European Network of Transmission System Operators for Electricity

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ENTSO-E Proposal for the Regional Coordination Centres' task 'regional sizing of reserve capacity' in accordance with Article 37(1)(j) of the Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity

For public consultation (08 November 2022 – 09 December 2022)

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DISCLAIMER

This document is released on behalf of the ENTSO-E only for the purposes of the public consultation on the Proposal for the Regional Coordination Centres' task 'regional sizing of reserve capacity in accordance with Article 37(1)(j) of the Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity. This version of the Proposal does not, in any case, represent a firm, binding or definitive TSOs' position on the content.

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ENTSO-E, taking into account the following:

Whereas

(1) Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereafter referred to as "Regulation (EU) 2019/943"), sets the basis for an efficient achievement of the objectives of the Energy Union and in particular the climate and energy framework for 2030 through establishing a modern design for the European Union's electricity market, adapted to the new realities of the market. Regulation (EU) 2019/943 was developed and adopted as part of the EU Clean Energy Package for All Europeans.

(2) Article 35 of Regulation (EU) 2019/943 provides for the establishment of Regional Coordination Centres (hereafter referred to as "RCCs") while Article 37(1) lists the RCCs' tasks. According to Article 37(1)(j) RCCs shall carry out the task 'regional sizing of reserve capacity', while point 7 of Annex I of the Regulation (EU) 2019/943 provides further details.

(3) This document sets out the proposal for the regional sizing of reserve capacity (hereafter referred to as the "proposal"), developed by the European Network of Transmission System Operators for Electricity ("ENTSO-E") in accordance with Regulation (EU) 2019/943 and in particular Article 37(1)(j) and Article 37(5) on the obligation of the RCCs to carry out the regional sizing of reserve capacity. This proposal provides definitions and sets out the RCC process of regional sizing of reserve capacity.

(4) This proposal acknowledges the provisions of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation on the dimensioning of reserve capacity and sharing of reserves. The obligations, roles, responsibilities and governance related to the process of dimensioning of reserve capacity as well as the framework for sharing of reserves are ruled by requirements of Commission Regulation (EU) 2017/1485. This Commission Regulation clarifies the TSO's responsibilities and the requirements that they should apply in case TSOs decide to enter a voluntary cooperation in sharing of reserves or exchange of balancing capacity, which is also guaranteed by the freedom to contract between cooperating TSOs. The RCCs' facilitation as defined in this proposal supports regional TSOs' cooperation and supports TSOs in undertaking their operational security responsibilities.

(5) Synchronous areas do not stop at the Union's borders and can include the territory of third countries. The Union, Member States and TSOs should aim for secure system operation inside all synchronous areas across the Union. They should support third countries in applying similar rules to those contained in Regulation (EU) 2019/943. ENTSO-E should facilitate cooperation between Union TSOs and third country TSOs and their RCCs concerning secure system operation.

(6) In this respect, recital 70 of Regulation (EU) 2019/943 further stresses the need for close cooperation with Member States, the Energy Community Contracting Parties and other third countries which apply Regulation (EU) 2019/943 or are part of the synchronous area of Continental Europe. This cooperation should cover all matters concerning the development of an integrated electricity trading region and ensure that no measures are taken that endanger the further integration of electricity markets or security of supply of Member States and Contracting Parties.

(7) In line with ACER Decision 05/2022, all TSOs of those SORs neighbouring third country TSOs should endeavour where necessary to enter into agreements setting the basis for their technical cooperation and compliance with the relevant EU legislation.

(8) Article 6(7) of the Regulation (EU) 2019/943 provides that "[t]he dimensioning of reserve capacity shall be performed by the transmission system operators and shall be facilitated at a regional level". ENTSO-E considers that this facilitation will be carried out by the RCC to the relevant TSOs of the respective system operation region (SOR). The facilitation of the TSO's dimensioning process by the RCC in performing its task of 'regional sizing of reserve capacity' as set out in this proposal fulfils the requirements on this task provided by point 7 of Annex I of Regulation (EU) 2019/943 as follows:

a. The proposed short-term assessment of the availability of sharing amounts performed on a day-ahead basis

i. improves TSO's efficiency, since this service provides the regional and cross-border assessment of the security criteria for activation of sharing agreements

ii. aims at avoiding high expenses for additional measures to maintain operational security in case of insufficient reserve capacity available. Thus, it allows TSOs to maintain operational security in the most cost effective manner and enhances regional cooperation.

