
Greece-Italy 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

May 2020

All TSOs, taking into account the following:

Whereas

- (1) This document (hereafter referred to as “Greece-Italy common capacity calculation methodology”, or “GRIT common capacity calculation methodology”) including its annex, is a common proposal developed by all Transmission System Operators (hereafter referred to as “TSOs”) within the Greece-Italy Capacity Calculation Region (hereafter referred to as “GRIT CCR”) as defined in accordance with Article 15(1) of Regulation (EU) 2015/1222 on Capacity Allocation and Congestion Management (the “CACM Regulation”) CACM Regulation, on the common capacity calculation performed for the capacity allocation within the day-ahead and intraday market timeframes. This proposal is required by Article 20 (2) and developed in accordance with Article 21 of “CACM Regulation”.
- (2) This Coordinated Capacity Calculation proposal (hereafter referred to as the “CCC methodology Proposal”) takes into account the general principles and goals set “CACM Regulation” as well as those set in Regulation (EC) No 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereafter referred to as “Regulation (EC) 2019/943”).
- (3) The goal of the CACM Regulation is the coordination and harmonisation of capacity calculation and allocation in the day-ahead and intraday cross-border markets. To facilitate these aims and implement single day-ahead and intraday coupling, the TSOs in the Capacity Calculation Region shall calculate in a coordinated manner the available cross-border capacity.
- (4) Article 21 (1) of the CACM Regulation constitutes the legal basis for this proposal and defines several specific requirements that the CCC methodology Proposal should take into account:

“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) for the flow-based approach, a mathematical description of the calculation of power transfer distribution factors and of the calculation of available margins on critical network elements;*
 - (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) where the power flows on critical network elements are influenced by cross-zonal power exchanges in different capacity calculation regions, the rules for sharing the power flow capabilities of critical network elements among different capacity calculation regions in order to accommodate these flows.*
- (c) a methodology for the validation of cross-zonal capacity in accordance with Article 26.”*

- (5) Article 14 of the CACM Regulation, with reference to the day ahead timeframe, defines the following: “1. (...) TSOs shall calculate cross-zonal capacity for (...) (a) “day-ahead, for the day-ahead market” and “2. For the day-ahead market time-frame, individual values for cross-zonal capacity for each day-ahead market time unit shall be calculated.”, and “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”.
- (6) Article 14 of the CACM Regulation, with reference to the intraday ahead timeframe, defines the following: “1. (...) TSOs shall calculate cross-zonal capacity for (...) (b) intraday, for the intraday market;” and “3. 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”
- (7) Article 20 (1) of the CACM Regulation defines the approach to use in the common capacity calculation methodologies as “flow-based approach except where the requirements of paragraph 7 are met ” and (7) specifies that: “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.”

- (8) Article 20 (2) of the CACM Regulation defines the deadline to submit the common proposal based on the coordinated net transmission capacity approach for the TSOs from the GRIT CCR, as follows:
“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. (...)”
- (9) Article 2 (8) of the CACM Regulation defines the “*coordinated net transmission capacity approach*” as “*the capacity calculation method based on the principle of assessing and defining ex ante a maximum energy exchange between adjacent bidding zones*”.
- (10) In the context of this proposal, the definition of “*Coordinated Capacity Calculator*” is important and is defined in Article 2 (11) of the CACM Regulation as: “*the entity or entities with the task of calculating transmission capacity, at regional level or above*”.
- (11) Article 9 (9) of the CACM Regulation requires that the proposed timescale for the implementation and the expected impact of the CCC methodology Proposal on the objectives of the CACM Regulation is described. The impact is presented below point (16) of this Whereas Section.
- (12) Article 16(8) of the Regulation (EC) 2019/943 complements the principles of the CACM Regulation, with the introduction of a requirement for a minimum level of capacity to be offered to the market:
“Transmission system operators shall not limit the volume of interconnection capacity to be made available to market participants as a means of solving congestion inside their own bidding zone or as a means of managing flows resulting from transactions internal to bidding zones. Without prejudice to the application of the derogations under paragraphs 3 and 9 of this Article and to the application of Article 15(2), this paragraph shall be considered to be complied with where the following minimum levels of available capacity for cross-zonal trade are reached:
(a) *for borders using a coordinated net transmission capacity approach, the minimum capacity shall be 70 % of the transmission capacity respecting operational security limits after deduction of contingencies, as determined in accordance with the capacity allocation and congestion management guideline adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009;*
(b) *for borders using a flow-based approach, the minimum capacity shall be a margin set in the capacity calculation process as available for flows induced by cross-zonal exchange. The margin shall be 70 % of the capacity respecting operational security limits of internal and cross-zonal critical network elements, taking into account contingencies, as determined in accordance with the capacity allocation and congestion management guideline adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009. The total amount of 30 % can be used for the reliability margins, loop flows and internal flows on each critical network element.”*
- (13) Articles 15(1), 15(2) and 15(4), and Article 16(9) of the Regulation (EC) 2019/943 introduce possible temporary exemptions to comply with the minimum level of capacity set in the Article 16(8) of the Regulation (EC) 2019/943 through action plans and derogations.

