

ACER Decision on SOR: Annex I

Definition of System Operation Regions (SOR)

in accordance with Article 36 of the Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity

6 April 2020

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Whereas

- (1) This document defines the system operation regions (hereafter referred to as “SORs”) in accordance with Article 36 of Regulation (EU) 2019/943 of the European Parliament and of the Council on the internal market for electricity (hereafter referred to as “Regulation 2019/943”).
- (2) This document takes into account the general principles and goals set out in Regulation 2019/943 as well as in:
 - a. the 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 (hereafter referred to as “Directive 2019/944”),
 - b. all the applicable Network Codes and Guidelines referred to in the Regulation 2019/943, adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009 such as the Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation (hereafter referred to as “SO Regulation”), Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management (hereafter referred to as “CACM Regulation”), Regulation (EU) 2016/1719 establishing a guideline on forward capacity allocation (hereafter referred to as “FCA Regulation”), Regulation (EU) 2017/2196 establishing a network code on electricity emergency and restoration (hereafter referred to as ‘ER Regulation’) and Regulation (EU) 2017/2195 establishing a guideline on electricity balancing (hereafter referred to as ‘EB Regulation’).
- (3) This document specifies the geographical scope in which technical processes need to be coordinated in a harmonised way in an SOR, by specifying which transmission system operators (TSOs), bidding zones, bidding zone borders, capacity calculation regions and outage coordination regions are covered by each of the SORs.
- (4) Regulation 2019/943 recognises, in its recitals 42 and 53, that an effective progress towards the optimal management of the electricity transmission network can be achieved by establishing the regional geographical scope for which harmonisation of the cooperative operational processes should take place. This document clarifies the regional scope for optimising processes, and consequently contributes to the general objectives of the Regulation 2019/943 to the benefit of all market participants and electricity end consumers and to contribute effectively to enhance system security and market efficiency.
- (5) In accordance with Article 36(2) of Regulation 2019/943, this document also specifies the coordination between regional coordination centres for the borders adjacent to SORs.
- (6) The European electricity network evolves with the primary goal of ensuring stability of the system and security of supply while enabling the integration of the EU energy markets and fulfilling the ambitious objectives for deployment of renewable energy sources in the EU. This is only possible if all relevant operational processes are coordinated and applied by all TSOs across Europe.
- (7) 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 2019/943. ENTSO for Electricity should facilitate cooperation between Union TSOs and third country TSOs concerning secure system operation.
- (8) In this respect, Regulation 2019/943, in its recital 70, further stresses the need for close cooperation with Member States, the Energy Community Contracting Parties and other third countries which apply Regulation 2019/943 or are part of the synchronous area of Continental

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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.

- (9) This document provides that 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.
- (10) ENTSO-E structures and regional agreements, provisions and methodologies listed in Article 6(2) and 6(3) of the SO Regulation and in particular the synchronous area agreements implemented in line with Article 118 of SO Regulation (including as applicable the agreements with TSOs not bound by the SO Regulation, implementing Article 13 of the SO Regulation), and Article 10 of the ER Regulation, will be tools for TSOs to ascertain and clarify operational coordination.

Article 1

Subject matter and scope

1. This document specifies, in Article 3, which transmission system operators, bidding zones, bidding zone borders, capacity calculation regions and outage coordination regions are covered by each of the system operation regions, taking into account the grid topology, including the degree of interconnection and interdependency of the electricity system in terms of flows.
2. This document specifies, in Article 4, how the coordination between regional coordination centres is to take place for bidding zone borders adjacent to SORs.

Article 2

Definitions and interpretation

1. For the purposes of this document, the terms used shall have the meaning of the definitions included in Article 2 of the Regulation 2019/943, in the Directive 2019/944, in the SO Regulation and CACM Regulation.
2. The following acronyms are used in this document:
 - (a) CCR means capacity calculation region as determined pursuant to Article 15 of the CACM Regulation;
 - (b) OCR means outage coordination region;
 - (c) BZ means bidding zone;
 - (d) APG means Austrian Power Grid AG;
 - (e) VUEN means Vorarlberger Übertragungsnetz GmbH;
 - (f) Elia means Elia System Operator SA;
 - (g) ESO means Electroenergien Sistemem Operator EAD;
 - (h) ČEPS means ČEPS a.s.;
 - (i) TransnetBW means TransnetBW GmbH;
 - (j) TenneT DE means TenneT TSO GmbH ;
 - (k) Amprion means Amprion GmbH;
 - (l) 50Hertz means 50Hertz Transmission GmbH;
 - (m) Energinet means Energinet Electricity System Operator;
 - (n) Elering means Elering AS;
 - (o) REE means Red Eléctrica de España S.A.;

