining, at national level, the auction volume in light of their specific capacity mechanism design.

(192) In its answer to ACER's preliminary position, ENTSO-E argues that ACER does not have a role in the approval of capacity mechanism parameters and that neither the CISAF framework nor the ERAA methodology can be used to create such a role.

(193) ACER agrees that it does not have an approval role with regard to national capacity mechanism parameters. The ERAA methodology does not confer such a role on ACER, nor does it alter the allocation of competences established under Union law. Member States remain free to determine the parameters of their capacity mechanisms and to submit them for State aid approval. The inclusion of CM-related parameters in the ERAA does not modify this institutional balance. Its purpose is to streamline and simplify the process of applying a CM, and to ensure that adequacy concerns can be addressed by Member States in a timely manner, in line with the objectives of Article 69(3) of the Electricity Regulation.

6.2.5.3. De-rating factors computation

(194) In the Proposal, ENTSO-E proposes to compute de-rating factors as the ratio between an asset's actual production during scarcity periods and its installed capacity. For

thermal units, ENTSO-E further proposes a simplified approach based on the forced outage rates of those assets.

(195) ACER considers that the Effective Load Carrying Capability (ELCC) approach may provide a more accurate measure of reliability contribution. It quantifies the extent to which an additional megawatt (MW) of a given technology reduces the energy not served, as compared to a fictional perfect capacity. This method directly links capacity value to adequacy outcomes and is already applied in various systems[11]. At the same time, ACER acknowledges that the implementation of an ELCC-based approach for all technologies may entail computational complexity.

(196) ACER therefore proposed in its preliminary position to set the ELCC approach as a default approach but also allows the use of alternative simpler approaches. In this respect, the simplified approaches integrated by ACER in the methodology builds on the approach proposed by ENTSO-E and on practices applied by TSOs at national level.

(197) In their responses to ACER's preliminary position, the Spanish Ministry and ENTSO-E argue that the ELCC approach is computationally complex and should therefore not be designated as the default method for the calculation of de-rating factors. ENTSO-E further argues that identifying the ELCC approach as a default method could create an expectation that it must systematically be applied, notwithstanding its significantly higher computational burden compared to alternative approaches.

(198) ACER acknowledges that the ELCC approach is substantially more computationally demanding than the other methodologies available for the calculation of de-rating factors. For this reason, ACER has amended Article 12 of the methodology so that the ELCC approach is no longer designated as the default method, but is instead placed on an equal footing with the other permitted approaches for the computation of de-rating factors.

6.2.5.4. Set of de-rating factors

(199) ACER considers that the reliability contribution of individual capacity resources may depend on the capacity mix assumed to address an adequacy gap. In particular, the capacity value of energy-limited resources, such as battery storage and demand response, may vary materially with their penetration level and with the availability of complementary energy-providing resources. Such interaction effects are increasingly relevant in the context of capacity mechanism design.

(200) ACER considers that deriving de-rating factors under a single, implicitly assumed capacity mix may not fully capture these interaction effects. This may limit the interpretability of ERAA results, especially in systems undergoing rapid structural change where multiple technically plausible pathways exist to close identified adequacy

[11] ELCC-based methods are used in Ireland, in Great Britain, and in multiple electricity systems in the United States.

gaps. Allowing ENTSO-E to assess de-rating factors under alternative, technically plausible capacity mixes can provide additional insight into how different portfolios contribute to adequacy and how the effective firm capacity contribution of individual asset types evolves as deployment scales.

(201) Such an approach is particularly relevant for energy-limited resources, whose reliability contribution is sensitive to scarcity duration, charging opportunities, and the availability of energy-providing capacity. Assessing de-rating factors across alternative mixes can therefore help illustrate substitution and complementarity effects between technologies, improve transparency regarding system interactions, and support a more robust interpretation of adequacy outcomes.

(202) Accordingly, ACER considers it appropriate to allow ENTSO-E to derive supplementary sets of de-rating factors reflecting alternative capacity mixes that are technically capable of addressing the identified adequacy gap, provided that such mixes are plausible and clearly specified and that the computation is performed in accordance with the de-rating factor approaches set out in the methodology. Such supplementary sets may also support Member States that apply dynamic de-rating factors in their capacity mechanisms.

(203) In light of the above, ACER amends Article 12 by introducing paragraph 8, which allows for the computation of supplementary sets of de-rating factors reflecting alternative plausible capacity mixes to fill the adequacy gap.

6.2.5.5. Scenarios to compute CM-related parameters

(204) ACER considers that CM-related parameters should, as a general rule, be derived from the with-CM central reference scenario(s). This is consistent with the approach used for the computation of the MEC and reflects that, unlike without-CM scenarios, with-CM scenarios appropriately capture the adequacy effects of capacity mechanisms implemented in neighbouring Member States. Taking those cross-border effects into account is necessary to support proportionate capacity mechanism dimensioning, in line with the proportionality requirement set out in Article 22(1)(c) of Regulation (EU) 2019/943[12]. ACER further considers that deriving all CM-related parameters from the same central reference scenario is necessary to ensure internal consistency and comparability of results.