- (14) Article 16(3) of the Regulation (EC) 2019/943 describes the capacity calculation process and attributes the role of coordinated capacity calculator to the regional coordination centres: “Regional coordination centres shall carry out coordinated capacity calculation in accordance with paragraphs 4 and 8 of this Article, as provided for in point (a) of Article 37(1) and in Article 42(1). Regional coordination centres shall calculate cross-zonal capacities respecting operational security limits using data from transmission system operators including data on the technical availability of remedial actions, not including load shedding. Where regional coordination centres conclude that those available remedial actions in the capacity calculation region or between capacity calculation regions are not sufficient to reach the linear trajectory pursuant to Article 15(2) or the minimum capacities provided for in paragraph 8 of this Article while respecting operational security limits, they may, as a measure of last resort, set out coordinated actions reducing the cross-zonal capacities accordingly. Transmission system operators may deviate from coordinated actions in respect of coordinated capacity calculation and coordinated security analysis only in accordance with Article 42(2). By 3 months after the entry into operation of the regional coordination centres pursuant to Article 35(2) of this Regulation and every three months thereafter, the regional coordination centres shall submit a report to the relevant regulatory authorities and to ACER on any reduction of capacity or deviation from coordinated actions pursuant to the second subparagraph and shall assess the incidences and make recommendations, if necessary, on how to avoid such deviations in the future. If ACER concludes that the prerequisites for a deviation pursuant to this paragraph are not fulfilled or are of a structural nature, ACER shall submit an opinion to the relevant regulatory authorities and to the Commission. The competent regulatory authorities shall take appropriate action against transmission system operators or regional coordination centres pursuant to Article 59 or 62 of Directive (EU) 2019/944 if the prerequisites for a deviation pursuant to this paragraph were not fulfilled. Deviations of a structural nature shall be addressed in an action plan referred to in Article 14(7) or in an update of an existing action plan.”
- (15) Article 16(4) of the Regulation (EC) 2019/943 gives a framework for the consideration of costly remedial actions in the capacity calculation: “The maximum level of capacity of the interconnections and the transmission networks affected by cross-border capacity shall be made available to market participants complying with the safety standards of secure network operation. Counter-trading and redispatch, including cross-border redispatch, shall be used to maximise available capacities to reach the minimum capacity provided for in paragraph 8. A coordinated and non-discriminatory process for cross-border remedial actions shall be applied to enable such maximisation, following the implementation of a redispatching and counter-trading cost-sharing methodology.”
- (16) The CCC methodology Proposal contributes to and does not in any way hinder the achievement of the objectives of Article 3 of the CACM Regulation:
- Article 3 (a) of the CACM Regulation aims at promoting effective competition in the generation, trading and supply of electricity. The CCC methodology Proposal serves the objective of promoting effective competition in the generation, trading and supply of electricity by defining a set of harmonized rules for capacity calculation and congestion management, which contributes to the effectiveness of

the single day-ahead and intraday coupling. Establishing common and coordinated processes for the capacity calculations within the day-ahead and intraday market timeframes contributes to achieve this objective.

