

To South-East Europe CCR TSOs

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Athens, 08 June 2018

**Subject: South-East Europe CCR TSOs proposal on common capacity calculation methodology for the day-ahead and intraday market timeframe in accordance with Article 21 of the Commission Regulation (EU) 2015/1222 of 24 July 2015**

Dear Sirs,

I write on behalf of the Regulatory Authorities of South-East Europe Capacity Calculation Region (SEE CCR), regarding the SEE CCR Transmission System Operators (SEE CCR TSOs) proposal on common capacity calculation methodology for the day-ahead and intraday market timeframe for SEE CCR in accordance with Article 21 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management (Regulation 2015/1222).

The SEE CCR TSOs submitted the proposal on common capacity calculation methodology for the day-ahead and intraday market timeframe for SEE CCR in accordance with Article 20(2) of Regulation 2015/1222; this was received by the last Regulatory Authority of the SEE CCR on 19 January 2018. The Regulatory Authorities of SEE CCR reached a unanimous agreement to request to the SEE CCR TSOs an amendment to the proposal on common capacity calculation methodology for the day-ahead and intraday market timeframe for SEE CCR, within the six months' deadline pursuant to Article 9(12) of the Regulation 2015/1222. In particular, the Regulatory Authorities of SEE CCR request the SEE CCR TSOs to amend a number of issues in the proposal, as addressed in the attached common position paper unanimously agreed by the Regulatory Authorities of SEE CCR.

Therefore, this agreement shall provide evidence that a decision on the above mentioned proposal does not, at this stage, need to be adopted by ACER pursuant to Article 9(11) of the Regulation 2015/1222. It is intended to constitute the basis on which SEE CCR Regulatory Authorities will each subsequently make national decisions pursuant to Article 9(12) of Regulation 2015/1222 to request an amendment of the proposal.

Yours sincerely,

Dr. Nikolaos G. Boulaxis  
President of RAE

Attachment: Position paper of SEE CCR Regulatory Authorities on a request for amendment to the SEE CCR TSOs proposal on common capacity calculation methodology for the day-ahead and intraday market timeframe for SEE CCR.

**REQUEST FOR AMENDMENT BY THE SEE CCR  
REGULATORY AUTHORITIES**

**OF**

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

**08 June 2018**

## I. Introduction and legal context

This document elaborates an agreement of the SEE CCR Regulatory Authorities (in the following: SEE NRAs), agreed on 08 June 2018 at SEE CCR Energy Regulators' Regional forum, on the SEE CCR TSOs' (in the following: SEE TSOs) proposal of common capacity calculation methodology for the day-ahead and intraday market timeframe (in the following: 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 (in the following: CACM).

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. It is intended to constitute the basis on which the SEE NRAs will each subsequently request an amendment to the SEE CCM pursuant to Article 9(12) of CACM.

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 CACM. 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 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. [...]

[...]

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 TSOs' 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 20 and Article 12 of CACM.<sup>1</sup> The final SEE CCM was received by the last Regulatory Authority of the SEE Capacity Calculation Region on 19 January 2018. The proposal includes proposed timescales for its implementation and a description of its expected impact on the objectives of CACM, in line with Article 9(9) of CACM.

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<sup>1</sup> The public consultation is available on the ENTSO-e website: [https://consultations.entsoe.eu/markets/see-ccr-tsos-proposal-of-ccm/consult\\_view/](https://consultations.entsoe.eu/markets/see-ccr-tsos-proposal-of-ccm/consult_view/)

Article 9(10) of CACM 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 is therefore required by each Regulatory Authority by 19 July 2018.