iii. allows TSOs to minimise their costs related to the procurement of balancing capacity as TSOs with expensive local balancing resources are able to substitute these with cheaper balancing resources available cross-border by relying on sharing of reserves and thus ensuring system operational security.

iv. determines minimum reserve capacity requirements for each type of reserve capacity for each reserve capability receiving TSO involved in an agreement for the sharing of reserves to comply with the frequency restoration control error (FRCE) target parameters and dimensioning rules and thus ensuring operational security.

b. In addition, the RCC calculates the reserve capacity requirements for the SOR when performing the proposed yearly determination of minimum reserve capacity required on SOR level.

(9) Articles 166, 168 and 170 of SO Regulation define general requirements for sharing FRR and RR within a synchronous area. Following the provisions of this Article, the parties participating in a sharing agreement are a control capability receiving TSO and a control capability providing TSO. Following this, a sharing agreement is a bilateral contract where the obligation to provide reserves is unidirectional. If two TSOs have concluded a sharing agreement on mutual sharing of reserves, at least two unidirectional obligations to provide reserves are established independent of each other.

(10) The consideration by a control capability receiving TSO of activating a sharing agreement might overestimate the sharing potential, in scenarios where correlation of variables of LFC Blocks occur. Also, reserve capability receiving TSOs may disregards situations of simultaneous activation of reserves from control capability providing TSOs. As the sharing of reserves reduces the overall amount of reserves in the SOR, the RCC task 'regional sizing of reserve capacity' ensures operational security in a scenario where the impact of an event involving at least two LFC blocks requiring those LFC blocks to activate reserves simultaneously, needs to be assessed beyond each individual LFC block to guarantee appropriate reserve capacity and thus system operational security in the region.

(11) Articles 177 and 179 of SO Regulation provide general requirements for sharing FRR and RR between synchronous areas. Limits have to be defined by TSOs to this sharing of reserves to ensure operational security.

(12) This Proposal fulfils the principles regarding the operation of electricity markets listed in Article 3 of the Regulation (EU) 2019/943. In particular, it:

a. supports removing barriers to cross-border transactions on balancing markets. The proposed facilitation of the TSOs' dimensioning process on LFC block level under the RCC task 'regional sizing of reserve capacity' provides for a regional assessment which ensures a sufficient and secure allocation of resources minimising the risk to system operational security when concluding a sharing agreement between TSOs.

b. provides for and fosters regional cooperation between TSOs. The proposed RCC task of 'regional sizing of reserve capacity' ensures an effective cooperation of TSOs on regional level by assessing regional reserve capacity requirements and considering the effects of regional cooperation of TSOs (here: sharing of reserve capacity) minimising the risk to system operational security.

The other principles regarding the operation of electricity markets listed in Article 3 of the Regulation (EU) 2019/943 remain unaffected by this Proposal.

SUBMITS THE FOLLOWING PROPOSAL TO ACER:

Article 1 Subject matter and scope

1. This is a proposal for the RCC task 'regional sizing of reserve capacity' according to Article 37(1)(j) of the Regulation (EU) 2019/943. As ENTSO-E considers the referred RCC task as not already covered by the relevant network codes or guidelines, this Proposal is developed in accordance with Articles 37(1)(j), 37(5) and point 7 of Annex I of the Regulation (EU) 2019/943.

2. The proposed RCC task 'regional sizing of reserve capacity' shall be understood as the facilitation of dimensioning of reserve capacity at regional level according to Article 6(7) of the Regulation (EU) 2019/943.

3. The proposed RCC task 'regional sizing of reserve capacity' is without prejudice to the dimensioning according to Article 157 and Article 160 of SO Regulation performed on LFC block level by the respective TSO(s) according to Article 6(7) of the Regulation (EU) 2019/943.

4. The RCC task 'regional sizing of reserve capacity' considers aFRR, mFRR and RR.

Article 2 Definitions and interpretation

1. For the purposes of this proposal, the terms used shall have the meaning given to them in Article 2 of the Regulation (EU) 2019/943, Article 2 of the EB Regulation and Article 3 SO Regulation.