- Article 3 (b) of the CACM Regulation aims at ensuring optimal use of the transmission infrastructure. The CCC methodology Proposal contributes to achieve the objective of ensuring optimal use of the transmission infrastructure by using last available inputs based on the best possible forecast of transmission systems at the time of each capacity calculation, updated in a timely manner.
- Article 3 (c) of the CACM Regulation aims at ensuring operational security. The CCC methodology Proposal contributes to achieve the objective of ensuring operational security by coordinating the capacity calculation with updated inputs for the day-ahead and intraday market timeframe at regional level to ensure its reliability.
- Article 3 (d) of the CACM Regulation aims at optimizing the calculation and allocation of cross- zonal capacity. By coordinating the timings for the delivery of inputs, calculation approach and validation requirements of the CCC between TSOs and the Coordinated Capacity Calculator, the CCC methodology proposal contributes to achieve the objective of optimizing the calculation and allocation of cross-zonal capacity.
- Article 3 (g) of the CACM Regulation aims at contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union. By using the best possible forecast of the transmission systems at the time of each capacity calculation within the GRIT CCR, the results of the coordinated capacity calculation contributes to determine the most limiting branches within this region, thus supporting TSOs for a more efficient development of the electricity transmission system.
- Article 3 (j) of the CACM Regulation aims at providing non-discriminatory access to cross-zonal capacity. This CCC methodology proposal contributes to achieve the objective of providing non-discriminatory access to cross-zonal capacity with the application of an adequate Critical Network Element and Contingencies (CNEC) identification process and the use of a proper Bidding Zones configuration.

(17) In conclusion, the CCC methodology Proposal contributes to the general objectives of the CACM Regulation and the Regulation (EC) 2019/943.

SUBMIT THE FOLLOWING CCC METHODOLOGY PROPOSAL TO THE NATIONAL REGULATORY AUTHORITIES OF THE GRIT REGION:

Article 1

Subject matter and scope

The common capacity calculation methodology as determined in this Coordinated Capacity Calculation (CCC) methodology Proposal is the common proposal of all TSOs of GRIT CCR in accordance with Article 21 of the CACM Regulation.

Article 2

Definitions and interpretation

1. For the purposes of the CCC methodology Proposal, the terms used shall have the meaning set forth in Article 2 of Regulation (EC) 543/2013, Article 2 of Regulation (EC) 2015/1222 and Article 2 of Regulation (EC) 2019/943.
2. In addition, the following definitions shall apply:
 - a. 'Terna' is the Italian Transmission System Operator;
 - b. 'ADMIE' is the Greek Transmission System Operator;
 - c. 'GR-IT Border' means bidding zone border between Greece and the connecting Italian bidding zone;
 - d. 'Internal Italian Borders' means a border between two bidding zones belonging to the Italian Control Area;
 - e. 'D-1' means the day before the day of delivery;
 - f. 'D-2' means two days before the day of delivery;
 - g. 'D' means the day of delivery;
 - h. 'D-2 Common Grid Model' means the common grid model built for each market time unit two days before the day of delivery for the day-ahead capacity calculation timeframe in accordance with Article 17 of the CACM Regulation;
 - i. 'D-1 Common Grid Model' means the common grid model built for each market time unit on the day before the day of delivery for the intraday capacity calculation timeframe in accordance with Article 17 of the CACM Regulation;
 - j. 'ID Common Grid Model' means the common grid model built for each relevant market time unit on during the day of delivery for the intraday capacity calculation timeframe in accordance with Article 17 of the CACM Regulation;
 - k. 'CNTC' means Coordinated Net Transfer Capacity approach for capacity calculation;
 - l. 'NTC' means the net transfer capacity that amounts to the maximum total exchange program (MW) for commercial purposes between adjacent bidding zones for each market time unit in a specific direction. NTC is obtained by subtracting the reliability margin to the TTC;
 - m. 'TTC' means the total transfer capacity that amounts to the maximum total exchange program (MW) complying with the operational security limits between adjacent bidding zones for each market time unit in a specific direction.
 - n. 'CSA methodology' means the Methodology for coordinating operational security analysis in

accordance with Article 75 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation.

3. In this CCC methodology Proposal, unless the context requires otherwise:
 - a. the singular indicates the plural and vice versa;
 - b. headings are inserted for convenience only and do not affect the interpretation of this proposal; and
 - c. any reference to legislation, regulations, directives, orders, instruments, codes or any other enactment shall include any modification, extension or re-enactment of it when in force.

Article 3

Application of this proposal

This proposal applies solely to the common capacity calculation methodology within the GRIT CCR. Common capacity calculation methodologies within others Capacity Calculation Regions or other timeframes are outside the scope of this proposal.

Article 4

Cross-zonal capacities for the day-ahead market

For the day-ahead market time-frame, CNTC approach is adopted in the GRIT CCR. This approach has been selected since a flow-based approach:

- is equivalent to a CNTC approach in a radial network like the GRIT CCR's one, where Bidding Zones are radially connected (or connected by HVDC links);
- implies higher transition costs for its implementation.