The SEE CCM is based on a Coordinated Net Transmission Capacity (in the following: CNTC) approach:

- a) during the DA and ID capacity calculation (CC) processes, the Total Transfer Capacity (TTC) for the south RO borders, the BG-RO border, the north Greek borders and the BG-GR borders shall be assessed in both directions: by using Alternative Current (AC) load flow algorithm in order to assess network security of the relevant Critical Network Elements and Contingencies; is based on merged two-days ahead CGMs for DA CC process and day-ahead or intraday CGMs for ID CC process; by applying modification of cross border-zonal exchanges according to Generation and Load Shift Keys (GLSK) files.
- b) the day-ahead capacity calculation process starts in D-2 and it is based on D-2 Common Grid Models; the intraday capacity calculation process is performed in the end of D-1 and during the day D, basing on D-1 or ID Common Grid Models;
- c) for a transitory period, that will start 1 year after the beginning of testing of the methodology, the reliability margin will be defined for each bidding zone border as a maximum value of different values and percentages of TTC; the TSOs will review once a year the reliability margins for each bidding zone border; after the transitory period, the TSOs will provide to NRAs a report with the final proposal for the reliability margin.;
- d) only network elements significantly influenced by cross-zonal power exchanges are included in the contingency and network constraints list; the selection of those shall be based on analysis updated at least once a year by the TSOs;
- e) allocation constraints could be identified corresponding to operating constraints out of SEE CCR;
- f) the GLSK will be developed in accordance with the ENTSO-E Generation and Load Shift Key Implementation Guide; general principles on their definition are provided;
- g) both preventive and curative remedial actions are defined;
- h) cross-zonal capacity computed by the coordinated capacity calculator is validated by each TSO: in particular a reduction may be asked; the final capacity value is the minimum value sent by each TSO during the validation process;
- i) in case the capacity calculation process is not able to produce a result, the TSOs validate the last coordinated cross-zonal capacities: in particular the last coordinated values relevant for the long term timeframe are used as a fallback for the day-ahead timeframe, while the last coordinated values relevant for the day-ahead timeframe are used as a fallback for the intraday timeframe;
- j) the capacity calculation methodology for the day-ahead market will be implemented no later than 1<sup>st</sup> January 2020, while the capacity calculation methodology for the intraday market will be implemented no later than 1<sup>st</sup> July 2020.

### **III. The SEE NRAs' position**

In general, in the SEE CCM all the references should be made to the SEE Capacity Calculation Region (CCR), as set according to Article 15 of CACM instead to the SEE Region.

As far the technical contents are concerned, SEE CCM shall deal with all the elements listed in Article 21 of CACM. In the SEE CCM, SEE TSOs indeed approach all these elements, but in some cases details are missing, while in other cases more transparency is welcomed.

General remarks on the content

- The SEE CCM does not contain descriptions of methodologies in its articles 6 (reliability margin methodology), 7 (methodologies for operational security limits, contingencies and allocation constraints), 8 (generation shift keys methodology but an implementation Guide for Generation and Load Shift Key developed by ENTSO-E), 9 (methodology for remedial actions in capacity calculation but remains to be defined individually by each TSO).
- The level of detail of the SEE CCM is insufficient. The proposal should have contained detailed, consistent and fully CACM compliant description of methodologies with clear, transparent and harmonised definitions and criteria.
- The SEE CCM does not detail the steps listed under Article 29(8) of the CACM.
- 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, as requested in article 21 (1)(b)(ii) of the CACM, are not covered in the SEE CCM. These rules are further to be applied by the coordinated capacity calculation as provided by article 29(7)(d) of the CACM. In case of discrimination between internal and cross-border flows, measures on how to resolve this discrimination in the long term shall be provided (eg. launch of the bidding zones review in accordance with article 32 of CACM). In its Recommendation No. 02/2016 of 11 November 2016, ACER established two high-level principles regarding the treatment of internal congestion and of loop flows on the interconnectors. The SEE CCM shall also include detailed explanation on the temporary nature of deviations from these principles.
- The requirements of article 26(4) and article 29(9) of CACM, regarding the impact of the decision taken in the SEE CCR on neighbouring CCRs, are not met in the SEE CCM.
- The SEE CCM does not include provisions regarding how the coordinated capacity calculator will be appointed (article 27 (2) of the CACM).
- For the review process, updates and publication of data, significant details are missing (e.g. when the review is taking place; the timeline of the parallel run analysis). Furthermore, article 14 lacks a sufficient implementation plan. There are no concrete milestones or explanation of interdependencies.

### On the CNTC approach

According to Article 20(7) of CACM, in order to apply the CNTC approach, the TSOs shall demonstrate that 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. Such demonstration should thus be included in the SEE CCM.