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- (p) Fingrid means Fingrid Oyj;
 - (q) RTE means Réseau de Transport d'Electricité ;
 - (r) NG ESO means National Grid ESO;
 - (s) SONI means System Operator for Northern Ireland Ltd;
 - (t) IPTO means Independent Power Transmission Operator S.A.;
 - (u) HOPS means HOPS d.o.o.;
 - (v) MAVIR ZRt. Means MAVIR Magyar Villamosenergia-ipari Átviteli Rendszerirányító Zártkörűen Működő Részvénytársaság;
 - (w) EirGrid means EirGrid plc;
 - (x) TERNA means Terna - Rete Elettrica Nazionale SpA;
 - (y) Litgrid means Litgrid AB;
 - (z) Creos means Creos Luxembourg S.A.;
 - (aa) AST means AS Augstsprieguma tīkls;
 - (bb) TenneT NL means TenneT TSO B.V.;
 - (cc) PSE means Polskie Sieci Elektroenergetyczne S.A.;
 - (dd) REN means Rede Eléctrica Nacional, S.A.;
 - (ee) Tranelectrica means C.N. Tranelectrica S.A.;
 - (ff) Svenska Kraftnät means Svenska Kraftnät;
 - (gg) ELES means ELES, d.o.o.; and
 - (hh) SEPS means Slovenská elektrizačná prenosová sústava, a.s.
3. Unless the context requires otherwise:
- (a) the table of contents and headings are inserted for convenience only and do not affect the interpretation of this document; and
 - (b) any reference to legislation, regulations, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force.

Article 3 **System Operation Regions (SORs)**

1. System operation regions include TSOs that have been designated or assigned with responsibilities which are relevant for system operation, such as, but not limited to: calculation of capacity, assessment of needed remedial actions to ensure security of the whole system, coordination of all the outages to ensure security and efficiency, adequacy assessment and tasks related to the provision of system balancing.
2. Where more than one TSO exists in a Member State, the list of TSOs contained in this Article shall be without prejudice to the Member States' ability to designate¹ or assign², or the regulatory authorities' ability to assign³, one or several responsibilities to other TSOs in accordance with the Electricity Directive.
3. TSOs included in a CCR but not incorporated in the SOR of the mentioned CCR are considered relevant stakeholders for the purpose of the SOR definition and shall be properly consulted by the TSOs of each SOR. When consulting the relevant stakeholders, the TSOs of each SOR shall take the

¹ In accordance with Article 43 of 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 (the Electricity Directive)

² In accordance with Article 40 (2) of the Electricity Directive

³ In accordance with Article 59 (6) (h) of the Electricity Directive

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utmost account of the views expressed by the TSOs included in a CCR but not incorporated in the SOR of the mentioned CCR.

4. In case of amendments to the Determination of CCRs pursuant to Article 15 of the CACM Regulation and until such amendments are incorporated in this document, the list of bidding zones, bidding zone borders and TSOs in SORs defined pursuant to paragraph 5 shall automatically reflect the changes to the Determination of CCRs.
5. The SORs shall be defined as follows:

(a) Baltic SOR

CCR	OCR	TSOs	BZ	BZ borders
Baltic CCR	Baltic (1)	Litgrid AST Elering	LT LV EE	Baltic CCR borders

(1) The Baltic OCR equals the Baltic CCR.

- i. When developing procedures for the adoption and revision of coordinated actions and recommendations, in line with Article 42 of the Regulation 2019/943, TSOs of Baltic SOR shall consult relevant TSOs of Nordic SOR and relevant TSOs of Central Europe SOR. When consulting the relevant TSOs of Nordic SOR and Central Europe SOR, the TSOs of the Baltic SOR shall take the utmost account of the views expressed by the relevant TSOs of Nordic SOR and Central Europe SOR.
- ii. When the respective regulatory authorities of the TSOs of the Baltic SOR approve the procedures referred to in paragraph i., as a result of the implementation of requirements in Article 35(1)(e) of the Regulation 2019/943, they should do so in consultation with the respective regulatory authorities of the relevant TSOs of Nordic SOR and Central Europe SOR, upon individual request by these regulatory authorities.