Individual values for cross-zonal capacity for each day-ahead market time unit shall be calculated adopting the TTC calculation process and D-2 grid models described in Annex 1 and respecting deadlines established in article 11 (DA CCC process).

Already allocated cross-zonal capacities do not affect cross-zonal capacity values for bidding zone borders belonging to the GRIT CCR and they are not considered in the framework of this Capacity Calculation Methodology.

Article 5

Cross-zonal capacities for the intraday market

For the intraday market time-frame, CNTC approach is adopted in the GRIT CCR. This approach has been selected since a flow-based approach:

- is equivalent to a CNTC approach in a radial network like the GRIT CCR's one, where Bidding Zones are radially connected (or connected by HVDC links);
- implies higher transition costs for its implementation.

Individual values for cross-zonal capacity for each remaining intraday market time unit shall be calculated adopting the TTC calculation process described in Annex 1 and performed:

- in D-1 adopting the TTC calculation process and D-1 grid models described in Annex 1 and according to the deadlines established in article 12 (ID CCC process 1);

- starting on D-1 and ending on day D adopting the TTC calculation process and D-1 grid models described in Annex 1 and according to the deadlines established in article 12 (ID CCC process 2).

Already allocated cross-zonal capacities do not affect cross-zonal capacity values for bidding zone borders belonging to the GRIT CCR and they are not considered in the framework of this Capacity Calculation Methodology.

Article 6

Reliability margin methodology

1. Reliability margin is equal to 0MW on each border of the GRIT CCR.
2. The cross-zonal capacity calculated by the Coordinated Capacity Calculator is equal to the maximum power exchange as computed according to the TTC calculation process described in the Annex 1.

Article 7

Methodologies for operational security limits, contingencies and allocation constraints

1. The TSOs of the GRIT CCR shall provide to the Coordinated Capacity Calculator the list of relevant contingencies, including the ordinary and exceptional contingencies, as defined according to the CSA methodology. These contingencies represent an input for, to be considered in the cross-zonal capacity calculation process according to the TTC calculation process described in the Annex 1.
2. Critical Network Element and Contingencies (CNECs) for each border of the GRIT CCR shall be defined according to the TTC calculation process described in the Annex 1.
3. The TSOs of the GRIT CCR shall define the operational security limits of their own grid elements according to the paragraph “2.4 Operational Security Limits (OSL)” described in the Annex 1.
4. In the TTC calculation process described in the Annex 1, the Coordinated Capacity Calculator of the GRIT CCR shall apply the operational security limits defined by the relevant TSOs of the GRIT CCR according to point 3.
5. Discriminations between internal and cross-zonal exchanges are avoided in the GRIT CCR capacity calculation methodology by the application of:
 - a proper Bidding Zones configuration;
 - a CNEC identification methodology described in the Annex 1.
6. The Coordinated Capacity Calculator shall set cross-zonal capacity values for each bidding zone border within GRIT CCR according to the TTC calculation process described in the Annex 1.
7. Concerning the internal Italian borders, the Italian TSO shall perform dynamic assessments in order to detect possible additional limitations to be applied (as upper limit) to TTC values. Where relevant, the Italian TSO shall perform these assessments at least once a year.
8. The Italian TSO shall inform Italian NRA about the results of the dynamic assessments mentioned at

point 7.

9. The Italian TSO shall inform in timely manner the Coordinated Capacity Calculator on any relevant upper limit to be applied in the capacity calculation process for the internal Italian borders according to the outcomes of the dynamic assessment.
10. The Coordinated Capacity Calculator on the GRIT CCR shall apply the upper limits provided by the Italian TSO according to point 9 in the capacity calculation process for the internal Italian borders according to the TTC calculation process described in the Annex 1.

Article 8

Generation and load shift keys methodology

1. The TSOs of GRIT CCR shall define the generation and load shift keys methodology in accordance with Article 24 of CACM Regulation.
2. For the Italian bidding zones, the relevant TSOs of GRIT CCR shall define generation and load shift keys based on a merit order list according to the TTC calculation process detailed in the Annex 1. The main reason for this choice is due to the fact that the Italian grid has a high level of RES generation installed in general and close to the GRIT link in particular. Those generators as well as the conventional generation are geographically located in different areas, then for different generation profiles we get different power flows in the grid elements and consequently different stress areas in the systems with potential impact in the NTC calculations.
3. For the Greek bidding zone, the relevant TSO of GRIT CCR shall define generation and load shift keys proportional to the remaining capacity available on generation in each base case according to the TTC calculation process detailed in the Annex 1.
4. GRIT TSOs shall make ex-post analysis of GSKs (including the testing period) and if considered necessary request to change them.