Article 21(1), letter b), of CACM foresees that the capacity calculation methodology shall include a detailed description of the capacity calculation approach with the relevant mathematical details. In addition, as CNTC approach is used, the rules for taking into account previously allocated cross-zonal capacity, rules on the adjustment of cross-zonal capacity due to remedial actions, 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 shall be included.

In the SEE CCM the description of the process for calculating the capacity is quite poor. The calculation of TTC value is not specified at all. This calculation should be clearly explained with respect to article 29(8) of CACM. Indeed, more details are given in the explanatory document (above all in figure 4 – TTC calculation sub-process), but the SEE NRAs deem it important that such details are included directly in the methodology. SEE CCM should thus be amended, reporting more details about the process.

Moreover, the methodology should include as input the reliability margin and not use it ex-post.

Finally, for the intraday capacity calculation time-frame, reasons for the chosen frequency of two years, at which capacity will be reassessed, shall be given as well as proper justification on the performance of the calculation in the end of D-1 and not earlier. The deadline for the TSOs to provide the inputs to the capacity calculator and what happens if the inputs are missing or incomplete, shall be provided.

### Interaction with Acer Recommendation No 02/2016

With Recommendation No 02/2016 issued on 11 November 2016, the Agency, in accordance with point 1.7 of Annex I to Regulation 714/2009, provides some high level principles to be taken into account while developing the capacity calculation methodologies pursuant to Article 20 of CACM. In particular, treatment of internal congestions should not lead in general to any limitations of cross-zonal exchanges; indeed a temporary limitation may be accepted, if needed to grant operational security and economically more efficient than other possible measures. Nonetheless limitations, if applied, should be discontinued by developing mid and long term measures such reconfiguration of bidding zones or new investments; only if limitations are deemed more efficient than any other available mid and long term measures, the TSOs may continue to use them.

A similar recommendation is also included directly in CACM: in particular Article 21(1), letter b), point ii), foresees the inclusion in the capacity calculation methodology of rules to avoid discrimination between internal and cross-zonal congestions to ensure compliance with point 1.7 of Annex I to Regulation 714/2009.

In SEE CCM rules to avoid discrimination between internal and cross-zonal exchanges are not explicitly addressed. Some clarifications about this point shall be included by SEE TSOs.

### Coordination with Intraday Cross-Zonal Gate Opening Time (IDCZGOT) Proposal

CACM defines the IDCZGOT as *"the point in time when cross-zonal capacity between bidding zones is released for a given market time unit and a given bidding zone border"*.

According to paragraph 52 of Decision 04/2018 of ACER on IDCZGT, it is stated that:

*"... In this framework, the IDCZGOT can, therefore, only be understood as a general rule for when TSOs have to release the available cross-zonal capacity to the market, whereas the rules on how much cross-zonal capacity TSOs have to offer and at which times during the intraday timeframe fall within the scope of the regional intraday capacity calculation methodology. In that respect, the TSOs' concerns related to the intraday capacity calculation, internal and cross-zonal congestion management and scheduling could, if properly justified, be taken into account by defining, within the intraday capacity calculation methodology, the amount of capacity being made available at different times during the intraday market timeframe."*

Therefore, the amount of capacity being made available at the IDCZGOT or at any time during the intraday market timeframe should be described within the intraday capacity calculation methodology as well as the justification of this availability.

### Common grid model

According to Article 29(8), letter a), of CACM, the coordinated capacity calculator adopting a CNTC approach shall use the common grid model built accordingly to Articles 17 and 28 by merging the individual grid models developed by each TSO. Coordinated capacity calculator should not merge individual CGMs from SEE. Instead it should use EU-wide CGM as established by the CGMM. There should be no regional CGMs used in capacity calculation.

Articles 11(3) and 12(3) of SEE CCM indeed refers to the above mentioned merging activity: these references, even if coherent with the common grid model methodology developed in accordance with Article 17 of CACM, are pleonastic and they may lead to misunderstandings (in particular one could argue that in SEE CCR a different common grid model might be used). To avoid any misinterpretations, SEE TSOs are asked to delete any references to the merging activity and to clarify that capacity calculation is based on the unique common grid model relevant for each timeframe.

