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 consultation

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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.

Contents

ENTSO-E, taking into account the following:

Whereas

(1) The Regulation (EU) 2019/943 on the internal market for electricity adopted by the European Parliament and the Council of 5 June 2019[1] 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 (EU) electricity market, adapted to the new realities of the market. The Regulation (EU) 2019/943 was developed and adopted as part of the EU Clean Energy Package for All.

(2) Article 35 of the Regulation (EU) 2019/943 establishes the Regional Coordination Centres (RCCs) while Article 37(1) lists the tasks and roles of those centres. 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 provides further details:

"7.1 Regional coordination centres shall calculate the reserve capacity requirements for the system operation region. The determination of reserve capacity requirements shall:

a. pursue the general objective to maintain operational security in the most cost effective manner;

b. be performed at the day-ahead or intraday timeframe, or both;

c. calculate the overall amount of required reserve capacity for the system operation region;

d. determine minimum reserve capacity requirements for each type of reserve capacity;

e. take into account possible substitutions between different types of reserve capacity with the aim to minimise the costs of procurement;

[1] European Union (2019), Regulation (EU) 2019/943 on the internal market for electricity adopted by the European Union and of the Council of 5 June 2019 (hereinafter "Regulation (EU) 2019/943"), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0943.

f. set out the necessary requirements for the geographical distribution of required reserve capacity, if any."

(3) Further, 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".

(4) This document is a Proposal developed by the European Network of Transmission System Operators for Electricity ("ENTSO-E") and representatives of the RCCs in accordance with the Regulation (EU) 2019/943 and in particular Article 37(1)(j) and (5) on the methodology describing the obligation of the RCCs to carry out the task 'regional sizing of reserve capacity'. This Proposal provides a coordinated description of the considered RCC task 'regional sizing of reserve capacity' and aims at clarifying general aspects of this RCC task and reflecting technical needs of the system to define reserve capacity requirements, while fully respecting TSOs' legal obligations and local approaches.

(5) The proposed assignment of facilitating tasks to the RCC focuses on providing an added value to the relevant TSOs' tasks. The proposed facilitation of the TSO's dimensioning process by the RCC in performing its task of 'regional sizing of reserve capacity' is consistent with the existing and applicable European and national legal framework. In particular:

a. Article 40 of the Directive (EU) 2019/944[2] as well as requirements of Commission Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation (hereinafter "SO Regulation"[3]) establish the responsibilities of TSOs for local reserve dimensioning on Load Frequency Control (LFC) block level. In addition, Article 6(7) of the Regulation (EU) 2019/943 requires that the dimensioning of reserve capacity on LFC block level shall be performed by the TSOs and shall be facilitated at a regional level.

b. Article 32(1) of the Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing (hereinafter "EB Regulation"[4]) requires that all TSOs of an LFC block shall regularly and at least once a year review and define the reserve capacity requirements for the LFC block or scheduling areas of the LFC block pursuant to dimensioning rules as referred to in Articles 157 and 160 SO Regulation respecting the requirements of Article 127 SO Regulation. The SO Regulation obliges TSOs to perform the dimensioning of Frequency Restoration Reserves (FRR) and, when implemented, Replacement Reserves (RR) on the level of LFC blocks. Articles 157 and 160 SO Regulation provide general principles on the dimensioning process and allocate the final decision on the dimensioning of reserve capacity to the TSOs.

c. Article 157(2)(b) SO Regulation requires that the FRR dimensioning shall take into account the restrictions for the sharing of reserves defined in Article 157(2)(j), Article 157(2)(k), Article 160(4) and Article 160(5) SO Regulation due to possible violations of operational security and the FRR availability requirements when applying the probabilistic dimensioning methodology. Additionally, all TSOs forming an LFC block shall take into account any expected significant changes to the distribution of LFC block imbalances or take into account other relevant

[2] Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0944.