(b) Nordic SOR

CCR	OCR	TSOs	BZ	BZ borders
Nordic	Nordic (2)	Energinet Fingrid Svenska Kraftnät	DK1, DK2 FI SE1, SE2, SE3, SE4	Nordic CCR borders

(2) The Nordic OCR encompasses the Nordic assets relevant for outage coordination in accordance with the Nordic System Operation Agreement.

(c) IU SOR

CCR	OCR	TSOs	BZ	BZ borders
IU Channel	IU (3) Channel (4)	SONI EirGrid NGESO	SEM GB	GB-SEM Channel CCR borders

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- (3) The IU OCR is the Outage Co-ordination Region associated with the IU CCR.
- (4) The Channel OCR is the Outage Co-ordination Region associated with the Channel CCR.
- i. When developing procedures for the adoption and revision of coordinated actions and recommendations, in line with Article 42 of the Regulation 2019/943, TSOs of IU SOR shall consult relevant TSOs of Central Europe SOR. When consulting the relevant TSOs of Central SORs, the TSOs of IU SOR shall take the utmost account of the views expressed by the relevant TSOs of Central Europe SOR.
- ii. When the respective regulatory authorities of the TSOs of the IU SOR approve the procedures referred to in paragraph i., as a result of the implementation of requirements in Article 35(1)(e) of the Regulation 2019/943, they should do so in consultation with the respective regulatory authorities of the TSOs of Central Europe SOR, upon individual request by these regulatory authority

(d) Central Europe SOR

CCR	OCR	TSOs	BZ	BZ borders	
Core	OCR based on Core	RTE ELIA TenneT NL	FR BE NL	Core CCR borders Italy North CCR borders	
Italy North	OCR based on Italy North (5)	Amprion TransnetBW TenneT DE 50Hertz Creos PSE ČEPS APG VUEN MAVIR ELES SEPS HOPS Transelectrica TERNA	DE/LU PL CZ AT HU SI SK HR RO IT NORD		
SWE	SWE (6)	REE REN	ES PT		SWE CCR borders

- (5) The Outage Coordination Regions involving the TSOs of the Synchronous Area Continental Europe are defined in the Synchronous Area Framework Agreement for RG CE – Annex 4: Policy on Coordinated Operational Planning, Article C-2-1.
- (6) The SWE OCR is equal to the SWE CCR.

(e) SEE SOR

CCR	OCR	TSOs	BZ	BZ borders
SEE	OCR based on SEE (7)	ESO IPTO	BG GR	SEE CCR borders

(7) The Outage Coordination Regions involving the TSOs of the Synchronous Area Continental Europe are defined in the Synchronous Area Framework Agreement for RG CE – Annex 4: Policy on Coordinated Operational Planning, Article C-2-1.

- i. Concerning the BG-RO bidding zone border, when developing procedures for the adoption and revision of coordinated actions and recommendations, in line with Article 42 of the Regulation 2019/943, TSOs of SEE SOR shall consult with the relevant TSOs of Central Europe SOR. In doing so, the TSOs of the SEE SOR shall take the utmost account of the views expressed by the relevant TSOs of Central Europe SOR.
- ii. When the respective regulatory authorities of the TSOs of the SEE SOR approve the procedures referred to in paragraph i., as a result of the implementation of requirements in Article 35(1)(e) of the Regulation 2019/943, they should do so in consultation with the respective regulatory authorities of the relevant TSOs of Central Europe SOR, upon individual request by these regulatory authorities.

Article 4
Coordination of the bidding zone borders adjacent to SORs

1. Bidding Zone borders adjacent to Baltic SOR and Nordic SOR

- (a) The bidding zone borders adjacent to Baltic SOR and Nordic SOR are:
 - (i) Estonia - Finland (EE - FI)
 - (ii) Lithuania – Sweden fourth bidding zone (LT-SE4)
- (b) The RCC established by the TSOs of the Baltic SOR shall coordinate these bidding zone borders in accordance with applicable terms, conditions and methodologies, covering inter alia the:
 - (i) Baltic capacity calculation methodologies pursuant to Articles 20 and 21 of the CACM Regulation and Article 10 of the FCA Regulation,
 - (ii) Baltic common methodology for coordinated redispatching and countertrading pursuant to Articles 35 of the CACM Regulation and Baltic common methodology for redispatching and countertrading cost sharing, pursuant to 74 of the CACM Regulation, if relevant,
 - (iii) Baltic common provisions for regional operational security coordination pursuant to Article 76 of the SO Regulation,
 - (iv) Common grid model methodology pursuant to Articles 67 and 70 of the SO Regulation,
 - (v) Baltic Regional Outage Coordination according to Article 80 of the SO Regulation,
 - (vi) cooperative processes established pursuant to Article 38 of Regulation 2019/943.