2. The following additional definitions shall also apply:

   a. 'Facilitation of dimensioning of reserve capacity at regional level':
   The role of RCCs defined by the extent of roles in Articles 4 and 5 of this Proposal which can be summarised as a short-term assessment of availability of sharing amounts between reserve sharing TSOs together with a yearly determination of minimum reserve capacity required on SOR level.

   b. 'Agreed Sharing Amount':
   The maximum volume of shared reserves between LFC blocks involved in a sharing agreement to reduce the reserve capacity of the control capability receiving TSO resulting from the dimensioning process and concluded in a sharing agreement between the TSOs of the respective LFC blocks following the provisions of Article 166 SO Regulation. The sharing amount is specified for each type of reserves and per direction.

3. In this methodology, values given for the negative direction are assumed to have a negative sign.
4. In this methodology, unless the context requires otherwise:
    a. the singular also includes the plural and vice versa;
    b. the table of contents and headings are inserted for convenience only and do not affect the interpretation of this methodology;
    c. any reference to legislation, regulation, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force; and
    d. any reference to an Article without an indication of the document shall mean a reference to this methodology.

Article 3 General principles

1. The RCC task 'regional sizing of reserve capacity' according to Article 37(1)(j) of the Regulation (EU) 2019/943 is split into two subtasks to comply with the requirements of point 7 of Annex I of the Regulation (EU) 2019/943:
    a. short-term assessment of availability of sharing amounts
    b. determination of minimum reserve capacity required on SOR level
2. The relevant TSOs shall provide the data necessary to perform the tasks defined within this methodology to the RCC or indicate to the RCC where the relevant data is publicly available.

Article 4 Determination of minimum reserve capacity on SOR level

1. The RCC shall, on a yearly basis, determine the minimum required reserve capacity for the SOR, to facilitate TSOs of the SOR in their dimensioning of reserve capacity. Therefore, the RCC shall calculate the overall amount of required reserve capacity for the SOR as follows:
    a. The relevant incident ('sizing incident') for the determination of minimum reserve capacity on the level of the relevant SOR shall be determined separately for positive and negative direction. The sizing incident shall be equal to the LFC block dimensioning incident determined by the TSO, if the SOR includes only one LFC block. Where the SOR includes more than one LFC block, to determine the sizing incident, the RCC shall take into account the largest imbalance that may result from
        i. the instantaneous change of active power generation such as that of a simultaneous loss of the two largest power generating modules, or
        ii. the maximum instantaneous loss of active power consumption due to a simultaneous loss of the two largest connection points, or
        iii. the tripping of the two largest HVDC interconnectors.

    b. If applicable, TSOs of the relevant SOR shall provide to the RCC the LFC block imbalance (corresponding to ACE open loop and following Article 3 (138) of SO Regulation). The sampling of those time series shall cover the time to restore frequency according to Annex III of SO Regulation. The time period considered for those historical records shall be representative and include at least one full year period ending not earlier than six months before the calculation date.
    c. The RCC shall sum up per sampling time the positive and negative imbalances of all LFC Blocks of the SOR from the time series received under point (b).
    d. The RCC shall calculate the capacity needed to cover the positive SOR imbalances at least to the same level as specified in Article 157(2)(h) of SO Regulation, based on the netted imbalances determined under paragraph 1(c); The applied level shall be determined by the TSOs of the SOR.

e. The RCC shall calculate the capacity needed to cover the negative SOR imbalances at least to the same level as specified in Article 157(2)(i) of SO Regulation, based on the netted imbalances determined under paragraph 1(c). The applied level shall be determined by the TSOs of the SOR.