Article 9

Methodology for remedial actions in capacity calculation

1. The TSOs of GRIT CCR shall define the remedial actions in accordance with Article 25 of CACM Regulation and CSA methodology.
2. Each TSO of GRIT CCR shall define individually the remedial actions of its responsibility area to be used in the capacity calculation within GRIT CCR at least on yearly basis.
3. The TSOs of GRIT CCR shall coordinate, prior to the capacity calculation, the remedial actions that can be shared with each other to maximize the available cross-zonal capacities for the GR-IT border.
4. Terna shall identify, prior to the capacity calculation, the remedial actions that can be applied in order to maximize the available cross-zonal capacities for the Internal Italian borders.
5. Each TSO of GRIT CCR shall provide the list of available remedial actions, for each border of the

GRIT CCR and for each capacity calculation timeframe, to the Coordinated Capacity Calculator according to the List of Relevant Remedial Actions detailed in the Annex 1.

6. Each TSO of GRIT CCR shall ensure that remedial actions are taken into account in capacity calculation under the condition that the available remedial actions remaining after calculation are sufficient to ensure operational security.
7. In the cross-zonal capacity calculation process according to the TTC calculation process described in the Annex 1, the Coordinated Capacity Calculator of the GRIT CCR shall optimize cross-zonal capacity and adjust maximum power exchange applying the list of available remedial actions provided by the TSOs of the GRIT CCR according to point 6.
8. Each TSO of GRIT CCR shall inform the Coordinated Capacity Calculator in a timely manner on any change in its remedial actions within GRIT CCR to ensure an efficient capacity calculation.
9. The TSOs of GRIT CCR can use costly curative remedial actions where technically and economically relevant and in accordance with national regulation, for the capacity calculation within GRIT CCR.

Article 10

Cross-zonal capacity validation methodology

1. The TSOs of GRIT CCR shall validate the cross-zonal capacities calculated by the Coordinated Capacity Calculator of the GRIT CCR for the GR-IT border:
 - a) By 06:30 of D-1 for DA CCC process;
 - b) By 20:00 of D-1 for ID CCC process 1;
 - c) By 07:00 of D for ID CCC process 2.
2. Terna shall validate the cross-zonal capacities calculated by the Coordinated Capacity Calculator of the GRIT CCR for the Internal Italian borders:
 - a) By 07:00 of D-1 for DA CCC process;
 - b) By 20:00 of D-1 for ID CCC process 1;
 - c) By 07:00 of D for ID CCC process 2.
3. Each TSO of GRIT CCR shall send the results of its cross-zonal capacity validation to the Coordinated Capacity Calculator of the GRIT CCR and to the other TSOs of the GRIT CCR.
4. Upon request, for each border/direction and for the relevant market time unit, the Coordinated Capacity Calculator shall make available to the TSOs of GRIT CCR the common grid model where the final TTC value is simulated.
5. Where required, TSOs can validate the cross-zonal capacities calculated by performing security analysis with grid model provided in accordance with Article 10.3.
6. Where one or more TSOs of GRIT CCR do not validate the cross-zonal capacity calculated, the concerned TSO(s) shall provide the Coordinated Capacity Calculator with the updated amount of cross-zonal capacities for the border considered and the reasons for the reduction. The final cross-zonal capacity is the minimum value sent by the TSOs of GRIT CCR of the border considered.

7. The Coordinated Capacity Calculator of the GRIT CCR shall, every 3 months, send a detailed quarterly report on reductions of capacity occurring in the validation phase, including the location and amount of any reductions, and reasons for the reductions provided by the TSOs of the GRIT CCR according to point 6, to all regulatory authorities of the GRIT CCR.
8. All the regulatory authorities of GRIT CCR shall decide whether to publish all or part of this report.
9. The Coordinated Capacity Calculator of the GRIT CCR shall, every 3 months, send a detailed quarterly report on any reduction of capacity or deviation from coordinated actions pursuant to Article 16(3) of the Regulation (EC) 2019/943, and shall assess the incidences and make recommendations, if necessary, on how to avoid such deviations in the future, to all regulatory authorities of the GRIT CCR and to ACER.