(205) ACER acknowledges, however, that ENTSO-E may not be in a position to produce with-CM central reference scenarios for all target years in the ERAA 2026, ERAA 2027 and ERAA 2028 editions. In order to ensure that Member States can continue to rely on ERAA outputs, including for the purposes of the CM fast-track approval procedures,

[12] This rationale is also met where CM-related parameters are derived from a reliability-standard-adjusted scenario that preserves the cross-border adequacy effects reflected in the corresponding with-CM central reference scenario.

during this transitional period, ACER considers it appropriate to provide that, for a limited time, in particular, for the ERAA 2026, ERAA 2027 and ERAA 2028 editions only, CM-related parameters may be derived from the without-CM central reference scenario for the target years where the corresponding with-CM central reference scenario is not available. From the ERAA 2029 edition onwards, ENTSO-E shall ensure that CM-related parameters are derived from a with-CM central reference scenario, in accordance with the methodology.

(206) In light of the above, ACER has amended Article 12 of the methodology to establish the with-CM central reference scenario(s) as the general basis for the computation of CM-related parameters, subject only to the temporary derogation explicitly provided for the ERAA 2026, ERAA 2027 and ERAA 2028 editions.

(207) In their responses to ACER's preliminary position, ENTSO-E and the Spanish Ministry argue that requiring CM-related parameters to be derived from the with-CM central reference scenario would encroach on Member States' prerogative to determine their own security-of-supply settings, and that Member States should retain the discretion to choose which scenario is used for CM dimensioning.

(208) ACER notes that the ERAA methodology cannot and is not intended to affect Member States' prerogatives in this area. Member States remain free to rely on the CM parameters they choose for State aid notifications, and a Member State may request ENTSO-E not to compute CM-related parameters for its modelled zone. The methodology therefore does not remove national discretion; it provides a Union-level, transparent and consistent source of parameters that Member States may use as an optional fast-track input to national processes.

(209) ACER further considers that, as a methodological rule, CM-related parameters should generally be derived from with-CM central reference scenarios rather than from without-CM scenarios. The without-CM scenario is a hypothetical construct used to assess market outcomes in the absence of any capacity mechanisms and related measures; it does not reflect how the system is expected to operate in the presence of approved capacity mechanisms. By contrast, the with-CM scenario represents the expected system state when capacity mechanisms that have been approved are assumed to be in place, and therefore better captures the adequacy situation relevant to CM dimensioning. This approach is consistent with practice observed in NRAAs (for example, the French NRAA accounts for capacity expected to be contracted under other Member States' mechanisms) and with the common technical view that CM parameters are most robust when derived from a scenario in which the relevant modelled zone is near its reliability standard.

(210) The Spanish Ministry further argues that requiring CM-related parameters to be derived from the with-CM central reference scenario entails additional complex simulations, compared to their computation based on the without-CM scenario.

(211) ACER does not share this view. The execution of a with-CM central reference scenario constitutes a legal requirement under Article (23)(5)(f) of the Electricity Regulation. Accordingly, that scenario must be produced irrespective of the computation of CM-

related parameters. The extraction of CM-related parameters from the with-CM scenario therefore does not in itself generate an additional modelling obligation, but rather makes use of simulations that are required in any case. Moreover, as explained above, the with-CM central reference scenario constitutes the appropriate basis for the computation of CM-related parameters, as it reflects the expected evolution of the system, including approved capacity mechanisms. ACER therefore considers it both coherent and proportionate to derive CM-related parameters from that scenario.

6.2.5.6. Complexity of the computation

(212) In its response to ACER's preliminary position, ENTSO-E argues that the scope of the ERAA, as defined in Article 23(1) of Regulation (EU) 2019/943, is limited to identifying resource adequacy concerns. In its view, requiring ENTSO-E to adjust scenarios so that one or more Member States meet their reliability standard solely for the purpose of estimating CM-related parameters would exceed that scope. ENTSO-E further considers that such an approach could entail a significant computational burden, as it may require multiple iterative simulations.

(213) ACER clarifies that its amendments were not intended to introduce a systematic obligation to recalibrate modelled zones to their reliability standard. In particular, ACER acknowledges the ENS post-processing approach proposed by ENTSO-E as a valid alternative to a full recalibration of the scenario. To remove any ambiguity, ACER has therefore amended the methodology to make explicit that both options (i) post-processing of the ENS curve and, (ii) where technically feasible, a targeted recalibration are permissible.

(214) ENTSO-E further argues that the recalibration required under the reliability-standard-adjusted scenario would fall outside the scope of the ERAA and would entail a significant computational burden, as it would require additional simulations for multiple modelled zones.