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- (c) The RCC established by the TSOs of the Baltic SOR shall allow Svenska Kraftnät and Fingrid to participate in the coordination of the borders through the RCC established by Nordic TSOs, which will have an agreement with the RCC established by Baltic TSOs.

2. Bidding Zone borders adjacent to Baltic SOR and Central Europe SOR

- (a) The bidding zone border adjacent to Baltic SOR and Central Europe SOR is Lithuania- Poland (LT-PL).
- (b) The RCC established by the TSOs in the Baltic SOR shall coordinate the LT-PL bidding zone border in accordance with applicable terms, conditions and methodologies, covering inter alia the:
 - (i) Baltic Capacity Calculation Methodology pursuant to Articles 20 and 21 of the CACM Regulation and Article 10 of the FCA Regulation,
 - (ii) Baltic common methodology for coordinated redispatching and countertrading and Baltic common methodology for redispatching and countertrading cost sharing, pursuant to Articles 35 and 74 of the CACM Regulation,
 - (iii) Baltic Coordinated Security Analysis Methodology pursuant to Article 76 of the SO Regulation,
 - (iv) Common Grid Model Methodology pursuant to Articles 67 and 70 of the SO Regulation,
 - (v) Baltic Regional Outage Coordination according to Article 80 of the SO Regulation.
- (c) Concerning the LT-PL bidding zone border and considering the related tasks listed in Article 37(1) of the Regulation 2019/943, the RCC established by TSOs in the Baltic SOR shall coordinate:
 - (i) the tasks of regional relevance, in cooperation with PSE, which will have a contractual relationship with the RCC established by Baltic TSOs, and
 - (ii) the tasks of cross-regional relevance together with the RCC(s) established by the TSOs of Central Europe SOR, as necessary.

3. Bidding Zone borders adjacent to Nordic SOR and Central Europe SOR

- (a) The bidding zone borders adjacent to Nordic SOR and Central Europe SOR are the bidding zone borders of Hansa CCR.
- (b) The RCC established by the TSOs in the Nordic SOR and the concerned RCC established by the TSOs in the Central Europe SOR shall coordinate those bidding zone borders in accordance with the applicable terms, conditions and methodologies, covering inter alia the:
 - (i) Hansa Capacity Calculation Methodology pursuant to Articles 20 and 21 of the CACM Regulation and Article 10 of the FCA Regulation,
 - (ii) Common methodology for coordinated redispatching and countertrading and common methodology for redispatching and countertrading cost sharing, pursuant to Articles 35 and 74 of the CACM Regulation,
 - (iii) Hansa Coordinated Security Analysis Methodology pursuant to Article 76 of the SO Regulation,
 - (iv) Hansa Regional Outage Coordination according to Article 80 of the SO Regulation,
 - (v) Common Grid Model Methodology pursuant to Articles 67 and 70 of the SO Regulation,

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- (vi) cooperative processes established for the interface between the Nordic SOR and the Central Europe SOR pursuant to Article 38 of the Regulation 2019/943.

4. Bidding Zone borders adjacent to IU SOR and Central Europe SOR

- (a) The bidding zone borders adjacent to IU SOR and Central Europe SOR are the bidding zone borders of Channel CCR.
- (b) The RCC established by the TSOs in the IU SOR and the concerned RCC(s) established by the TSOs in Central Europe shall coordinate those three bidding zone borders in accordance with the applicable terms, conditions and methodologies, covering inter alia the:
 - (i) Channel Capacity Calculation Methodology pursuant to Articles 20 and 21 of the CACM Regulation and Article 10 of the FCA Regulation,
 - (ii) Common methodology for coordinated redispatching and countertrading and common methodology for redispatching and countertrading cost sharing, pursuant to Articles 35 and 74 of the CACM Regulation,
 - (iii) Channel Coordinated Security Analysis Methodology pursuant to Article 76 of the SO Regulation,
 - (iv) Common Grid Model Methodology pursuant to Articles 67 and 70 of the SO Regulation,
 - (v) Channel Regional Outage Coordination according to Article 80 of the SO Regulation,
 - (vi) cooperative processes established for the interface between the IU SOR and the Central Europe SOR pursuant to Article 38 of the Regulation 2019/943.

