

**REQUEST FOR AMENDMENT BY THE GREECE-ITALY  
REGULATORY AUTHORITIES**

**OF**

**THE GREECE-ITALY TSOs PROPOSAL OF COMMON  
CAPACITY CALCULATION METHODOLOGY FOR THE  
DAY-AHEAD AND INTRADAY TIMEFRAME IN  
ACCORDANCE WITH ARTICLE 21 OF COMMISSION  
REGULATION 2015/1222 OF 24 JULY 2015  
ESTABLISHING A GUIDELINE ON CAPACITY  
ALLOCATION AND CONGESTION MANAGEMENT**

**12 March 2018**

## I. Introduction and legal context

This document elaborates an agreement of the Greece-Italy Regulatory Authorities (in the following: GRIT NRAs), agreed on 12 March 2018 at Greece-Italy Energy Regional Regulators' forum, on the Greece-Italy TSO proposal of common capacity calculation methodology for the day-ahead and intraday timeframe (in the following: GRIT 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 GRIT NRAs shall provide evidence that a decision on the GRIT 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 GRIT NRAs will each subsequently request an amendment to the GRIT CCM pursuant to Article 9(12) of CACM.

The legal provisions that lie at the basis of the GRIT CCM, and this GRIT 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 Greece-Italy TSOs proposal

The GRIT CCM was consulted by the Greece-Italy TSOs through ENTSO-E for one month from (8 August 2017 to 9 September 2017, in line with Article 20 and Article 12 of CACM.<sup>1</sup> The final GRIT CCM was received by the last Regulatory Authority of the Greece-Italy Capacity Calculation Region on 21 September 2017. 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.

Article 9(10) of CACM requires GRIT 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 21 March 2018.

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

- a) the cross-zonal capacity is computed by increasing the generation on the export side and by decreasing the generation on the import side; increase and decrease in each node are set according to the Generation Shift Keys (in the following: GSK), based on merit order list for the Italian bidding zones and proportional to the remaining available capacity in each base case for the Greek bidding zone; the step at each iteration is selected by the mean of a dichotomy process;
- 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, basing on D-1 Common Grid Models;
- c) the reliability margin is not considered at this stage; a specific study will be submitted no later than 12 months after the GRIT CCM approval, reporting the reliability margins computed for each bidding zone border, along with the impact of such margins on the day-ahead market and on the costs to relieve congestions;
- d) only network elements significantly influenced by cross-zonal power exchanges are included in the contingency and network constraints list;
- e) a dynamic assessment is run by the Italian TSO, Terna, at least once a year, to detect further possible limitations to be applied on the Italian internal bidding zone borders;
- f) both preventive and curative remedial actions are defined; costly curative remedial actions are allowed, in accordance with national legislation;
- g) 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;
- h) the TSOs are responsible to provide NEMOs with the capacity values relevant for day-ahead and intraday markets;
- 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 S2-2019, while the capacity calculation methodology for the intraday market will be implemented no later than S2-2020.

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<sup>1</sup> The public consultation is available on the ENTSO-e website:  
<https://consultations.entsoe.eu/markets/capacity-calculation-methodology-proposal-grit-ccr/>



### III. The Greece-Italy Regulatory Authorities position

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

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

#### 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 GRIT 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 the GRIT CCM proposal the description is quite poor. Indeed, more details are given in the explanatory document (above all in figures 4 and 5), but the GRIT NRAs deem it important that such details are included directly in the methodology. GRIT CCM proposal should thus be amended, reporting more details about the process, as, for example, but without limitation to:

- a) a proper reference to the nominal capacity of HVDC for bidding zone borders based on such interconnections (Italy Brindisi – Greece, Italy Middle North – Corsica - Sardinia and Italy Middle South – Sardinia);
- b) a proper reference to the load flow algorithm (mathematical equations are not required) for the capacity computation process for all the AC bidding zone borders (all the Italian internal bidding zone borders other those cited above).
- c) the description of the iterative process adopted for the TTC calculation: figures 4 and 5 already reported in the explanatory note are a good starting point, but more details about the identification of Secure TTC and Unsecure TTC (figure 4) and some comments about the reasons underlining the dichotomy process (figure 5) shall be given;