(215) ACER acknowledges that implementing a reliability-standard-adjusted scenario would require recalibration of all modelled zones for which a reliability standard applies and would therefore entail additional simulations. However, ACER emphasises that the use of such a scenario is optional under the amended methodology. The provisions defining the reliability-standard-adjusted scenario do not impose a mandatory obligation on ENTSO-E to perform such recalibration. Rather, they provide an alternative methodological pathway for the computation of CM-related parameters, should ENTSO-E consider it appropriate. Consequently, these provisions do not extend the scope of the ERAA nor impose an additional computational requirement.

(216) In their responses to ACER's preliminary position, ENTSO-E and the Spanish Ministry argue that the "decrease process" introduced for the computation of the total firm capacity need, applicable where a modelled zone exhibits an adequacy concern in the without-CM scenario but not in the with-CM scenario, should be removed. ENTSO-E and the Spanish Ministry further question the practical relevance of this calculation. Additionally, ENTSO-E notes that ACER does not specify a detailed methodology for performing such a calculation and that ENTSO-E would therefore need to develop a

new methodological approach, which would introduce additional complexity and computational burden.

(217) ACER considers that there remains a rationale for computing CM-related parameters for modelled zones that do not have an approved capacity mechanism and that display an adequacy concern in the without-CM central reference scenario but not in the with-CM central reference scenario, as an adequacy concern is still identified for those modelled zones under the assumption that no capacity mechanisms are implemented. However, ACER acknowledges the concerns raised regarding the need for ENTSO-E to develop and validate a specific "decrease process", which could introduce additional methodological complexity and implementation burden. In order to streamline implementation and avoid the need to establish a new dedicated process, ACER has amended the methodology to provide that, for such modelled zones only, CM-related parameters shall be computed on the basis of the without-CM central reference scenario. ACER further notes that this adjustment does not affect modelled zones with an approved capacity mechanism, which are the most directly concerned by the computation of CM-related parameters and which, by construction, are aligned with their reliability standard in the with-CM scenario. Finally, this amended approach is consistent with the treatment applicable where no with-CM scenario is produced.

6.2.5.7. Total firm capacity need

(218) In the Proposal, ENTSO-E provides that the total firm capacity need shall be computed on the supply side as the sum of de-rated capacity. ACER considers that this approach has default in term of transparency, interpretability and methodological robustness. In particular, a supply-side computation depends directly on the estimation of de-rating factors, which may be derived using different methodological approaches and assumptions, thereby introducing additional variability and reducing replicability.

(219) ACER considers that computing the total firm capacity need on the demand side, based on the average demand observed during scarcity hours, provides a clearer and more transparent indicator of the capacity required to meet the reliability standard. Such an approach is easier to interpret, relies on fewer modelling assumptions, and can be replicated more readily by stakeholders.

(220) In light of the above, in its preliminary position, ACER proposed to amend Article 12 of the methodology to require that the total firm capacity need be computed on the demand side, on the basis of demand during scarcity hours, rather than as the sum of de-rated capacity.

(221) In their responses to ACER's preliminary position, ENTSO-E and the Spanish Ministry argue that the supply-side approach to the computation, as initially proposed by ENTSO-E, is simpler to implement, as it is less sensitive to whether a modelled zone is aligned with its reliability standard and could therefore reduce the need for additional recalibration of the modelled zone.

(222) ACER considers, however, that the suitability of the supply-side approach depends on the methodology used to compute de-rating factors. In particular, the supply-side

approach can be appropriate where de-rating factors represent an average contribution of each resource to adequacy. By contrast, where de-rating factors are derived using a marginal approach, such as the ELCC method, it would not be methodologically sound to apply those de-rating factors to the total installed capacity of a given technology. In light of this, ACER has amended the methodology to allow the use of the supply-side approach proposed by ENTSO-E only where de-rating factors are computed using an average-based methodology.

6.2.6. Sensitivities

(223) In the Proposal, ENTSO-E provides for the possibility to identify adequacy concerns on the basis of sensitivities.

(224) ACER recalls that, pursuant to Article 2 of the methodology, a "sensitivity" is a variation of a scenario. Sensitivities are designed to test how adequacy results change when key assumptions or input parameters are altered. Therefore, sensitivities serve to assess the robustness of results, rather than to represent the most plausible or expected evolution of the power system. For this reason, ACER considers that sensitivities cannot serve as a basis for the identification of adequacy concerns, which must be assessed on the basis of central reference scenarios reflecting the best estimate of future system conditions.