## Reliability margin methodology

According to Article 22 of CACM, 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. Firstly, 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, i.e. establish a statistical analysis of the differences between predicted and observed power flows. Secondly, the reliability margin shall be calculated by deriving a value from the probability distribution, by defining the acceptable risk level.

In Article 6 of SEE CCM, the TSOs propose to compute the reliability margin pursuant to the above mentioned Article; for a transitory period, that will start 1 year after the beginning of testing of the methodology, the TSOs will define the reliability margin for each bidding zone border as a maximum value of different values and percentages of TTC; the TSOs will review once a year the reliability margins for each bidding zone border; after the transitory period, the TSOs will provide to NRAs a report with the final proposal for the reliability margin.

SEE NRAs are not satisfied with the path proposed by the SEE TSOs. Here are the main reasons:

- a) the methodology for determining the reliability margin for cross-zonal capacity is not specified; the description of the statistical model for computing the reliability margin shall be included in the SEE CCM since the very beginning, namely a probability distribution including input data, process and methodology.

For example, the principles for calculating the probability distribution of deviations between the expected power flows at the time of the time of the capacity calculation and realised power flows in real time are not specified; the SEE CCM only reiterates article 22(2)(a) and (b) provisions.

Furthermore, the procedure for deriving reliability margin from the probability distribution is not specified. Common harmonised principles for deriving the reliability margin from the probability distribution, are not set out.

Moreover, the uncertainties to be taken into account in the calculation, according with the article 22 (2) of the CACM, are not specified;

- b) the risk level, i.e. the probability threshold below which flow levels will not be considered shall be defined as well as its frequency of recalculation;
- c) the frequency of recalculation of the reliability margin shall be defined;
- d) the approach mentioned in Article 6 for a transitory period is not foreseen in CACM and no justification is provided for this Regulation deviation. The report mentioned in the SEE CCM, which will be sent 1 year after the beginning of testing the methodology, regarding the final proposal for the reliability margin, cannot be approved by the SEE NRAs because this deviates from article 22 of the CACM. In addition, there is no clear timeline to migrate from the transitory period to the permanent one;
- e) the abovementioned approach for the reliability methodology definition introduces a series of fixed but not specified enough values to be used as the reliability margin, still not constituting a methodology; while more details on these terms are provided in the explanatory note, their justification is broad;
- f) during the transitory period, regarding the D-2 reliability definition as the maximum of two values, one of which to be the long-term reliability margin, there should be a clarification on how the D-2 reliability margin could be higher than the long-term one;

- g) Article 6 shall clearly explicit the definition of monitored risks; covering “most of the unsecured situations based on preliminary analysis” is considered as broad and general.

### Operational security limits, contingencies and network constraints

The methodologies are not sufficiently detailed to guarantee the application of the ACER Recommendation No 02/2016.

According to article 7(1) of the SEE CCM, SEE TSOs shall only monitor the operational security limits and contingencies on network elements significantly influenced by cross-zonal power exchanges: the type of analysis to be conducted and the method to be used for determining contingencies or for selecting the critical network elements shall be given; an explicit threshold for the CNECs selection shall be given, to achieve a broad level of transparency and economic efficiency, the definition of critical network elements and criteria of their addition/removal and the description on how operational security limits and contingencies are selected should be more precise and be moved directly in Article 7, rather than in the explanatory note as well as the list of contingencies should be more precisely defined. The sensitivity threshold for CNECs selection should be set with economic efficiency and non-discrimination in mind. The list of contingencies shall be defined more precisely.

Moreover, regarding Article 7(4), there is a need for improvement as the SEE CCM seems open due to the possibility of considering allocation constraints, without sufficient detail about the context of their inclusion (“could be identified”). There should be a clarification on the reasons why operating constraints out of SEE CCR are considered, since the allocation constraints may be applied only among the bidding zone borders within a single CCR and not among the bidding zone borders belonging to different CCRs.

Finally, if SEE TSOs intend to apply allocation constraints, SEE NRAs are of the opinion that the methodology should specify the following:

- a) which allocation constraints shall be used on which bidding zone border or bidding zone and justification of this selection e.g. the reasons why they cannot be considered as maximum flows on critical network elements;
- b) description of impact on cross-zonal capacity allocation (e.g. with respect to the algorithm requirements);
- c) specification of operational security limits that the allocation constraints correspond to;
- d) description of the calculation methodology for the allocation constraints values;
- e) determination of the frequency of calculation.