#### Interaction with Acer Recommendation 02/2016

With Recommendation 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 GRIT CCM rules to avoid discrimination between internal and cross-zonal exchanges are not explicitly addressed. GRIT NRAs consider that the specific configuration of bidding zones in GRIT CCR might able per se to reduce all the discriminations and to maximize the capacity given to the market, nonetheless some clarifications about this point shall be included by GRIT TSOs at least in the explanatory document.

## 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.

Articles 11(3) and 12(3) of GRIT 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 GRIT CCR a different common grid model might be used). To avoid any misinterpretations, GRIT 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

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. 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.

In Article 6 of GRIT CCM, the TSOs propose to compute the reliability margin pursuant to the above mentioned Article no later than 6 months after the approval of GRIT CMM by GRIT NRAs; a study containing the reliability margin computed as stated above and their impact on day-ahead market and on costs to relieve congestions will be submitted no later than 12 months after the approval; eventually the decision whether taking into account or not the reliability margin in the capacity calculation will be taken by GRIT NRAs. In the meanwhile, GRIT TSOs don't apply any reliability margin, assuming capacity values equal to the TTC ones.

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

- a) the description of the statistical model for computing the reliability margin shall be included in the GRIT CCM since the very beginning, even if this model is applied only at a second stage, when all relevant data are available;
- b) in the GRIT CCM the frequency of recalculation of the reliability margin shall be defined
- c) the decision to apply a reliability margin is a responsibility of the TSOs: Article 6 shall be amended deleting any reference to a GRIT NRAs decision about this topic;
- d) Article 6 shall clearly explicit that no reliability margin is applied at this stage, with a duly justification on this decision, and that, in case the TSOs change this decision in the future according to the results of the reliability margin study, the GRIT CMM proposal will be amended accordingly.

## Operational security limits, contingencies and network constraints

According to article 7(1) of the GRIT CCM, GRIT TSOs shall only monitor the operational security limits and contingencies on network elements significantly influenced by cross-zonal power exchanges: an explicit threshold shall be given, to achieve a broad level of transparency as well as the description on how operational security limits and contingencies are selected apart from taking into account the PTDF and Voltage Sensitivity Ratios

A dynamic assessment to detect possible limitations for Italian internal bidding zone borders is run by Terna once a year (Article 7(4) of GRIT CCM): GRIT NRAs understand that such a computation is not feasible on a short term basis (due to its complexity), therefore they welcome the yearly frequency proposed by the GRIT TSOs. Nonetheless, according to the explanatory note, dynamic limitations seem to be applied directly by Terna during the validation process: in other words, the coordinated capacity calculator computes capacity values without taking into account any limitations, while possible reduction may be requested by Terna at a second stage. The GRIT NRAs are not fully satisfied with this approach: GRIT TSOs are requested to justify this choice and to clarify while they do not intend to consider dynamic limitations as an additional constraint pursuant to Article 23(3), letter a), of CACM to be taken into account by the coordinated capacity calculator.

Moreover, the definition about permanent and temporary current/power limit given in the explanatory note shall be moved directly in Article 7 of GRIT CCM methodology (or in a separate annex, with proper reference in Article 7).

Finally, the GRIT TSOs shall justify why they don't intend to perform a dynamic assessment to detect possible additional limitations for the Greek bidding zone.

### Generation shift keys

A number of details, along with proper justifications about the different adopted solutions (merit order in Italy and proportional to remaining available capacity in Greece), are given in the explanatory note.

For sake of transparency GRIT TSOs are asked to amend Article 8 of GRIT 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).

### Remedial actions

In Article 9 of GRIT 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 are missing. Indeed, articles 11(4) and 12(4) cite a Remedial Action optimization to be used in the capacity calculation process by the coordinated capacity calculator, but without any details.