Article 11

Day-ahead capacity calculation

1. In accordance with Article 8 of CACM Regulation, the TSOs of GRIT CCR shall calculate cross-zonal capacities for each bidding-zone border of GRIT CCR.
2. The TSOs of GRIT CCR shall provide the Coordinated Capacity Calculator with the last updated information on the transmission systems in a timely manner for the capacity calculation that is started in the end of D-2 (DA CCC process).
3. The capacity calculation process will take into account Remedial Action optimization according to the TTC calculation process detailed in the Annex 1.
4. The Coordinated Capacity Calculator shall define the values of TTC for each market time unit by 03:00 of D-1, according to the TTC calculation process detailed in the Annex 1. These values shall be provided to TSOs of GRIT CCR for validation.
5. In accordance with the Article 16(8) of the Regulation (EC) 2019/943, the Coordinated Capacity Calculator of GRIT CCR shall ensure that the computed TTC on each bidding zone border is never below a minimum level, except for the cases mentioned by Article 16(3) of Regulation (EC) 2019/943.
6. The minimum capacity pursuant to paragraph 5 shall be 70 % of the transmission capacity respecting operational security limits after deduction of contingencies, except for those for which a derogation has been granted or an action plan to address structural congestions has been set in accordance with the Articles 15 and 16 of the Regulation (EC) 2019/943. In case of such a derogation or action plan, the minimum capacity shall be defined by the decisions on derogations or action plans in accordance with the Regulation (EC) 2019/943. The TSOs of the GRIT CCR affected by such derogations or action plans shall inform all NRAs of the GRIT CCR about the values of minimum capacity applicable during the period covered by the derogation or the action plan.
7. The Coordinated Capacity Calculator shall cooperate with the neighbouring Coordinated Capacity Calculators when relevant. The TSOs of the GRIT CCR shall ensure such cooperation by exchanging and confirming information on interdependency with the relevant regional Coordinated Capacity Calculators, for the purposes of capacity calculation and validation.

8. The TSOs of the GRIT CCR shall provide information on interdependency to the Coordinated Capacity Calculators before capacity calculation. An assessment of the accuracy of this information and corrective measures shall be included in the biennial report referred to in Article 14.7.
9. The Coordinated Capacity Calculator of the GRIT CCR shall provide the TSOs of GRIT CCR with the validated NTCs after application of the reliability margin defined in accordance with Article 6 for each bidding-zone border of GRIT CCR.
10. In accordance with Article 46 of CACM regulation, the Coordinated Capacity Calculator and TSOs of the GRIT CCR shall ensure that validated cross-zonal capacity shall be provided to relevant NEMOs before the day-ahead firmness deadline as defined in accordance with Article 69 of CACM regulation.

Article 12

Intraday capacity calculation

1. In accordance with Article 14 of CACM Regulation, the TSOs of GRIT CCR shall calculate cross-zonal capacities for each bidding-zone border of GRIT CCR.
2. The TSOs of GRIT CCR shall provide the Coordinated Capacity Calculator with the last updated information on the transmission systems in a timely manner for the intraday capacity calculation processes (ID CCC process 1 and ID CCC process 2).
3. The capacity calculation process will take into account Remedial Action optimization according to the TTC calculation process detailed in the Annex 1.
4. The Coordinated Capacity Calculator shall perform the intraday capacity calculation by 18:00 of D-1, defining the values of TTC for each market time unit of the delivery day D according to the TTC calculation process detailed in the Annex 1. These values shall be provided to TSOs of GRIT CCR for validation.
5. The Coordinated Capacity Calculator shall perform a second intraday capacity calculation by 03:00 of D, defining the values of TTC for market time units starting from 12:00 pm of the delivery day D according to the TTC calculation process detailed in the Annex 1. These values shall be provided to TSOs of GRIT CCR for validation.
6. The Coordinated Capacity Calculator shall cooperate with the neighbouring Coordinated Capacity Calculators when relevant. The TSOs of the GRIT CCR shall ensure such cooperation by exchanging and confirming information on interdependency with the relevant regional Coordinated Capacity Calculators, for the purposes of capacity calculation and validation.
7. The TSOs of the GRIT CCR shall provide information on interdependency to the Coordinated Capacity Calculators before capacity calculation. An assessment of the accuracy of this information and corrective measures shall be included in the biennial report referred to in Article 14.7.
8. The Coordinated Capacity Calculator of the GRIT CCR shall provide the TSOs of GRIT CCR with the validated NTCs after application of the reliability margin defined in accordance with Article 6 for each bidding-zone border of GRIT CCR.