[3] Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereinafter "SO GL"), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.220.01.0001.01.ENG&toc=OJ:L:2017:220:TOC

[4] Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (hereinafter "EB GL"), available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02017R2195-20210315.

influencing factors relative to the time period considered. Furthermore, Article 157(2)(g) SO Regulation states that all TSOs of an LFC block shall determine the reserve capacity on FRR of an LFC block, any possible geographical limitations for its distribution within the LFC block and any possible geographical limitations for any exchange of reserves or sharing of reserves with other LFC blocks to comply with the operational security limits. Further, all TSOs of an LFC block may reduce the reserve capacity on FRR of the LFC block resulting from the FRR dimensioning process by concluding an FRR sharing agreement with other LFC blocks according to Article 157(2)(j) and Article 157(2)(k) SO Regulation. Therefore, TSOs are required to check the operational security before any sharing or exchange of FRR.

d. Articles 160(4) and 160(5) SO Regulation allow that all TSOs of an LFC block implementing an RR process (RR TSOs) may reduce the reserve capacity on RR of the LFC block, resulting from the RR dimensioning process, by developing an RR sharing agreement for positive or negative reserve capacity on RR with other LFC blocks. Therefore, TSOs are required to check the operational security before any sharing or exchange of RR.

e. According to Article 152(1) SO Regulation the objective of dimensioning reserve capacity (FRR with automatic activation (aFRR), FRR with manual activation (mFRR) and RR) according to Articles 157 and Article 160 SO Regulation is to determine the reserve capacity need on an LFC block level in order to comply with the frequency restoration control error (FRCE) target parameters and dimensioning rules and thus ensuring operational security. The focus is on compliance with technical requirements. Accordingly, each TSO shall operate its control area with sufficient upward and downward active power reserves, which may include shared or exchanged reserves, to face imbalances between demand and supply within its control area.

f. Article 166 of SO Regulation defines 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 in principle a unilateral agreement. If two TSOs have concluded a bilateral sharing agreement providing for the mutual provision of reserves, at least two unilateral sharing agreements are established.

g. The RCC task of regional sizing of reserve capacity facilitates the TSOs' consideration of amounts for the sharing of reserves when determining the reserve capacity of the LFC block within their dimensioning process. The result of the collaboration between TSOs and the RCC under regional sizing of reserve capacity represents a lower bound for the required reserve capacity of each type of reserves in the system operation region (SOR). This amount of reserves is at least required to fulfil the minimum requirements set out in Articles 157(2) and Article 160 SO Regulation resulting in a solution guaranteeing sufficient reserve capacity in a region.

(6) 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 checked beyond each individual LFC block to guarantee appropriate reserve capacity and thus system operational security in the region.

(7) From an economic efficiency point of view, the proposed RCC task 'regional sizing of reserve capacity'

a. aims at avoiding high expenses for additional measures like those included in the system defence plan (e.g., mutual emergency assistance service (MEAS)) and coordinated remedial actions to maintain operational security in case of insufficient reserve capacity available. Thus, the RCC task 'regional sizing of reserve capacity' allows TSOs to ensure operational security with regards to complying with their frequency quality defining/target parameters in a cost-effective manner

by regional cooperation.

b. facilitates 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 reliying for sure on sharing of reserves. Geographical limitations in sense of the provisions of SO Regulation on the minimum amount of reserves to be held within the LFC block must be respected.

(8) The obligations, roles, responsibilities and governance related to the dimensioning process and the sharing of reserves process remains with the TSOs as does the freedom to contract between cooperating TSOs beyond legal requirements. The RCCs' facilitating role supports regional TSOs' cooperation and support TSOs in undertaking their operational security responsibilities.

(9) 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 capacity 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 without decrease in system operational security when concluding a sharing agreement between TSOs.

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 checking regional reserve capacity requirements and considering the effects of regional cooperation of TSOs (here: sharing of reserve capacity) without risking 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.

