

**APPROVAL BY THE SEE CCR REGULATORY
AUTHORITIES**

OF

**THE SEE CCR TSOs' PROPOSAL OF THE COMMON
CAPACITY CALCULATION METHODOLOGY FOR THE DAY-
AHEAD AND INTRADAY MARKET TIME-FRAME IN
ACCORDANCE WITH ARTICLE 21 OF COMMISSION
REGULATION (EU) 2015/1222 OF 24 JULY 2015
ESTABLISHING A GUIDELINE ON CAPACITY ALLOCATION
AND CONGESTION MANAGEMENT**

04 April 2019

I. Introduction and legal context

This document elaborates an agreement of the SEE Capacity Calculation Region (hereinafter: SEE CCR) Regulatory Authorities (hereinafter: SEE NRAs), agreed on 04 April 2019 at SEE CCR Energy Regulators' Regional forum, on the SEE CCR TSOs' (hereinafter: SEE TSOs) proposal of common capacity calculation methodology for the day-ahead and intraday market timeframe (hereinafter: SEE CCM), submitted as required by Article 20 (2) and in accordance with Article 21 of Commission Regulation 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management (hereinafter: CACM Regulation).

This agreement of the SEE NRAs shall provide evidence that a decision on the SEE CCM does not, at this stage, need to be adopted by ACER pursuant to Article 9(11) of CACM Regulation. It is intended to constitute the basis on which the SEE NRAs will each subsequently approve the SEE CCM pursuant to Article 9 (12) of CACM Regulation.

The legal provisions that lie at the basis of the SEE CCM, and this SEE NRAs agreement on the above mentioned methodology, can be found in Articles 3, 8, 9, 14, 20, 21, 22, 23, 24, 25, 26, 29, 30, 46 and 58 of the CACM Regulation. They are set out here for reference.

Article 3

Objectives of capacity allocation and congestion management cooperation

This Regulation aims at:

- (a) Promoting effective competition in the generation, trading and supply of electricity;*
- (b) Ensuring optimal use of the transmission infrastructure;*
- (c) Ensuring operational security;*
- (d) Optimising the calculation and allocation of cross-zonal capacity;*
- (e) (...);*
- (f) (...);*
- (g) Contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union;*
- (h) (...);*
- (i) (...);*
- (j) (...).*

Article 8

TSOs' tasks related to single day-ahead and intraday coupling

1. *In Member States electrically connected to another Member State all TSOs shall participate in the single day-ahead and intraday coupling.*

2. *TSOs shall:*

[...]

(c) establish and perform capacity calculation in accordance with Articles 14 to 30;

[...]

(e) calculate and send cross zonal capacities and allocation constraints in accordance with Articles 46 and 58;

[...]

Article 9

Adoption of terms and conditions or methodologies

1. TSOs and NEMOs shall develop the terms and conditions or methodologies required by this Regulation and submit them for approval to the competent regulatory authorities within the respective deadlines set out in this Regulation. Where a proposal for terms and conditions or methodologies pursuant to this Regulation needs to be developed and agreed by more than one TSO or NEMO, the participating TSOs and NEMOs shall closely cooperate. TSOs, with the assistance of ENTSO for Electricity, and all NEMOs shall regularly inform the competent regulatory authorities and the Agency about the progress of developing these terms and conditions or methodologies.

[...]

5. Each regulatory authority shall approve the terms and conditions or methodologies used to calculate or set out the single day-ahead and intraday coupling developed by TSOs and NEMOs. They shall be responsible for approving the terms and conditions or methodologies referred to in paragraphs 6, 7 and 8.

6. (...)

7. The proposals for the following terms and conditions or methodologies shall be subject to approval by all regulatory authorities of the concerned region:

a. the common capacity calculation methodology in accordance with Article 20(2);

[...]

8. (...)

9. The proposal for terms and conditions or methodologies shall include a proposed timescale for their implementation and a description of their expected impact on the objectives of this Regulation. Proposals on terms and conditions or methodologies subject to the approval by several or all regulatory authorities shall be submitted to the Agency at the same time that they are submitted to regulatory authorities. Upon request by the competent regulatory authorities, the Agency shall issue an opinion within three months on the proposals for terms and conditions or methodologies.

10. Where the approval of the terms and conditions or methodologies requires a decision by more than one regulatory authority, the competent regulatory authorities shall consult and closely cooperate and coordinate with each other in order to reach an agreement. Where applicable, the competent regulatory authorities shall take into account the opinion of the Agency. Regulatory authorities shall take decisions concerning the submitted terms and conditions or methodologies in accordance with paragraphs 6, 7 and 8, within six months following the receipt of the terms and conditions or methodologies by the regulatory authority or, where applicable, by the last regulatory authority concerned.