9. In accordance with Article 58 of CACM regulation, the Coordinated Capacity Calculator and TSOs of GRIT CCR shall ensure that validated cross-zonal capacity shall be provided to relevant NEMOs no later than 15 minutes before the intraday cross zonal gate opening time provided that until the Intraday Capacity Calculation process according to this methodology has been concluded, the Capacity for the Single Intraday Coupling is set between zero and the capacity calculated on the day-ahead timeframe.

Article 13 **Fallback procedures**

1. Prior to each capacity calculation started in D-2, the TSOs of GRIT CCR shall ensure the Coordinated Capacity Calculator is provided with the last coordinated cross-zonal capacities defined according to the long-term capacity calculation processes (eg. yearly, monthly) and the most updated information about planned and unplanned outages.
2. For the capacity calculation performed in D-2, where an incident occurs in the capacity calculation process and the Coordinated Capacity Calculator is unable to produce results within the allotted time for the calculation process, the TSOs of GRIT CCR shall validate the last coordinated cross-zonal capacities calculated within the long term timeframe and review it where relevant. After this validation step, the Coordinated Capacity Calculator or TSOs of GRIT CCR where applicable, shall provide the NEMOs of the GRIT CCR with a coordinated value
3. Prior to each capacity calculation performed in the end of D-1, the TSOs of GRIT CCR shall ensure the Coordinated Capacity Calculator is provided with the last coordinated cross-zonal capacities calculated within the day-ahead timeframe on each border of the GRIT CCR.
4. For the capacity calculation performed in the end of D-1, where an incident occurs in the capacity calculation process and the Coordinated Capacity Calculator is unable to produce results, the TSOs of GRIT CCR shall validate the last cross-zonal capacities calculated within GRIT CCR for the market time unit considered and review it where relevant. The Coordinated Capacity Calculator or TSOs of GRIT CCR where applicable, shall provide the NEMOs of GRIT CCR with a coordinated value.
5. Prior to each capacity calculation performed during the delivery day D, the TSOs of GRIT CCR shall ensure the Coordinated Capacity Calculator is provided with the last coordinated cross-zonal capacities calculated for each market time unit on each border of the GRIT CCR.
6. For the capacity calculation performed during the delivery day D, where an incident occurs in the capacity calculation process and the Coordinated Capacity Calculator is unable to produce results, the TSOs of GRIT CCR shall validate the last cross-zonal capacities calculated within GRIT CCR for the market time unit considered and review it where relevant. The Coordinated Capacity Calculator or TSOs of GRIT CCR where applicable, shall provide the NEMOs of GRIT CCR with a coordinated value.

Article 14 **Transparency**

In accordance with Article 3 of the CACM Regulation aiming at ensuring and enhancing the transparency and

reliability of information, at least the following data items shall be published in addition to the data items and definitions of Commission Regulation (EU) No 543/2013 on submission and publication of data in electricity markets:

1. The Coordinated Capacity Calculator of the GRIT CCR shall publish on its website or on JAO website:
 - i. by 07:30 (target) of D-1 for day-ahead timeframe, for the GR-IT Border:
 - a. the cross-zonal capacity values computed according to Article 11;
 - b. the list of CNECs or other security limits that are limiting the cross-zonal capacity values computed according to Article 11;
 - c. reductions of capacity occurring in the validation phase, including the location and amount of any reductions, the TSO of the GRIT CCR requesting the reduction and reasons for the reductions provided by the TSO itself.
 - ii. by 10:30 (target) of D-1 for day-ahead timeframe, for each Internal Italian Border:
 - a. the cross-zonal capacity values computed according to Article 11;
 - b. the list of CNECs or other security limits that are limiting the cross-zonal capacity values computed according to Article 11;
 - c. reductions of capacity occurring in the validation phase, including the location and amount of any reductions, the TSO of the GRIT CCR requesting the reduction and reasons for the reductions provided by the TSO itself.
 - iii. by 21:30 (target) of D-1 for intraday timeframe (ID CCC process 1) according, for each bidding-zone border of GRIT CCR:
 - a. the cross-zonal capacity values computed according to Article 12;
 - b. the list of CNECs or other security limits that are limiting the cross-zonal capacity values computed according to Article 12;
 - c. reductions of capacity occurring in the validation phase, including the location and amount of any reductions, the TSO of the GRIT CCR requesting the reduction and reasons for the reductions provided by the TSO itself.
 - iv. by 08:30 (target) of the delivery day D for the second intraday timeframe (ID CCC process 2) according, for each bidding-zone border of GRIT CCR:
 - a. the cross-zonal capacity values computed according to Article 12;
 - b. the list of CNECs or other security limits that are limiting the cross-zonal capacity values computed according to Article 12;
 - c. reductions of capacity occurring in the validation phase, including the location and amount of any reductions, the TSO of the GRIT CCR requesting the reduction and reasons for the reductions provided by the TSO itself.
2. The Coordinated Capacity Calculator of the GRIT CCR shall provide the TSOs of the GRIT CCR with a yearly report on the results of the DA CCC process:
 - Cross-border capacities made available to the market for each market time unit of the previous solar year;
 - the list of CNECs or other security limits that are limiting the cross-zonal capacity values for each market time unit of the previous solar year;
3. The Coordinated Capacity Calculator of the GRIT CCR shall provide the TSOs of the GRIT CCR a yearly report on the results of the ID CCC processes:
 - Cross-border capacities made available to the market for each market time unit of the previous