(225) This interpretation is consistent with the Electricity Regulation, which distinguishes between central reference scenarios and sensitivities and assigns them different functions. In particular, Article 23(5)(b) refers to sensitivities in the context of testing the impact of variations in, inter alia, extreme weather events, hydrological conditions, wholesale prices and carbon price developments. This confirms that sensitivities are tools to assess the robustness of adequacy outcomes under alternative assumptions, rather than scenarios for determining whether an adequacy concern exists. ACER further notes that the probability of extreme events is, in any event, already reflected within central reference scenarios through the probabilistic modelling framework and the associated probabilities of occurrence.

(226) ACER further considers that identifying adequacy concerns on the basis of sensitivities would be conceptually inconsistent with the probabilistic meaning of the LoLE metric and reliability standard. The comparison of LoLE to a reliability standard presupposes that the probability distribution used in the assessment reflects the best estimate of real-world system conditions. Sensitivities, by design, constitute hypothetical variations around a central reference scenario and do not represent the probability distribution of future outcomes. Using sensitivities as a basis for identifying adequacy concerns would therefore undermine the probabilistic interpretation of both LoLE and the reliability standard.

(227) This approach is consistent with ACER Decision 24/2020 approving the ERAA methodology, which specified that the identification of resource adequacy concerns relies on central reference scenarios, as those scenarios combine the best forecast of future market and system conditions and thereby ensure a realistic identification of adequacy concerns (see paragraph 111 of ACER Decision 24/2020).

(228) In light of the above, ACER amends Article 8 of the methodology to remove the possibility of identifying adequacy concerns on the basis of sensitivities and to delete any other provisions that would imply such use.

(229) In their responses to ACER's preliminary position, the Italian Ministry and ENTSO-E argue that the methodology should allow the identification of adequacy concerns on the basis of sensitivities, in order to enable national resource adequacy assessments to reflect national specificities.

(230) ACER does not consider such an approach necessary or appropriate. Article 24(1) of Electricity Regulation requires NRAAs to include central reference scenarios. As in the ERAA, the identification of adequacy concerns in an NRAA can therefore be based on such central reference scenarios. ACER further notes that Member States may reflect national specificities through the design of their NRAA central reference scenarios, provided that those scenarios comply with the applicable requirements governing central reference scenarios. This approach has already been applied in practice in NRAAs submitted to ACER. For example, the French NRAA reflected national specificities through, inter alia, a detailed representation of nuclear outages and hydro dispatch, as described in ACER Opinion 12/2025. Similarly, the Spanish NRAA incorporated national adaptations, such as the scheduling of outages, as described in ACER Opinion 11/2025.

(231) In their responses to ACER's preliminary position, the Spanish Ministry and ENTSO-E argue that the Electricity Regulation allows the performance of sensitivities and that it should therefore be possible to identify adequacy concerns on the basis of sensitivities.

(232) ACER agrees that sensitivities may be performed, including in the ERAA and in NRAAs, where they serve their intended purpose of testing the robustness of adequacy outcomes. However, the possibility to perform sensitivities does not imply that they may be used to identify adequacy concerns. For the reasons set out in recitals (224) to (227), the identification of adequacy concerns must be based on central reference scenarios, whereas sensitivities serve as complementary analyses to support interpretation.

(233) In its response to ACER's preliminary position, the Slovakian Ministry considers that sensitivity analyses can enhance the explanatory value of the ERAA and acknowledges that they serve as a complement to the main results. The Slovakian Ministry also suggests that the execution of such sensitivities should be subject to prior approval by ACER. The Maltese Ministry also supports the possibility for ENTSO-E to run sensitivities to allow Member States to see how their adequacy situation evolve under different assumptions.

(234) ACER agrees that sensitivity analyses can be a useful complement to the central reference scenarios, as they help illustrate how adequacy outcomes respond to variations in key assumptions or input parameters. ACER also recalls that the methodology already allows ENTSO-E to perform sensitivities pursuant to Article 3(6).

6.2.7. Complementarity between ERAA and NRAAs

(235) In the Proposal, ENTSO-E introduces a new Article 13 intended to describe the complementarity between the ERAA and NRAAs.

(236) ACER cannot impose requirements for NRAAs within the ERAA methodology, nor prescribe how ERAA and NRAAs complement each other. ERAA is performed by ENTSO-E and NRAAs by Member States, and their relationship is set by the Electricity Regulation. As the ERAA methodology provides a framework for ENTSO-E's annual ERAAs, and ACER's approval is binding only on ENTSO-E, any provisions governing Member States' assessments would be out of scope.

(237) In light of the above, ACER amends the methodology by deleting the provisions introduced in the Proposal concerning the complementarity between the ERAA and NRAAs, including the proposed Article 13.

(238) In its response to ACER's preliminary position, ENTSO-E argues that, if the methodology does not allow the identification of adequacy concerns on the basis of sensitivities, it should explicitly clarify that Member States may define their own central reference scenarios when conducting NRAAs.

