

**REQUEST FOR AMENDMENT BY THE ITALY NORTH
REGULATORY AUTHORITIES**

OF

**THE ITALY NORTH TSOs PROPOSALS FOR A D-2 AND
INTRADAY COMMON CAPACITY CALCULATION
METHODOLOGY IN ACCORDANCE WITH ARTICLE 21
OF COMMISSION REGULATION 2015/1222 OF 24 JULY
2015 ESTABLISHING A GUIDELINE ON CAPACITY
ALLOCATION AND CONGESTION MANAGEMENT**

18 May 2019

I. Introduction and legal context

This document elaborates an agreement of the Italy North Regulatory Authorities (in the following: IN NRAs), agreed on 18 May 2019 at Italy North Energy Regulators' Regional forum, on the Italy North TSO proposals for a D-2 and intraday common capacity calculation methodology (in the following: IN 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 IN NRAs shall provide evidence that a decision on the IN CCM does not, at this stage, need to be adopted by ACER pursuant to Article 9(12) of CACM. It is intended to constitute the basis on which the IN NRAs will each subsequently request an amendment to the IN CCM pursuant to Article 9(12) of CACM.

The legal provisions that lie at the basis of the IN CCM, and this IN 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. [...]
3. The TSOs from the capacity calculation region where Italy, as defined in point (c) of point 3.2 of Annex I to Regulation (EC) No 714/2009, is included, may extend the deadline without prejudice to the obligation in paragraph 1 for submitting the proposal for a common coordinated capacity calculation methodology using flow-based approach for the respective region pursuant to paragraph 2 up to six months after Switzerland joins the single day-ahead coupling. The proposal does not have to include bidding zone borders within Italy and between Italy and Greece.

[...]

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.*
4. *Each coordinated capacity calculator shall coordinate with the neighbouring coordinated capacity calculators during capacity calculation and validation.*
5. *Each coordinated capacity calculator shall, every three months, report all reductions made during the validation of cross-zonal capacity in accordance with paragraph 3 to all regulatory authorities of the capacity calculation region. This report shall include the location and amount of any reduction in cross-zonal capacity and shall give reasons for the reductions.*

[...]

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 Italy North TSOs proposals

The IN CCM is constituted by two separate proposals, one related to the D-2 common capacity calculation (relevant for day-ahead market) and the other to intraday capacity calculation. Both proposals were consulted by the IN Italy TSOs through ENTSO-E for one month from 23 February 2018 to 23 March 2018, in line with Article 20 and Article 12 of CACM¹. The final IN CCM proposals were received by the last Regulatory Authority of the Italy North Capacity Calculation Region on 24 May 2018. On 23 November 2018 IN NRAs agreed on a request for amendment: the last Regulatory Authority sent this request on 18 December 2018. The amended versions were submitted by the last Regulatory Authority on 18 March 2018.

Article 9(12) of CACM requires IN NRAs to consult and closely cooperate and coordinate with each other in order to reach an agreement and make decisions within two months following receipt of submissions of the last Regulatory Authority concerned. A decision is therefore required by 18 May 2018.

The IN 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), defined by each TSO;
- b) the D-2 process starts in D-2 and it is based on D-2 Common Grid Models; the intraday capacity calculation process is performed twice based on D-1 and Intraday Common Grid Models: a first computation is run in afternoon D-1 (for all the market time units) and a second computation in the early morning of D (related to the market time units 17-24);
- c) the reliability margin is computed on the basis of the statistical distribution of the unintended deviations; an appropriate risk level will be set by IN TSOs after one year from the approval of the IN CCM; in the meanwhile, a fixed predefined value will be used, based on the historical performances;
- d) only network elements significantly influenced by cross-zonal power exchanges are included in the contingency and network constraints list; a sensitivity threshold equal to 5% is assumed; the threshold will be reassessed during the implementation phase; for export capacity during the optimization of the remedial actions, also some further elements (so called monitored network elements – MNE) are monitored;
- e) specific allocation constraints are introduced to take into account the operational constraints related to the control of voltage profiles and dynamic stability of the Italian system; the relevant parameters used to set the maximum available import for the Italian system are published; allocation constraints will be implemented as a specific constraints within the day-ahead and intraday coupling algorithm (final solution); in the meanwhile an ex ante reduction of the capacity is accepted, but accompanied by the publication of the full capacity for sake of transparency;
- f) both preventive and curative remedial actions are defined; costly curative remedial actions are allowed, in accordance with national legislation; only SPS (Special Protection Schemes) will act in curative stage, after tripping of grid elements;
- g) for intraday computation cross-zonal capacity computed by the coordinated capacity calculator is forced to be within a predefined limiting band (so called selection phase); this phase will be abandoned no later than Q4 2019; no selection phase is included in the proposal for the day-ahead calculation;

¹ The public consultations are available on the ENTSO-e website:
<https://consultations.entsoe.eu/markets/italy-north-tso-proposal-id-ccm/> and
<https://consultations.entsoe.eu/markets/italy-north-tso-proposal-da-ccm/>