- solar year;
- the list of CNECs or other security limits that are limiting the cross-zonal capacity values for each market time unit of the previous solar year;
4. The TSOs GRIT CCR shall validate the reports referred to in points 2 and 3.
 5. The TSOs GRIT CCR shall send to the regulatory authorities of GRIT CCR the validated reports referred to in points 2 and 3.
 6. All the regulatory authorities of GRIT CCR shall decide whether to publish all or part of the reports referred to in point 5. In case the regulatory authorities of GRIT CCR decide to publish all or part of the reports, the Coordinated Capacity Calculator and the TSOs of the GRIT CCR shall organize a dedicated public workshop, if necessary using webinar solutions.
 7. GRIT TSOs will participate in the elaboration of the ENTSO-E biennial report on capacity calculation and allocation, which will be provided each two years and updated under request of the relevant authorities, according to Article 31 of CACM GL. For GRIT region, this report will contain the capacity calculation approach used, statistical indicators on reliability margins where they are applied, statistical indicators of cross-zonal capacity, quality indicators for the information used for the capacity calculation and, if appropriate, proposed measures to improve capacity calculation.
 8. The Agency shall decide whether to publish all or part of the report referred to in point 7.

Article 15

Publication and Implementation of the CCC methodology Proposal

1. The TSOs of GRIT CCR shall publish the CCC methodology Proposal without undue delay after relevant national regulatory authorities have approved the proposed CCC methodology or a decision has been taken by the Agency for the Cooperation of Energy Regulators in accordance with Article 9 (10), Article 9 (11) and 9 (12) of the CACM Regulation.
2. The TSOs of GRIT CCR shall test the approach from the present CCC methodology alongside the existing approach and involve market participants for at least six months before implementing the present CCC methodology proposal approach in accordance with Article 20 (8) of the CACM Regulation.
3. During the test period, the TSOs of GRIT CCR shall publish monthly reports on the results of the new approach.
4. During the test period, the TSOs of GRIT CCR shall organize at least two public workshops for discussing the outcomes of the new approach, if necessary using webinar solutions.
5. As the implementation of the reviewed Bidding Zone Configuration launched in 2018, compliant with CACM requirements and in accordance with Decisions 386/2018/R/eel and 103/2019/R/eel of the Italian National Regulatory Authority, is due to be completed by 1st January 2021:

- i. The TSOs of GRIT CCR shall implement the CCC methodology Proposal for the day-ahead capacity calculation started in D-2 no later than July 2021 (go live) (test period to be started in January 2021)
 - ii. The TSOs of GRIT CCR shall implement the CCC methodology Proposal for the intraday timeframe capacity calculation performed in the end of D-1 no later than January 2023 (go live) (test period to be started no later than July 2022)
6. The TSOs of GRIT CCR shall implement the CCC methodology Proposal for the intraday timeframe capacity calculation performed in the morning of the delivery day D no later than July 2021 (go live) (test period to be started no later than February 2021)

Article 16

Language

1. The reference language for this common capacity calculation Proposal shall be English.
2. For the avoidance of doubt, where TSOs need to translate this CCC methodology Proposal into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 9 (14) of the CACM Regulation and any version in another language, the relevant TSOs shall be obliged to dispel any inconsistencies by providing a revised translation of this CCC methodology Proposal to their relevant national regulatory authorities.