5. Bidding Zone borders adjacent to SEE SOR and Central Europe SOR

- (a) The bidding zone borders adjacent to SEE SOR and Central Europe SOR are:
 - i. Bulgaria-Romania (BG-RO), which is integrated in the SEE SOR, and
 - ii. Bidding zone borders of GRIT CCR.
- (b) The RCC established by the TSOs in the SEE SOR shall coordinate the BG-RO bidding zone border in accordance with the applicable terms, conditions and methodologies, covering inter alia the:
 - (i) SEE Capacity Calculation Methodology pursuant to Articles 20 and 21 of the CACM Regulation and Article 10 of the FCA Regulation,
 - (ii) SEE common methodology for coordinated redispatching and countertrading and common methodology for redispatching and countertrading cost sharing, pursuant to Articles 35 and 74 of the CACM Regulation,
 - (iii) SEE Coordinated Security Analysis Methodology pursuant to Article 76 of the SO Regulation,
 - (iv) Common Grid Model Methodology pursuant to Articles 67 and 70 of the SO Regulation,
 - (v) SEE Regional Outage Coordination according to Article 80 of the SO Regulation,
 - (vi) cooperative processes established pursuant to Article 38 of Regulation 2019/943.
- (c) Concerning the BG-RO bidding zone border and considering the related tasks listed in Article 37(1) of the Regulation 2019/943, the RCC established by TSOs in the SEE SOR shall coordinate:

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- (i) the tasks of regional relevance in cooperation with Transelectrica, which will have a contractual relationship with the RCC established by TSOs in the SEE SOR, and
 - (ii) the tasks of cross-regional relevance together with the RCC(s) established by the TSOs of Central Europe SOR, as necessary.
- (d) As relevant, the RCC established by TSOs in the SEE SOR and/or the RCC established by TSOs in the Central Europe SOR shall coordinate with TERNA for the bidding zone borders of the GRIT CCR and for the IT CNOR, IT CSUD, IT SUD, IT SICI, IT SARD and IT ROSN bidding zones in accordance with applicable terms, conditions and methodologies, covering inter alia the:
- (i) GRIT Capacity Calculation Methodology pursuant to Articles 20 and 21 of the CACM Regulation and Article 10 of the FCA Regulation,
 - (ii) Common methodology for coordinated redispatching and countertrading and common methodology for redispatching and countertrading cost sharing, pursuant to Articles 35 and 74 of the CACM Regulation,
 - (iii) GRIT Coordinated Security Analysis Methodology pursuant to Article 76 of the SO Regulation,
 - (iv) Common Grid Model Methodology pursuant to Articles 67 and 70 of the SO Regulation,
 - (v) GRIT Regional Outage Coordination according to Article 80 of the SO Regulation,
 - (vi) cooperative processes established for the interface between the SEE SOR and Central Europe SOR pursuant to Article 38 of the Regulation 2019/943.
- (e) Concerning the bidding zone borders of the GRIT CCR and IT CNOR, IT CSUD, IT SUD, IT SICI, IT SARD and IT ROSN bidding zones:
- (i) the tasks of regional relevance listed in Article 37(1) of the Regulation 2019/943 shall be executed by the relevant RCC in cooperation with TERNA, based on a contractual relationship, and
 - (ii) the tasks of cross-regional relevance shall be coordinated by the RCC established by the TSOs in SEE SOR together with the RCC established by the TSOs of Central Europe SOR, as necessary.

Article 5 Implementation of the SORs

1. No later than eighteen months after the approval by ACER of this document, all TSOs of a SOR that is neighbouring to a third country TSOs shall endeavour to conclude with the third country TSOs not bound by the Regulation 2019/943 agreements setting the basis for their cooperation concerning secure system operation and setting out arrangements for the compliance of the third country TSOs with the obligations set in Regulation 2019/943.
2. The SORs, as defined in this document, shall apply as soon as the decision has been taken and published by ACER on its webpage, in accordance with Article 36(3) of the Regulation 2019/943.

Article 6
Language

1. The reference language for the document shall be English. For the avoidance of doubt, where TSOs need to translate this document into their national language(s), in the event of inconsistencies between the English version published by ACER in accordance with Article 36(3) of the Regulation 2019/943 and any version in another language, the relevant TSOs shall, in accordance with national legislation, provide the relevant national regulatory authorities with an updated translation of this document.