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

Article 9 foresees also the possibility to use both costly and not costly curative remedial actions. For Italian bidding zones in general costly curative remedial actions are activated within the Integrated Scheduling Process (so called MSD ex-ante session). GRIT TSOs are thus invited to include in the explanatory note a description of the interaction between the actions activated in the MSD ex-ante session and the capacity calculation process: in particular a comparison between the costs of measures directly activated in the MSD and the costs associated to a capacity reduction relevant for the day-ahead market is welcomed.

Finally, the frequency at which the remedial actions are reassessed shall be specified.

### Validation process

Article 10(3) of GRIT CCM refers to extreme scenarios: GRIT TSOs are asked to define the extreme scenarios, by amending this article accordingly.

### 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.

Articles 11(7) and 12(7) of GRIT CCM foresees, instead, that GRIT TSOs shall ensure that the NEMOs are provided with the cross-zonal capacity values; the coordinated capacity calculator shall provide GRIT TSOs with the final validated values.

The GRIT TSOs shall amend Articles 11(7) and 12(7) of GRIT CCM in order to make them coherent with the above mentioned CACM provisions.

According to the explanatory note, it seems that intraday cross-zonal capacity values are computed in D-1 and they are not updated in D, i.e. that intraday capacity values are computed only once a day, The GRIT TSOs shall explicitly confirm this approach in the methodology. Moreover, they shall clarify whether they intend to update the capacity values more frequently in the future: if yes, the frequency of such recalculation should be proposed.

### Fallback procedures

Articles 13(1) and 13(3) refers 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. GRIT 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. In case GRIT TSOs encounters some delays in the implementation, they shall submit an amended proposal according to Article 9(13) of CACM.

### Conclusions

The GRIT NRAs have consulted and closely cooperated and coordinated to reach agreement that **they request an amendment to the GRIT CCM submitted by GRIT TSOs pursuant to Article 20 of CACM**. The amended proposal should take into account the GRIT 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 GRIT NRAs must make their national decisions to request an amendment to the capacity calculation methodology, on the basis of this agreement, by 21 March 2018.

### List of Action points:

- Refer to GRIT Capacity Calculation Region (CCR), as set according to Article 15 of CACM, instead to GRIT Region;
- Include the demonstration justifying the adoption of CNTC approach;
- Include more details about the capacity calculation process, amending GRIT CCM accordingly;
- Include clarifications how to avoid discrimination between internal and cross-zonal exchanges;
- 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;

- Amend article 6, by deleting any reference to GRIT NRAs decisions about reliability margins and duly justifying if no reliability margin is applied;
- Clarifying that in case a reliability margin is applied in the future, the GRIT CCM will be amended accordingly;
- Define how often the reliability margin is recalculated
- Include a specific threshold to identify network elements to be monitored, as well as describe how operational security limits and contingencies are selected apart from taking into account the PTDF and Voltage Sensitivity Ratios;
- Clarify how dynamic assessment is taken into account in the capacity calculation process and why it is considered only by Terna in the validation process and not as an additional constraint;
- Duly justified why no dynamic assessment to detect possible additional limitations is performed for the Greek bidding zone;
- Move the definition of permanent and temporary current/power limit from the explanatory note to the methodology;
- Move some details about generation and load shift keys from the explanatory note to the methodology;
- Include a description of the Remedial action optimization;
- Clarify the relation between the costly curative remedial actions activated in the Italian Integrated Scheduling Process and the costly curative remedial actions taken into account in the capacity calculation process;
- Specify the frequency at which the remedial actions are reassessed;
- Define extreme scenarios in Article 10(3)
- Amend Articles 11(7) and 12(7) of GRIT CCM to make them coherent with Articles 46(1) and 58(1) of CACM about data provision;
- Clarify the frequency of calculation of intraday capacity values;
- Define the last coordinated cross-zonal capacities in Articles 13(1) and 13(3);
- Delete Article 14(4).