11. (...)

12. In the event that one or several regulatory authorities request an amendment to approve the terms and conditions or methodologies submitted in accordance with paragraphs 6, 7 and 8, the relevant TSOs or NEMOs shall submit a proposal for amended terms and conditions or methodologies for approval within two months following the requirement from the regulatory authorities. The competent regulatory authorities shall decide on the amended terms and conditions or methodologies within two months following their submission. Where the competent regulatory authorities have not been able to reach an agreement on terms and conditions or methodologies pursuant to paragraphs (6) and (7) within the two-month deadline, or upon their joint request, the Agency shall adopt a decision concerning the amended terms and conditions or methodologies within six months, in accordance with Article 8(1) of Regulation (EC) No 713/2009. If the relevant TSOs or NEMOs fail to submit a proposal for amended terms and conditions or methodologies, the procedure provided for in paragraph 4 of this Article shall apply.

13. (...)

14. TSOs and NEMOs responsible for establishing the terms and conditions or methodologies in accordance with this Regulation shall publish them on the internet after approval by the competent regulatory authorities or, if no such approval is required, after their establishment, except where such information is considered as confidential in accordance with Article 13.

Article 14

Capacity calculation time-frames

1. All TSOs shall calculate cross-zonal capacity for at least the following time-frames:

- (a) day-ahead, for the day-ahead market;
- (b) intraday, for the intraday market.

2. For the day-ahead market time-frame, individual values for cross-zonal capacity for each day-ahead market time unit shall be calculated. For the intraday market time-frame, individual values for cross-zonal capacity for each remaining intraday market time unit shall be calculated.
3. For the day-ahead market time-frame, the capacity calculation shall be based on the latest available information. The information update for the day-ahead market time-frame shall not start before 15:00 market time two days before the day of delivery.
4. All TSOs in each capacity calculation region shall ensure that cross-zonal capacity is recalculated within the intraday market time-frame based on the latest available information. The frequency of this recalculation shall take into consideration efficiency and operational security.

Article 20

Introduction of flow-based capacity calculation methodology

1. For the day-ahead market time-frame and intraday market time-frame the approach used in the common capacity calculation methodologies shall be a flow-based approach, except where the requirement under paragraph 7 is met.
2. No later than 10 months after the approval of the proposal for a capacity calculation region in accordance with Article 15(1), all TSOs in each capacity calculation region shall submit a proposal for a common coordinated capacity calculation methodology within the respective region. The proposal shall be subject to consultation in accordance with Article 12. [...]
4. No later than six months after at least all South East Europe Energy Community Contracting Parties participate in the single day-ahead coupling, the TSOs from at least Croatia, Romania, Bulgaria and Greece shall jointly submit a proposal to introduce a common capacity calculation methodology using the flow-based approach for the day-ahead and intraday market time-frame. The proposal shall provide for an implementation date of the common capacity calculation methodology using the flow-based approach of no longer than two years after the participation of all SEE Energy Community Contracting Parties in the single day-ahead coupling. The TSOs from Member States which have borders with other regions are encouraged to join the initiatives to implement a common flow-based capacity calculation methodology with these regions. [...]
7. TSOs may jointly request the competent regulatory authorities to apply the coordinated net transmission capacity approach in regions and bidding zone borders other than those referred to in paragraphs 2 to 4, if the TSOs concerned are able to demonstrate that the application of the capacity calculation methodology using the flow-based approach would not yet be more efficient compared to the coordinated net transmission capacity approach and assuming the same level of operational security in the concerned region.

Article 21

Capacity calculation methodology

1. The proposal for a common capacity calculation methodology for a capacity calculation region determined in accordance with Article 20(2) shall include at least the following items for each capacity calculation time-frame:
 - (a) methodologies for the calculation of the inputs to capacity calculation, which shall include the following parameters:
 - (i) a methodology for determining the reliability margin in accordance with Article 22;
 - (ii) the methodologies for determining operational security limits, contingencies relevant to capacity calculation and allocation constraints that may be applied in accordance with Article 23;
 - (iii) the methodology for determining the generation shift keys in accordance with Article 24;
 - (iv) the methodology for determining remedial actions to be considered in capacity calculation in accordance with Article 25.
 - (b) a detailed description of the capacity calculation approach which shall include the following:
 - (i) a mathematical description of the applied capacity calculation approach with different capacity calculation inputs;
 - (ii) rules for avoiding undue discrimination between internal and cross-zonal exchanges to ensure compliance with point 1.7 of Annex I to Regulation (EC) No 714/2009;
 - (iii) rules for taking into account, where appropriate, previously allocated cross-zonal capacity;