2. The TSOs of the SOR shall provide the data listed under paragraph 1(a) to the relevant RCC.
3. The minimum amount of required reserve capacity for the SOR per direction equals
   a. For positive direction the maximum of the positive sizing incident and the value determined under paragraph 1(d).
   b. For negative direction the minimum from the negative sizing incident and the value determined under paragraph 1(e).
4. The RCC shall then compare the summed up reserve capacity requirements per LFC block of the relevant SOR resulting from the dimensioning process of TSOs after including agreed sharing amounts with the determined minimum amount of required reserve capacity for the SOR per direction following the provisions of this Article.
   a. If the total summed up reserve capacity requirements including sharing amounts falls below the regional sized reserve capacity, the RCC shall analyse this shortage in reserve capacity on the SOR level and provide recommendations towards the TSOs or the RCC itself with possible improvements:
      i. The RCC may recommend to the TSOs of the SOR to reduce the reduction of dimensioned reserve capacity by sharing of reserves to ensure sufficiently available reserve capacity on regional level. If this does not lead to sufficiently available reserve capacity on regional level, RCC may additionally indicate to the TSOs of the SOR to generally review their dimensioning rules in a coordinated way.
      ii. The RCC may recommend to the TSOs of the SOR to coordinate on increasing the reserve capacity requirements on LFC block level to guarantee sufficient reserves on SOR level.
      iii.
   b. If the total summed up reserve capacity requirements is greater than the regional sized reserve capacity, the RCC may recommend to the TSOs of the SOR to investigate further sharing of reserves. The TSOs of the SOR shall take this recommendation into account when analysing the opportunities for the sharing of reserves according to Article 60(2)(e) of EB Regulation.

   c. The RCC may in addition propose possible improvements to the 'regional sizing of reserve capacity' methodology.

Article 5 Short-term assessment of availability of sharing amounts

1. The RCCs' short-term assessment of the availability of agreed sharing amounts shall only apply to TSO-TSO interactions based on the TSO-TSO model. It shall only apply where TSOs share reserve capacity cross-border based on a sharing agreement between LFC blocks within a synchronous area following the provisions of Articles 166, 168 and 170 SO Regulation or between synchronous areas following the provisions of Articles 177 and 179 of SO Regulation. If a sharing agreement between LFC blocks of different SORs is in place, the relevant RCCs shall coordinate to perform the short-term assessment of availability of sharing amounts described in this Article.
2. The RCC's facilitation shall apply to each control capability receiving TSO(s) according to Article 166(6) SO Regulation of the relevant SOR involved in a sharing agreement. These TSOs shall inform the RCC about the established Sharing of Reserves. The aim of the facilitation by the RCC is to identify where and when the risk of simultaneous (correlated) activation of shared reserves exists and, if a risk was identified, to recommend actions as detailed in the following paragraphs.

3. To facilitate control capability receiving TSOs involved in a sharing agreement in their determination of the required reserve capacity on LFC block level by a short-term assessment of availability of agreed sharing amounts, the RCC shall verify, if the agreed sharing amount can be expected to be available between the relevant LFC blocks in the relevant period. Therefore, the RCC shall, at least on a day-ahead basis, assess the availability of:

    a. Sufficient reserve capacity by analysing the simultaneity of phenomena impacting generation and load per concerned LFC block.

    b. Sufficient cross-zonal capacity for the concluded sharing of reserves.

4. For the assessment of the availability of sufficient reserve capacity following Paragraph 3(a) the relevant TSOs involved in a sharing agreement shall provide the agreed sharing amount per type of reserves and direction, their locally dimensioned reserve capacity for each type of reserves according to Articles 157 and 160 of SO Regulation as soon the information becomes available. The RCC shall then assess the simultaneously expected demands for reserve capacity in the relevant LFC blocks derived from the uncertainties of the day-ahead generation and load forecasts of the TSOs having concluded a sharing agreement. If a partial or full usage of the respective reserve capacity by the control capability providing TSO is likely, there is insufficient reserve capacity available for the sharing of reserves.

5. For the assessment of the availability of sufficient cross-zonal capacity following Paragraph 3(b) the RCC shall take into account the relevant available cross-zonal capacity resulting from the day-ahead capacity calculation process in accordance with Section 4 of the Commission Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management[1] (hereinafter "CACM GL"). If the resulting available cross-zonal capacity on the relevant LFC block border is less than the agreed sharing amount, there is insufficient cross-zonal capacity available for the sharing of reserves.

6. To determine the minimum amount for each type of reserve capacity for control capability receiving TSO(s) involved in a sharing agreement, the RCC shall, per each type of reserve capacity, take the locally dimensioned reserve capacity and subtract the determined available sharing amount.