(10) Pursuant to Article 35(2) of the Regulation (EU) 2019/943, RCCs shall enter into operation by 1st July 2022, which means that the proposals for all the tasks listed in Article 37(1) of the Regulation shall be submitted to and approved by ACER before this date according to the approval procedure described in Article 27 of the Regulation (EU) 2019/943.

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. Therefore, this Proposal is developed in accordance with Articles 37(1)(j), 37(5) and point 7 of Annex I of the Regulation (EU) 2019/943as ENTSO for Electricity considers the referred RCC task as not already covered by the relevant network codes or guidelines.
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 SO Regulation performed on LFC block level by the respective TSO(s) according to Article 6(7) of the Regulation (EU) 2019/943 on LFC block level by the respective TSO.

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.

   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 Article 4 of this Proposal and can be summarised as checking regional aspects of the dimensioning included in Article 157 and Article 160 SO Regulation, if applied locally by relevant TSOs.

   b. 'Agreed Sharing Amount':
   The amount 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.

   c. 'Reserve capacity':
   In the sense of this proposal is the amount of FRR or RR that needs to be available to a TSO;

2. 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.

3. In addition, the following abbreviations shall apply:

ACER	Agency for the Cooperation of Energy Regulators
ENTSO-E	European Network of Transmission System Operators for Electricity
RCC	Regional Coordination Centre
RR	Replacement Reserves
FRR	Frequency Restoration Reserves
aFRR	frequency restoration reserves with automatic activation
mFRR	frequency restoration reserves with manual activation
FRCE	frequency restoration control error
LFC	Load Frequency Control
TSO	Transmission System Operator
CACM	Capacity Allocation & Congestion Management
SOR	System Operation Region

Article 3
General principles

1. The RCCs' facilitating role shall only apply to TSO-TSO interactions which are applied on the level of the TSO-TSO model and 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 Article 166 SO Regulation.

2. The RCC tasks defined in this Proposal shall take place in full respect of other methodologies and procedures approved.

Article 4
Determination of minimum reserve capacity requirements for each type of reserve capacity

1. The RCC shall facilitate each control capability receiving TSOs according to Article 166 SO Regulation of the relevant SOR involved in a sharing agreement in determining the minimum reserve capacity requirements of its LFC block for each type of reserve capacity within its dimensioning process. The aim of this facilitation by the RCC is to identify where and when the risk of simultaneous (correlated) activation of shared reserves exists.
2. To facilitate control capability receiving TSOs involved in a sharing agreement in their dimensioning process for each type of reserve capacity 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 assess the availability of sufficient reserve capacity by analysing the simultaneity of phenomena impacting generation and load per concerned LFC block as well as sufficient cross-zonal capacity for the concluded sharing of reserves at least on a day-ahead basis. Therefore, the RCC shall take into account the relevant available cross-zonal capacity resulting from the day-ahead capacity calculation process in accordance with Article 20ff of the Commission Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management[5] (hereinafter "CACM GL") and the following data provided by the relevant TSOs involved in a sharing agreement based on the rules fixed in the working arrangements between TSOs and RCCs to respect local specifications and timings:
    a. agreed sharing amount per type of reserves and direction
    b. the latest relevant generation and load forecasts
3. To determine the minimum amount of required reserve capacity for each type of reserve capacity for control capability receiving TSOs involved in a sharing agreement the RCC shall sum up their locally dimensioned reserve capacity for each type of reserve capacity according to Articles 157 and 160 SO Regulation and then subtract the determined available sharing amount for each type of reserve capacity capped by the available cross-zonal capacity resulting from the assessment under paragraph 2 for all relevant LFC blocks.
4. If the RCC determines that the agreed sharing amount cannot or only partially be provided to the control capability receiving TSO in the relevant period and thus determines that an event poses a threat to the operational security in the region if the relevant control capability receiving TSOs would rely on the agreed sharing amounts, the RCC shall issue an awareness notification to these TSOs. The relevant control capability providing TSOs and affected TSOs shall be informed about the issued awareness notification accordingly. The awareness notification shall be issued if
    a. the availability of shared reserve capacity cannot be guaranteed to the control capability receiving TSO due to 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, or
    b. there is insufficient cross-zonal capacity available for the sharing of reserves compared to the underlying assumptions of the availability of cross-zonal-capacity relied on in the relevant

[5] 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/legal-content/EN/TXT/?uri=CELEX:02015R1222-20210315.

sharing agreement.