- (iv) *rules on the adjustment of power flows on critical network elements or of cross-zonal capacity due to remedial actions in accordance with Article 25;*
- (v) *(...)*
- (vi) *for the coordinated net transmission capacity approach, the rules for calculating cross-zonal capacity, including the rules for efficiently sharing the power flow capabilities of critical network elements among different bidding zone borders;*
- (vii) *(...)*

(c) *a methodology for the validation of cross-zonal capacity in accordance with Article 26.*

2. *For the intraday capacity calculation time-frame, the capacity calculation methodology shall also state the frequency at which capacity will be reassessed in accordance with Article 14(4), giving reasons for the chosen frequency.*

3. *The capacity calculation methodology shall include a fallback procedure for the case where the initial capacity calculation does not lead to any results.*

4. *[...]*

Article 22

Reliability margin methodology

1. *The proposal for a common capacity calculation methodology shall include a methodology to determine the reliability margin. The methodology to determine the reliability margin shall consist of two steps. First, the relevant TSOs shall estimate the probability distribution of deviations between the expected power flows at the time of the capacity calculation and realised power flows in real time. Second, the reliability margin shall be calculated by deriving a value from the probability distribution.*

2. *The methodology to determine the reliability margin shall set out the principles for calculating the probability distribution of the deviations between the expected power flows at the time of the capacity calculation and realised power flows in real time, and specify the uncertainties to be taken into account in the calculation. To determine those uncertainties, the methodology shall in particular take into account:*

(a) unintended deviations of physical electricity flows within a market time unit caused by the adjustment of electricity flows within and between control areas, to maintain a constant frequency;

(b) uncertainties which could affect capacity calculation and which could occur between the capacity calculation timeframe and real time, for the market time unit being considered.

3. *In the methodology to determine the reliability margin, TSOs shall also set out common harmonised principles for deriving the reliability margin from the probability distribution.*

4. *On the basis of the methodology adopted in accordance with paragraph 1, TSOs shall determine the reliability margin respecting the operational security limits and taking into account uncertainties between the capacity calculation time-frame and real time, and the remedial actions available after capacity calculation.*

5. *For each capacity calculation time-frame, the TSOs concerned shall determine the reliability margin for critical network elements, where the flow-based approach is applied, and for cross-zonal capacity, where the coordinated net transmission capacity approach is applied.*

Article 23

Methodologies for operational security limits, contingencies and allocation constraints

1. *Each TSO shall respect the operational security limits and contingencies used in operational security analysis.*

2. *If the operational security limits and contingencies used in capacity calculation are not the same as those used in operational security analysis, TSOs shall describe in the proposal for the common capacity calculation methodology the particular method and criteria they have used to determine the operational security limits and contingencies used for capacity calculation.*

3. *If TSOs apply allocation constraints, they can only be determined using:*

(a) constraints that are needed to maintain the transmission system within operational security limits and that cannot be transformed efficiently into maximum flows on critical network elements; or

(b) constraints intended to increase the economic surplus for single day-ahead or intraday coupling.

Article 24

Generation shift keys methodology

- 1. The proposal for a common capacity calculation methodology shall include a proposal for a methodology to determine a common generation shift key for each bidding zone and scenario developed in accordance with Article 18.*
- 2. The generation shift keys shall represent the best forecast of the relation of a change in the net position of a bidding zone to a specific change of generation or load in the common grid model. That forecast shall notably take into account the information from the generation and load data provision methodology.*

Article 25

Methodology for remedial actions in capacity calculation

- 1. Each TSO within each capacity calculation region shall individually define the available remedial actions to be taken into account in capacity calculation to meet the objectives of this Regulation.*
- 2. Each TSO within each capacity calculation region shall coordinate with the other TSOs in that region the use of remedial actions to be taken into account in capacity calculation and their actual application in real time operation.*
- 3. To enable remedial actions to be taken into account in capacity calculation, all TSOs in each capacity calculation region shall agree on the use of remedial actions that require the action of more than one TSO.*
- 4. Each TSO shall ensure that remedial actions are taken into account in capacity calculation under the condition that the available remedial actions remaining after calculation, taken together with the reliability margin referred to in Article 22, are sufficient to ensure operational security.*
- 5. Each TSO shall take into account remedial actions without costs in capacity calculation.*
- 6. Each TSO shall ensure that the remedial actions to be taken into account in capacity calculation are the same for all capacity calculation time-frames, taking into account their technical availabilities for each capacity calculation timeframe.*