(239) ACER considers that this clarification is already provided in recital 10 of the methodology, inserted for that purpose, and that no further clarification is necessary. Article 24 of the Electricity Regulation requires NRAAs to include central reference scenarios as referred to in Article 23(5)(b) of that Regulation. This requirement should be understood as requiring NRAAs to include central reference scenarios that comply with the applicable requirements, and not as requiring NRAAs to replicate the central reference scenarios used in the ERAA. Member States may reflect national specificities in their NRAA central reference scenarios, provided that those scenarios comply with the relevant requirements. This interpretation is confirmed by ACER's established practice under Article 24.

(240) In their responses to ACER's preliminary position, the Spanish Ministry and ENTSO-E argue that the role of NRAAs and their specific requirements should be described in the ERAA methodology, as envisaged in the proposed Article 13. By contrast, the Belgian Ministry agrees that NRAAs fall outside the scope of the ERAA methodology, but considers it important to reaffirm in this Decision that NRAAs remain available under Chapter IV of the Electricity Regulation. The Belgian and Italian Ministries further request confirmation that ERAA does not become the exclusive basis for State aid notifications for capacity mechanisms. In particular, they consider that the CISAF fast-track procedure based on ERAA results should not preclude Member States from relying on NRAA results for State aid notification, and that NRAAs may, in certain circumstances, better reflect national specificities or rely on more granular or more up-to-date information.

(241) ACER confirms that the amendments to the ERAA methodology do not affect the possibility for Member States to conduct NRAAs or to identify adequacy concerns and dimension capacity mechanisms on the basis of such assessments for notification to the

State Aid process. This is reflected in ACER's practice under Article 24 of the Regulation, pursuant to which ACER has issued opinions on NRAAs submitted by Member States. It is also illustrated by recent State aid practice, including the Commission decision approving the reform of the French capacity mechanism, which relied on the French NRAA and the related ACER's opinion.

6.2.8. ERAA process timeline

(242) In its response to ACER's preliminary position, the Slovak Ministry suggests that, given the complexity of the ERAA process, it could be preferable for ENTSO-E to carry out the ERAA on a biennial basis rather than annually, in order to align its periodicity with that of the TYNDP.

(243) ACER acknowledges the workload associated with the annual preparation of the ERAA and notes that a biennial cycle could enhance alignment with the TYNDP process and potentially allow for more in-depth analysis. However, ACER recalls that the obligation to perform the ERAA on an annual basis is laid down in Article 23(4) of Regulation (EU) 2019/943 and the methodology must comply with it. ACER further notes that annual assessments ensure that adequacy-related decisions are based on up-to-date information and do not rely on assumptions that have become obsolete.

(244) In its response to ACER's preliminary position, the Belgian Ministry raises concerns regarding the timing of ERAA publication and approval. It notes that delays experienced in previous ERAA cycles may lead Member States to rely on outdated assumptions when preparing capacity mechanism auctions, which could undermine the accuracy of capacity dimensioning and, ultimately, security of supply. In this context, Belgium considers that NRAAs may offer a practical means of incorporating more recent data and sensitivities where necessary.

(245) ACER recalls that the methodology establishes a clear procedural timeline for the preparation and submission of the ERAA by ENTSO-E to ACER, as set out in Article 10. ACER agrees that the timely delivery of the ERAA is essential for its effective use by Member States. To support this objective, ACER has introduced a number of simplifications compared to the initial methodology, has limited the introduction of new features to those that are legally required and strictly necessary to ensure the robustness of the ERAA, and has provided for a phased implementation of such features. These measures are intended to limit operational burden and to facilitate the consistent and timely delivery of future ERAA editions.

6.2.9. Transparency requirements and methodology clarity

6.2.9.1. Transparency indicators

(246) In order to support Member States in the assessment and follow-up of adequacy concerns, and to enhance transparency for stakeholders, ACER considers it appropriate that the ERAA include the publication of additional adequacy indicators. In particular, ACER considers it beneficial to publish:

- information on the distribution of ENS event durations, in order to provide insight into the typical length and variability of scarcity events; and

- for each asset type, the volume of capacity that is policy-driven and therefore exogenously fixed in the ERAA, thereby ensuring full transparency as to which assets are subject to the EVA and which are predetermined by TSOs on the basis of policy assumptions.

(247) In its response to ACER's preliminary position, ENTSO-E argues that it may only have partial visibility of assets benefiting from subsidy schemes and that certain underlying data may be subject to confidentiality constraints. Therefore, ENTSO-E considers that the data shall be published only to the extent possible and subject to non-confidentiality.

(248) ACER does not agree with the argument that ENTSO-E may only have partial information in this regard. The identification of capacity that is excluded from the EVA constitutes a necessary modelling input for the ERAA and should therefore be available to ENTSO-E for the purposes of constructing the scenarios and performing the relevant simulations.