7. If the RCC determines that the agreed sharing amount may mot or may only partially be provided to the control capability receiving TSO in the relevant period, the RCC shall issue an awareness notification to these TSOs. The control capability providing TSO and relevant affected TSO(s) according to the sharing agreement shall be informed about the issued awareness notification.

8. Within this awareness notification, the RCC shall recommend to the relevant control capability receiving TSO(s) to increase its required reserve capacity on LFC block level up to a maximum of the reserve capacity resulting from the local dimensioning process with an equivalent decrease of the sharing amount between the relevant LFC blocks The available sharing amount shall be reduced accordingly – at maximum to zero. –

9. The RCC shall make a recommendation available to the relevant TSO(s) at least six hours before the BSPTSO gate closure time of the relevant harmonised allocation process determined in the methodology in accordance with Article 38(3) of EB Regulation and defined by the relevant TSOs. The recommendation by the RCC may be taken into account by the relevant TSO(s) to

    a. adapt the control capability receiving TSOs' reserve capacity need resulting from the dimensioning process and/or

[1] Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereinafter "CACM GL"), available at: https://eur-lex.europa.eu/legalcontent/EN/TXT/?uri=CELEX:02015R1222-20210315.

b. adapt the request of allocating cross zonal capacity for the sharing of reserves.

10. A control capability receiving TSO may decide to deviate from a recommendation issued by the RCC. If a control capability receiving TSO does so, it shall submit a justification for its decision to the relevant RCC and to the other TSOs of the SOR without undue delay according to Article 42(3) of the Regulation (EU) 2019/943. If the recommendation includes an adjustment of sharing of reserves, the concerns of affected TSOs shall be taken into account accordingly.

11. A control capability providing TSO, a control capability receiving TSO or an affected TSO involved in a sharing agreement may request a review of the recommendation issued by the RCC according to Article 42(4) of the Regulation (EU) 2019/943, in case new input data is available. Following the review of the recommendation, the RCC shall confirm or modify its initial recommendation.

12. Each control capability receiving TSO of the relevant SOR shall submit the final required reserve capacity for each type of reserves of its LFC block to the RCC. If more than one TSOs perform a common FRR or RR dimensioning within a LFC block, only one TSO shall submit the relevant values on behalf of all involved TSOs, following Article 166 (7) of SO Regulation.

Article 6 Monitoring and reporting

1. The RCC shall prepare a report on the results of the yearly determination of minimum reserve capacity of the SOR performed under Article 4 of this Methodology. This report shall be annexed to the ENTSO-E report following Article 59 of EB Regulation. The RCCs shall therefore respect the timeline specified by ENTSO-E.

2. The RCCs shall take into account their recommendations issued following their task 'regional sizing of reserve capacity' in their continuous monitoring process according to Article 46 (1) of the Regulation (EU) 2019/943. Therefore, the RCCs shall monitor the extent to which the recommendations have been implemented by the transmission system operators and the outcome achieved.

Article 7 Implementation of this Proposal

1. By 36 months after the approval of this Proposal in accordance with the procedure set out in Article 27 of the Regulation (EU) 2019/943, and with a possible extension granted by the NRAs of the system operation region of maximum 2 years, RCCs shall implement and make operational the process to facilitate TSOs in determining their required reserve capacity on LFC block level by performing the task 'regional sizing of reserve capacity' as defined in Article 4 of this Proposal. Accordingly, TSOs shall set up the necessary procedures for data provision to the process and for processing the RCC's recommendation.

2. If sharing is applied with third country TSOs, all TSOs of the relevant SOR neighbouring the third country TSO(s) not bound by Regulation (EU) 2019/943 shall endeavour to conclude with these third country TSOs agreements aiming at third country TSOs' cooperation and implementation of this methodology as appropriate.

3. When implementing the proposal, RCCs shall duly take into account data and information already available from their other tasks performed, especially the regional system adequacy forecasts in accordance with Article 37(1)(e) of the Regulation (EU) 2019/943.

Article 8 Language

1. The reference language for this Proposal shall be English.

2. For the avoidance of doubt, where TSOs or RCCs need to translate this proposal into their national language(s), in the event of inconsistencies between the English version published by ACER and any version in another language, the relevant TSOs or RCCs shall, in accordance with national legislation, provide the relevant national regulatory authorities with an updated translation of this Proposal.