Article 26

Cross-zonal capacity validation methodology

- 1. Each TSO shall validate and have the right to correct cross-zonal capacity relevant to the TSO's bidding zone borders or critical network elements provided by the coordinated capacity calculators in accordance with Articles 27 to 31.*
 - 2. Where a coordinated net transmission capacity approach is applied, all TSOs in the capacity calculation region shall include in the capacity calculation methodology referred to in Article 21 a rule for splitting the correction of cross-zonal capacity between the different bidding zone borders.*
 - 3. Each TSO may reduce cross-zonal capacity during the validation of cross-zonal capacity referred to in paragraph 1 for reasons of operational security.*
- [...]

Article 29

Regional calculation of cross-zonal capacity

- [...]
- 8. Each coordinated capacity calculator applying the coordinated net transmission capacity approach shall:*
 - (a) use the common grid model, generation shift keys and contingencies to calculate maximum power exchange on bidding zone borders, which shall equal the maximum calculated exchange between two bidding zones on either side of the bidding zone border respecting operational security limits;*
 - (b) adjust maximum power exchange using remedial actions taken into account in capacity calculation in accordance with Article 25;*
 - (c) adjust maximum power exchange, applying rules for avoiding undue discrimination between internal and cross-zonal exchanges in accordance with Article 21(1)(b)(ii);*
 - (d) apply the rules set out in accordance with Article 21(1)(b)(vi) for efficiently sharing the power flow capabilities of critical network elements among different bidding zone borders;*
 - (e) calculate cross-zonal capacity, which shall be equal to maximum power exchange adjusted for the reliability margin and previously allocated cross-zonal capacity*

[...]

Article 30

Validation and delivery of cross-zonal capacity

1. *Each TSO shall validate the results of the regional capacity calculation for its bidding zone borders or critical network elements, in accordance with Article 26.*
2. (...)
3. *Each coordinated capacity calculator shall provide the validated cross-zonal capacities and allocation constraints for the purposes of allocating capacity in accordance with Articles 46 and 58.*

Article 46

Provision of input data

1. *Each coordinated capacity calculator shall ensure that cross-zonal capacity and allocation constraints shall be provided to relevant NEMOs in time to ensure the publication of cross-zonal capacity and of allocation constraints to the market no later than 11.00 market time day-ahead.*

[...]

Article 58

Provision of input data

1. *Each coordinated capacity calculator shall ensure that cross-zonal capacity and allocation constraints are provided to the relevant NEMOs no later than 15 minutes before the intraday cross-zonal gate opening time.*

[...]

II. The SEE CCM Proposal

The SEE CCM was consulted by the SEE TSOs through ENTSO-E for one month from 13 November 2017 to 14 December 2017, in line with Article 12 and Article 20 of CACM Regulation¹.

The SEE CCM, dated January 2018, was received by the last Regulatory Authority of the SEE CCR on 19 January 2018. The proposal included proposed timescales for its implementation and a description of its expected impact on the objectives of CACM Regulation, in line with Article 9 (9) of CACM Regulation.

Article 9 (10) of CACM Regulation requires SEE NRAs to consult and closely cooperate and coordinate with each other in order to reach an agreement, and make decisions within six months following receipt of submissions of the last Regulatory Authority concerned. A decision was therefore required by each Regulatory Authority by 19 July 2018.

SEE NRAs reached a unanimous agreement, at the SEE CCR Energy Regulators' Regional forum organised on 8 June 2018, to request to the SEE TSOs an amendment to the SEE CCM, pursuant to Article 9(12) of CACM Regulation. The request was sent to the SEE TSO latest 25 June 2018.

All SEE TSOs should have submitted the amended SEE CCM within two months following the requirement from the SEE NRAs as set out in Article 9(12) of the CACM. The amended SEE CCM was received by the last SEE NRA on 27 August 2018. The SEE NRAs have decided on the amended SEE CCM within two months following the submission, as set in article 9(12) of CACM.

SEE NRAs reached a unanimous agreement, at the SEE CCR Energy Regulators' Regional forum organised on 24 October 2018, to request to the SEE TSOs a second amendment to the SEE CCM, pursuant to Article 9(12) of CACM Regulation. The request was sent to the SEE TSO latest 26 October 2018.

¹ The public consultation is available on the ENTSO-e website: https://consultations.entsoe.eu/markets/see-ccr-tsos-proposal-of-ccm/consult_view/

SEE TSOs should have submitted the 2nd amended SEE CCM within two months following the requirement from the SEE NRAs as set out in Article 9(12) of the CACM Regulation. The amended SEE CCM was received by the last SEE NRA on 07 February 2019.