### Generation shift keys methodology

Article 24 of CACM provides rules for the generation shift keys methodology. Also, article 2 point 12 defines the generation shift key term. If, also, load shift keys are going to be considered in SEE CCM, there should be a proper definition.

Article 8 of SEE CCM refers to the definition of the generation and load shift keys methodology. While containing the possible principles for a methodology to be applied at a later stage, it lacks any detail of it. A number of details are given in the explanatory note but without a proper justification about the different adopted solutions and that indicates allowing the SEE TSOs to freely apply different ones. The SEE CCM states that GSK will be developed in accordance with an ENTSO-E Generation and Load Shift Key Implementation Guide. The SEE CCM should include additional information on GSK determination while the methodology used to determine GSK should be harmonized at SEE CCR level. Furthermore, the way GSK will be monitored is missing.

SEE TSOs are asked to amend Article 8 of SEE CCM, moving some details about the determination of generation and load shift keys from the explanatory note to the capacity calculation methodology (or in a separate annex, referred to in Article 8) as well as considering using the generation and load shift keys methodology which leads to the best accuracy and reviewing this choice at least on a yearly basis.

### Methodology for remedial actions in capacity calculation

In Article 9 of SEE CCM only a list (not exhaustive) of possible remedial actions is given, but all the details about how they are taken into account in the capacity calculation process and how they will be used in order to maximize cross-zonal capacities are missing. Also, it does not describe TSO coordination. Remedial actions are listed but exclude redispatching and counter-trading. Indeed, articles 11(4) and 12(4) cite a Remedial Action coordination to be used in the capacity calculation process by the coordinated capacity calculator, but without any details, so it is not clear how it is ensured that the same set of remedial actions is available for all capacity calculation time-frames as required by article 25(6) of the CACM.

The TSOs shall provide in the methodology more details about the Remedial Action coordination process: if deemed more understandable, the description can be included in a separate Annex, properly referred to in the methodology.

Article 25(5) of CACM requires that each TSOs shall take into account remedial actions without costs in capacity calculation. The TSOs did not clarify whether costly remedial actions are taken into account or not. Article 9 does not foresee the possibility to use both costly and not costly remedial actions and their differentiation is not mentioned. There should be a description of the decision process to use remedial actions or not and in particular the use of costly remedial actions should be driven by a cost-benefit analysis.

Finally, the SEE CCM does not specify the determination of the common list of remedial actions for capacity calculation taking into account that remedial actions in a bidding zone with borders in several CCRs can only be assigned to one CCR. The frequency at which the common list of remedial actions are reassessed shall be specified.

### Cross-zonal capacity validation methodology

In Article 10(2) of SEE CCM, SEE TSOs propose the actions followed when one or more TSOs do not validate the cross-zonal capacity calculated. There should be a more detailed description and in particular, the SEE TSOs should amend the SEE CCM providing a list of reasons and criteria for capacity reduction as well as providing a clarification on what “overloading which couldn’t be observed from CGM” encompasses.

Moreover, as provided in Article 26(2) of CACM, the SEE TSOs shall include in the capacity calculation methodology a rule for splitting the correction of cross-zonal capacity between the different bidding zone borders and provide more details in the explanatory note.

### Regarding Data provision

According to Articles 46(1) and 58(1) of CACM the coordinated capacity calculator shall ensure that the NEMOs are provided with proper cross-zonal capacity values.

The SEE TSOs shall amend Articles 11 and 12 of SEE CCM in order to make them coherent with the above mentioned CACM provisions; the coordinated capacity calculator shall provide SEE TSOs with the final validated values.

There should be, also, a clarification on how the transparency and the communication to stakeholders are treated.

## Fallback procedures

Articles 13(1) and 13(3) refer to the last coordinated cross-zonal capacities to be used as fallback values in case the capacity calculation process is not able to produce any results. SEE TSOs are asked to clarify what they mean with the term last coordinated cross zonal capacities.