(249) As regards confidentiality concerns, the requirement relates solely to the publication of aggregated volumes of capacity benefiting from subsidy schemes, at the level of each modelled zone and technology type. It does not entail the disclosure of asset-specific data or commercially sensitive contractual information, hence confidentially of such information would not be compromised through such publication.

(250) In addition, ACER considers it appropriate, for the purposes of transparency and to facilitate Member States' preparation of NRAAs, that ENTSO-E publish the final assumptions and input data underpinning the central reference scenarios, no later than one month after the ECG consultation on input variables and assumptions.

(251) In light of the above, ACER has amended Article 11 of the methodology to require the publication of the additional indicators referred to in recital (246). ACER has further amended Article 10(3) of the methodology to require the publication of the final assumptions and input data for the central reference scenarios referred to in recital (250).

(252) In its response to ACER's preliminary position, ENTSO-E considers that the proposed provision could be interpreted as requiring ENTSO-E to provide data in any format requested by Member States for the purposes of their NRAAs. ENTSO-E considers that such an interpretation would impose a disproportionate administrative burden on them.

(253) ACER agrees that ENTSO-E should not be required to tailor data outputs to the specific format or methodological preferences of each NRAA. ACER has therefore amended the relevant provision to clarify that ENTSO-E is required to make available the necessary data without creating an obligation to adapt to individual national formats.

6.2.9.2. Status of pre-approval publications

(254) ACER considers that, where ENTSO-E publishes an ERAA report prior to ACER's approval, it is necessary to ensure that stakeholders are not misled as to the status of that document. In particular, it must be made unambiguously clear that any such publication constitutes a draft and may be amended following ACER's approval process.

(255) This clarification is necessary given the importance of the ERAA for Member States' policy planning and its potential use in the context of streamlined procedures. Stakeholders must be able to distinguish between preliminary outputs and the final ERAA approved in accordance with ACER's decision.

(256) Accordingly, ACER has amended Article 11 of the methodology to require that any report published prior to ACER's approval be explicitly labelled as a "draft ERAA" and be accompanied by a clear disclaimer stating that the content remains subject to ACER's approval and potential amendments.

6.2.9.3. Clarity improvements

(257) ACER observes that, in several instances, the Proposal introduces conditional qualifiers (such as "if technically feasible" or "where relevant") to existing methodological requirements. ACER considers that, unless clearly defined and objectively verifiable, such qualifiers introduce ambiguity as to the binding nature of the obligations and the conditions under which they may be departed from.

(258) ACER considers that such ambiguity creates uncertainty and reduces transparency for stakeholders, as it becomes difficult to anticipate what will be delivered in each ERAA edition and to assess compliance with the methodology. In light of the maturity of the ERAA process after several editions, ACER considers it no longer appropriate that methodological requirements are formulated as potentially inapplicable without clear, predefined criteria.

(259) For these reasons, ACER has amended the methodology to remove or concretise such conditional formulations, except where objectively justified. Where exceptions are retained, the methodology shall specify the conditions under which they apply. This ensures predictability, strengthens transparency and supports consistent implementation of the methodology across ERAA editions. In addition, ACER has introduced definitions for relevant terms in order to further improve legal clarity.

6.2.10. Technical parameters of the assessment

(260) In the Proposal, ENTSO-E suggests amending the requirement concerning the CORP and CONE values. Instead of requiring the use of the most recent values calculated by Member States pursuant to the VoLL, CONE and RS methodology, ENTSO-E proposes that the ERAA may rely on values based on those national calculations, provided that they are up to date, verifiable and accompanied by the underlying assumptions.

(261) ACER considers that it is not appropriate for ENTSO-E to change values that have been determined by Member States in accordance with the VoLL, CONE and RS methodology. This methodology establishes a harmonised framework for the determination of such parameters. ACER has therefore amended the Proposal to revert to the wording of the initial ERAA methodology, requiring the use of the most recent values computed by Member States under this methodology.

(262) In its response to ACER's preliminary position, ENTSO-E argues that the mandatory use of national values could introduce exogenous biases and inconsistencies in the EVA, as illustrated by the experience of ERAA 2024. ENTSO-E considers that significant divergences between national CONE values have been observed for no clear reason, which may distort modelling outcomes. ENTSO-E therefore recommends reconsidering the amendment requiring the systematic use of the value computed nationally pursuant to the VoLL CONE and RS methodology.

(263) ACER maintains that it is not ENTSO-E's role to override national determinations made pursuant to the applicable methodologies. However, ACER acknowledges that substantial cost developments occurring after a national computation may render previously calculated values outdated. To address this concern, ACER has allowed that ENTSO-E may update the national values where they are no longer up to date, provided that any such update is transparent and justified.

(264) The Proposal provides for the possibility to model planned outages during scarcity periods, with the aim of reflecting historical operational patterns, rather than assuming that all planned outages are optimised so as to avoid scarcity periods.