Article 9 (12) of CACM Regulation requires SEE NRAs to consult and closely cooperate and coordinate with each other in order to reach an agreement, and make decisions within two months following receipt of submissions of the last Regulatory Authority concerned. A decision is therefore required by each Regulatory Authority pursuant to Article 9(12) of CACM Regulation.

III. The SEE NRAs position

All SEE NRAs acknowledge the efforts made by SEE TSOs to incorporate in their 2nd amended SEE CCM all the suggestions made and clarifications requested by SEE NRAs in their 2nd request for amendment of 24 October 2018 and during the subsequent shadow opinion sent by SEE NRAs to the SEE TSOs on the draft for the 2nd amended version of the SEE CCM, on 14 January 2019.

Apart from numerous agreed smaller changes, the 2nd SEE CCM proposal now appropriately reflects the following main amendments agreed by SEE NRAs:

- An appropriate explanation for using the CNTC approach in SEE CCR was given;
- The CCM shall not affect TSOs' right to delegate their task in accordance with the Article 81 of the CACM Regulation. However, the delegating TSO shall remain responsible for ensuring compliance with the obligations under the CACM Regulation;
- The SEE CCM now better details the methodologies for the reliability margin, the operational security limits, contingencies and allocation constraints (the SEE CCM does not take into consideration the allocation constraints anymore), the generation shift keys, the remedial actions, the cross-zonal capacity validation;
- The SEE CCM explanatory note now includes a logical diagram for the capacity calculation process;
- The rules for avoiding undue discrimination between internal and cross-zonal exchanges have been significantly improved, and the SEE TSOs have taken into consideration the ACER Recommendation No. 02/2016 of 11 November 2016. The SEE TSOs shall monitor only the elements from the initial list of critical network elements and contingencies (CNECs) significantly impacted by cross-zonal power exchange. The capacity calculation calculator shall calculate the sensitivity factors for selecting CNECs that are significantly impacted by cross-zonal power exchange. Mid-Term and long-term measures are given;
- For the review process, updates and publication of data, more details were provided (e.g. when the review is taking place; the timeline of the parallel run analysis), so now the treatment of transparency and communication to stakeholders is much clearer. Furthermore, SEE CCM now provides an implementation plan. The milestones are presented and the explanatory note provides the interdependencies. There are provisions on the parallel run analysis. The up-coming implementation process, especially the parallel runs, will give the SEE NRAs and market players and SEE TSOs respectively valuable knowledge on how the methodology will actually work in practice and how it might be developed and improved through future amendments pursuant to article 9 (13) of CACM Regulation. The 2nd SEE CCM and the explanatory note now includes provisions regarding the review process, updates, publication of data, implementation plan, milestones, explanation on the interdependencies, the parallel run analysis;
- The SEE TSOs included a dedicated article regarding the implementation monitoring of the methodology by the SEE NRAs, including reporting to the SEE NRAs and provisions on the confidentiality of data. The SEE CCM and the explanatory note now includes concrete milestones, provisions regarding the internal and external parallel run, giving now to the market players valuable knowledge on how the methodology will actually work in practice and how it might be developed and improved through future amendments pursuant to article 9 (13) of CACM Regulation.

Finally, the 2nd amendment of the SEE CCM proposal exhibits more clarity and accurateness by improving the quality of the content, structure, wording and consistency throughout the document. The 2nd amendment of the SEE CCM proposal also better specifies, in its „whereas” section, the purpose and achievements of SEE CCM as well as its impact on the objectives of the CACM Regulation.

SEE NRAs request the SEE TSOs to keep the SEE NRAs updated about the implementation phase. Once more details are available, the SEE CCM shall be subject to a further amendment. Such an amendment shall be initiated by SEE TSOs following Art. 9(13) of CACM Regulation, once the above mentioned details are available.

IV. Conclusions

SEE NRAs have assessed, consulted and closely cooperated and coordinated to reach an agreement that the 2nd amended SEE CCM meets the requirements of the CACM Regulation and that they approve the SEE CCM submitted by SEE TSOs pursuant to Articles 20 & 21 of CACM Regulation.

SEE NRAs must make their national decisions, on the basis of this agreement, within two months after the receipt of the 2nd amended proposal by the last regulatory authority, pursuant to Article 9(12) of CACM Regulation.

Following national decisions taken by each SEE NRA, SEE TSOs are required to publish the 2nd amended SEE CCM on their webpage in line with article 9 (14) of CACM Regulation, and must meet the implementation deadlines required by Article 14 of the SEE CCM.