## Implementation timeline

Article 14(4) foresees the possibility to modify the implementation deadlines in case the testing period does not meet the necessary requirements. The entire Article 14(4) shall be deleted. It shall be clarified, and in particular mention explicitly the latest point in time when the methodology will be implemented. In case SEE TSOs encounter some delays in the implementation, they shall submit an amended SEE CCM according to Article 9(13) of CACM.

## Conclusions

The SEE NRAs have consulted and closely cooperated and coordinated to reach agreement that **they request an amendment to the SEE CCM submitted by SEE TSOs pursuant to Article 20 of CACM**. The amended SEE CCM should take into account the SEE NRAs position stated above, and should be submitted by TSOs no later than 2 months after the last national decision to request an amendment has been made, in accordance with Article 9(12) of CACM.

The SEE NRAs must make their national decisions to request an amendment to the capacity calculation methodology, on the basis of this agreement, by 19 July 2018.

## List of Action points:

- Refer to SEE Capacity Calculation Region (CCR), as set according to Article 15 of CACM, instead to SEE Region;
- Include the demonstration justifying the adoption of CNTC approach;
- Include more details about the capacity calculation process, amending SEE CCM accordingly, including rules for calculating cross-zonal capacity;
- Provide the reasons for the chosen frequency of two years, at which intraday capacity will be reassessed as well as proper justification on the performance of the calculation in the end of D-1 and not earlier;
- Provide the deadline for the TSOs to provide the inputs to the capacity calculator and what happens if the inputs are missing or incomplete;
- Include the amount of capacity being made available at the IDCZGOT or at any time during the intraday market timeframe as well as the justification of this availability;
- Refer to the reliability margin as input to the methodology, not be used ex-post;
- Include clarifications on transparency and communication to stakeholders treatment;
- Include clarifications how to avoid discrimination between internal and cross-zonal exchanges and include detailed explanation on the temporary nature of deviations from the principles of ACER's Recommendation No 02/2016;
- Delete any references to the merging of individual grid models and clarify that the capacity calculation is based on the unique common grid model built in accordance with Articles 17 and 28 of CACM;
- Include the statistical model to compute reliability margin, amending Article 6 accordingly;
- Define the risk level and its recalculation frequency;
- Define how often the reliability margin is recalculated;
- Justify properly the existence of a transitory period that is not foreseen in CACM instead of a permanent one and the series of fixed values to be used as the reliability margin;
- Clarify how the D-2 reliability margin could be higher than the long-term one;



- Define the monitored risks;
- Include a specific threshold to identify network elements to be monitored, define the critical network elements and their addition/removal criteria as well as describe how operational security limits and contingencies are selected;
- Define precisely the list of contingencies;
- Clarify the possibility of considering allocation constraints, by referring to the details of their inclusion;
- Clarify the reasons why operating constraints out of SEE CCR are considered;
- Specify the reasons why allocation constraints shall be used and justify their selection, describe their impact on cross-zonal capacity allocation, specify the relevant operational security limits, describe the methodology for calculating their values and determine the frequency of their calculation (if SEE TSOs intend to apply allocation constraints);
- Provide more details on the generation and load shift keys methodology and justify the different adopted solutions;
- Move some details about generation and load shift keys from the explanatory note to the methodology;
- Clarify if the SEE TSOs could freely apply differing principles;
- Consider reviewing the generation and load shift keys methodology at least on a yearly basis and provide how the monitoring will be applied;
- Include a description of the Remedial action coordination;
- Include the possibility of using both costly and non-costly remedial actions;
- Describe the decision process to use remedial actions; the use of costly remedial actions should be driven by a cost-benefit analysis;
- Specify the frequency at which the remedial actions are reassessed;
- Provide a more detailed description on non-validation of the calculated cross-zonal capacity in Article 10(2), the reasons and criteria for capacity reduction as well as clarify what overloading which couldn't be observed from CGM refers to;
- Include a rule for splitting the correction of cross-zonal capacity between different bidding zone borders;
- Amend Articles 11 and 12 of SEE CCM to make them coherent with Articles 46(1) and 58(1) of CACM about data provision;
- Define the last coordinated cross-zonal capacities in Articles 13(1) and 13(3);
- Delete Article 14(4).