(265) ACER considers that such an approach may be acceptable, provided that it is subject to appropriate requirements. In particular, ACER amends the methodology to require that any modelling of planned outages during scarcity periods be: (i) substantiated by documented historical evidence; and (ii) applied only where it can be reasonably expected to remain relevant under future system conditions, including in light of the evolution of demand and the capacity mix.

(266) Accordingly, ACER has amended Article 4(4)(e) of the methodology to specify the conditions under which planned outages may be modelled during scarcity periods.

6.2.11. Implementation timeline

(267) In the Proposal, ENTSO-E proposes that implementation of the amended ERAA methodology be completed by the fourth ERAA edition following ACER's approval. Under this approach, full implementation would only be required by the ERAA 2030 edition, mirroring the timeline foreseen for the implementation of the initial ERAA methodology.

(268) ACER considers that the implementation timeline proposed in the Proposal is no longer appropriate. When the initial ERAA methodology was adopted, ENTSO-E was required to design and operationalise a Union-wide adequacy assessment from the ground up, which justified a multi-year development period. This situation no longer

applies. ENTSO-E now has an established modelling framework, has implemented the majority of methodological requirements, and has accumulated several years of operational experience.

(269) ACER further notes that the timeline proposed in the Proposal would, in practice, allow ENTSO-E to determine, on a discretionary basis, which requirements are implemented in each of the following editions, including where certain elements have already been delivered in previous ERAA cycles. ACER considers that such an approach would not provide stakeholders with sufficient clarity and predictability as to which requirements will apply and by when.

(270) ACER also considers that the amendments stemming from the Commission's Streamlining Report and ACER's request for amendment do not introduce modelling obligations comparable in scale to those required for the initial implementation of the ERAA methodology. In particular, the principal additions relate to:

- the introduction of the Trends and Projections central reference scenarios, combined with a reduced frequency for running the NECP central reference scenarios;
- the explicit requirement to consider intraday for storage technologies; and
- the computation and publication of CM-related parameters, which can be implemented through standardised post-processing of existing ERAA outputs.

(271) ACER notes that the remaining amendments primarily clarify requirements that already applied under the initial ERAA methodology or provide additional methodological guidance. Against this background, ACER considers that a four-edition implementation period is neither necessary nor proportionate.

(272) In order to ensure transparency and predictability for Member States and stakeholders, ACER considers it appropriate that the ERAA methodology includes a feature-specific implementation schedule, specifying for each methodological requirement the exact ERAA edition by which it must be applied. This is consistent with the structure of other ACER methodologies and provides a clear framework for progressive implementation.

(273) In light of the above, ACER has amended Article 13 of the methodology to introduce a detailed, feature-specific implementation timeline, setting out explicit implementation deadlines for each new or clarified requirement, in order to ensure timely and transparent application across future ERAA editions.

(274) In their response to ACER's preliminary position, ENTSO-E and the Spanish Ministry argue that the ERAA is already complex to implement and that the amendments proposed by ACER would further increase complexity and risk timely delivery. In particular, they refer to the requirement to run with-CM central reference scenarios.

ENTSO-E also points to the requirements to (i) better reflect revenue streams relevant for flexible resources and (ii) compute and publish CM-related parameters.

(275) ACER acknowledges that the amendments highlighted by ENTSO-E and the Spanish Ministry, together with the introduction of the Trends and Projections scenario assumption basis, are among the most significant implementation changes. ACER has therefore assessed their implications for computational feasibility:

- **With-CM scenarios:** Running a with-CM central reference scenario is not a new obligation introduced by this amendment, as it was already provided for in the initial ERAA methodology. The amended methodology introduces a phased implementation and transitional arrangements aimed at reducing the immediate computational burden compared to the original framework, as illustrated in the table below. It also provides for a simplified version of the with-CM scenario. The justification for maintaining this requirement is set out in Section 6.2.2.2 of this Decision.

ERAA edition	**Initial ERAA methodology**	**Amended ERAA methodology**
ERAA 2026	Originally, single requirement: With-CM scenario for 10 target years	proof of concept (separate deliverable, no later than 6 months after ERAA submission)
ERAA 2027		With-CM scenario run for 1 target year
ERAA 2028		With-CM scenario run for 2 target years
ERAA 2029		With-CM scenario run for 4 target years

- **Flexibility revenue modelling:** As explained in section 6.2.4.1, improving the representation of the business case of flexible resources is necessary to ensure that the EVA reflects realistic investment incentives, in particular for storage and other flexibility resources whose profitability depends materially on revenues beyond the day-ahead wholesale market. ACER notes, in this regard, that recent ERAA editions have tended to produce investment patterns

dominated by gas-fired capacity that do not materialise to the same extent in practice, while under-representing storage investments compared with observed developments. As regards implementation burden, ACER has explicitly allowed ENTSO-E in Annex I to this Decision to represent certain additional revenue streams exogenously, thereby avoiding the need for complex endogenous modelling and mitigating impacts on computational time.