5. Within this awareness notification, the RCC shall recommend to the relevant control capability receiving TSOs to increase their 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 amounts of sharing of reserves between the relevant LFC blocks. If the recommendation includes an adjustment of sharing of reserves, the concerns of affected TSOs shall also be taken into account. A recommendation by the RCC must be available latest before the relevant local balancing capacity gate-closure time and may be taken into account to adapt the control capability receiving TSOs' reserve capacity need resulting from the dimensioning process.
6. 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.
7. A TSO involved in a sharing agreement as control capability providing TSO, control capability receiving TSO or affected TSO may request a review of the recommendation issued by the RCC according to Article 42(4) of the Regulation (EU) 2019/943. Following the review of the recommendation, the RCC shall confirm or modify its initial recommendation.
8. Each 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.
9. If TSOs having concluded a sharing agreement, allocate cross-zonal capacity for the sharing of reserves at least day-ahead, they shall include the RCC accordingly as described in Article 5 of the Methodology defining the RCC task 'facilitating the regional procurement of balancing capacity' according to Article 37(1)(k) of the Regulation (EU) 2019/943.

Article 5
Calculation the overall amount of required reserve capacity for the system operation region

1. The RCC shall calculate the overall amount of required reserve capacity for the SOR by summing up the minimum reserve capacity requirements for each type of reserve capacity per LFC block within the SOR determined according to Article 4. The regionally sized reserve capacity for each type of reserve capacity is equal to the sum of the all required reserve capacities for each type of reserve capacity defined per LFC Block.
2. l Each two years, the RCC shall determine the regionally required reserve capacity by summing up the reserve capacity per LFC block received from each relevant TSO under Article 4(8) of this proposal and reduced by the identified sharing potentials greater than or equal to 50 MW identified following its monitoring obligation under Article 6(1) of this proposal.
3. The determination of the regionally required reserve capacity shall take into account the limitations to sharing of reserves according to Art. 157 (2)(g) SO Regulation, if any, to respect necessary requirements for the geographical distribution of required reserve capacity.

Article 6
Monitoring and reporting

1. The RCC shall support TSOs in identifying possible sharing potentials each two years. Therefore, the RCC shall determine the amount of cross-zonal-capacity per direction being available on each bidding zone border after the intraday cross-zonal gate closure time. The set of evaluated reliability margins derived from the probability density function based on the values of all quarter hours of the last two years shall be agreed by all relevant TSOs with the respective RCC in the SOR and described in the respective working arrangements. RCC shall provide the analysis of the amount of cross-zonal-capacity per direction being available after the intraday cross-zonal gate closure time for the following time resolutions: yearly, half-yearly, quarterly and monthly. TSOs shall assess the indicated sharing potentials and report on this assessment if the volume of available cross-zonal capacity identified by the RCC is greater than or equal to 50 MW in the report following Article 59 EB Regulation.
2. The monitoring task under paragraph 1 shall also be applied on bidding zone borders where a sharing agreement exists.
3. The results resulting from the RCCs' calculation of the overall amount of required reserve capacity for the system operation region under Article 5(2) shall be included in the report following Article 59 EB Regulation by ENTSO-E.
4. The RCC 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 RCC shall review the situations where a TSO decided to deviate from a recommendation made by the RCC and propose possible improvements of the RCC task 'regional sizing of reserve capacity' to the relevant TSOs, if considered necessary.

Article 7
Implementation of this Proposal

1. By 48 months after the approval of this Proposal in accordance with the procedure set out in Article 27 of the Regulation (EU) 2019/943, 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. 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)(d) 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.