- **Trends and Projections scenario assumption basis:** The introduction of the Trends and Projections scenario assumption basis is required by the Commission's Streamlining Report and further justified by stakeholder feedback, and is necessary to ensure that the annual assessment reflects the dynamic evolution of the energy transition. To mitigate the additional burden, ACER provides for the possibility, where required, to ensure feasibility and timely delivery, to limit each ERAA edition to the scenarios of a single scenario assumption basis.

- **CM-related parameters:** As explained in section 6.2.5.1, computing the CM-related parameters supports the fast-track capacity mechanism State Aid process from the CISAF and enhance the interpretability and transparency of adequacy outcomes. As regards implementation burden, the computation and publication of CM-related parameters can be implemented through transparent post-processing of existing ERAA simulation outputs, as explained in section 6.2.5, and does not require additional simulations as such.

(276) In light of the above, ACER considers that, as designed, the amended requirements are proportionate and do not impose a higher computational burden than what would have resulted from the full implementation of the initial ERAA methodology. ACER also notes that other elements have been streamlined, including the explicit modelling of only a subset of pivotal target years and the removal of the previously mandatory sensitivity on restriction of free price formation. At the same time, ACER considers it appropriate to provide ENTSO-E with sufficient time to implement the new requirements. The amended methodology therefore includes a phased implementation schedule and transitional arrangements, in particular:

- the staged introduction of with-CM scenarios, including the use of a simplified approach up to and including the ERAA 2028 edition and full pivotal target-year coverage from the ERAA 2029 edition onwards;

- the representation of additional revenue streams only need to be implemented by the ERAA 2028 edition.

(277) As regards the computational limitations raised, ACER also notes that ENTSO-E has demonstrated the ability to carry out additional simulations on their own initiative within past ERAA cycles, including:

- in the ERAA 2024 edition, the rerun of the central reference scenario and an additional economic dispatch simulation to account for a wider representation of French nuclear outages; and

- in the ERAA 2025 edition, the execution of two central reference scenarios reflecting alternative risk-aversion assumptions, together with four proof-of-concept simulations combining two revenue-based approaches with two risk-aversion specifications. ACER also notes that the ERAA 2025 was submitted by ENTSO-E to ACER (December 2025) around 5 months after the approval of ERAA 2024 (July 2025).

(278) In its response to ACER's preliminary position, ENTSO-E argues that the ERAA 2026 edition is already at an advanced stage of preparation and that introducing additional requirements at this point would require significant replanning and additional resources, and would be likely to delay the timely publication of the ERAA.

(279) ACER acknowledges that the ERAA 2026 process is already ongoing. ACER further notes that the only additional requirement for ERAA 2026 concerns the computation and publication of CM-related parameters. Based on the amendments described in sections 6.2.5.3, 6.2.5.6 and 6.2.5.7, those parameters may be derived through a relatively limited post-processing of existing results. ACER also notes that certain Member States may rely on these parameters for the dimensioning of capacity mechanism auctions or in the context of State aid notifications under the CISAF framework. At the same time, ACER recognises the practical constraints associated with an ongoing modelling cycle. For that reason, the methodology provides that the computation of CM-related parameters in ERAA 2026 is required only where this can be achieved without delaying the overall ERAA process.

7. CONCLUSION

(280) For the above reasons, ACER considers the Proposal in line with the requirements of the Electricity Regulation, provided that the amendments outlined in section 6.2 are integrated in the Proposal, as presented in Annex I to this Decision.

(281) Therefore, ACER approves the Proposal subject to the necessary amendments. Annex I to this Decision sets out the Proposal as amended and approved by ACER,

HAS ADOPTED THIS DECISION:

Article 1

The methodology for the European resource adequacy assessment in accordance with Article 23(3) of Regulation (EU) 2019/943 is approved as set out in Annex I to this Decision.

This Decision is addressed to ENTSO-E.

Done at Ljubljana, on 13 March 2026.

- SIGNED –

For the Agency
The Director ad interim

V. ZULEGER

Annexes:

Annex I – Methodology for the European resource adequacy assessment in accordance with Article 23(3) and (5) of Regulation (EU) 2019/943.

Annex Ia– Methodology for the European resource adequacy assessment in accordance with Article 23(3) and (5) of Regulation (EU) 2019/943 - *(track-change version, for information only)*

In accordance with Article 28 of Regulation (EU) 2019/942, the addressees may appeal against this Decision by filing an appeal, together with the statement of grounds, in writing at the Board of Appeal of the Agency within two months of the day of notification of this Decision.

In accordance with Article 29 of Regulation (EU) 2019/942, the addressees may bring an action for the annulment before the Court of Justice only after the exhaustion of the appeal procedure referred to in Article 28 of that Regulation.

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