- h) the selected value is then validated by each TSO: in particular, there are some circumstances for which 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) capacity will be computed for both import and export direction; for export capacity the values will be referred to the borders where export from Italy is most likely to occur;
- k) the D-2 capacity calculation will be implemented in 12 months from the approval by IN NRAs; the TSOs intend to complement the D-2 CNTC methodology in force since February 2016, by adapting the current procedures and abandoning the selection phase currently in force
- l) the intraday capacity calculation is currently in the testing phase; go live is expected as soon the methodology reaches a good level of reliability and in any case no later than end 2019; only reliability margin and the CNEC selection are expected after one year from the approval; in the first step only the early morning D recalculation will be performed while the run in afternoon D-1 is postponed until the intraday market model (continuous trading coupled with implicit auctions) is effectively implemented;
- m) the export capacity is expected in September 2020 for both D-2 and intraday capacity calculations; in the meanwhile, IN TSOs will continue using the values assessed on a yearly basis;
- n) the publication of all the parameters relevant for the allocation constraints is expected in Q4 2020 for D-2 process and by no earlier than end 2019 for intraday process; the implementation of the allocation constraints within the market coupling algorithm is, instead, depending on the approval of the specific request for change to be submitted according to the algorithm management procedure;
- o) IN TSOs will submit a study with the evaluation to increase the 5% threshold used to identify critical network elements and contingencies;

The proposals include timescales for their implementation and a description of their expected impact on the objectives of CACM, in line with Article 9(9) of CACM.

Moreover, the proposal includes a timeline for the submission of a flow based approach, as envisaged by Article 20 of CACM Regulation.

III. The Italy North Regulatory Authorities position

The amended IN CCM proposals represent a significant step forward with respect to the original versions, nonetheless IN NRAs still have some concerns. In the following all these doubts are addressed in detail.

Discrimination between internal and cross-zonal exchanges

Despite being included in the first request for amendment, this aspect hasn't been fulfilled yet by IN TSOs. IN NRAs thus reiterate the same request that is reported below for sake of transparency.

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 particular, treatment of internal congestions should not lead in general to 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 as a reconfiguration of bidding zones or new investments; the TSOs may continue to use limitations only if they are deemed more efficient than any other available mid and long term measures.

In IN CCM rules to avoid discrimination between internal and cross-zonal exchanges are not explicitly addressed. IN NRAs consider that the specific configuration of bidding zones in the Italian System 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 IN TSOs at least in the explanatory note.

Allocation Constraints

Specific constraints are introduced to take into account the operational constraints related to the control of voltage profiles and dynamic stability of Italian system. Other specific constraints are also introduced to allow the so called “NTC smoothing” process described in parts “3.5 Methodology of bilateral splitting among borders” of the explanatory notes.

In the first request for amendment, IN NRAs requested IN TSOs:

- a) to investigate alternative solutions to the specific constraints for voltage and stability issues;
- b) to shift from computation constraints (i.e. ex-ante reduction of the cross-zonal capacity) to specific allocation constraints (i.e. specific constraints modelled within the market coupling algorithm);
- c) to provide some figures about the impact of the allocation constraints may have on the revenue adequacy for the compensation of long term transmission rights;
- d) to implement transparency measures, such as the publication of all the parameters relevant for understanding and forecasting the voltage and stability allocation constraints, of the maximum difference between the NTC for subsequent market time units for NTC smoothing and of the full capacity computed without taking into account any additional constraints.

IN NRAs appreciate the effort made by IN TSOs in fulfilling the above mentioned tasks, nonetheless there are some criticalities left.

Alternative solutions to the specific voltage and stability constraints

In the explanatory note, IN TSOs mention that *the non-application of such constraints (i.e. voltage and stability allocation constraints) on NTC calculation or Coupling algorithm would require the intraday or real-time activation of the emergency procedures in order to reduce import flows for activating internal generation able to provide ancillary service. This could endanger the overall system security, since it is not guaranteed that the required reduction could be accepted by neighbouring TSOs (due to lack of resources in the intra-day or real-time time frames).*

As understood by IN NRAs, IN TSOs seem to consider the intraday and real time activation of emergency procedures as the only feasible alternative solution to the voltage and stability allocation constraints. The description of such solution is nonetheless quite vague and no economical data (even as a first estimate) are given.

IN NRAs are not fully satisfied by what stated above. Intraday and real time emergency measures are indeed a possible curative solution (i.e. solution to be put in operation once the market results are known), but preventive solutions (e.g. measures that can be adopted before the day-ahead market gate closure time) should also be investigated.

IN NRAs deem it of utmost importance to perform a proper comparison between the overall cost associated to allocated constraints and the overall cost associated to both preventive and curative alternative solutions. Such quantitative analysis should, in particular:

- a) estimate the loss of social welfare due to the reduced cross-zonal capacity;
- b) estimate the loss in the long term transmission rights revenues due to the reduction periods included in the base products;
- c) estimate the cost of the alternative measures (both curative ones and preventive ones);
- d) estimate all the other relevant parameters the IN TSOs deem relevant for the assessment.

IN NRAs are nonetheless aware that such quantitative analysis requires a proper amount of time to be fulfilled.

Given what is stated above, IN NRAs ask IN TSOs:

- i) to include in the explanatory note a detailed description of both curative and preventive measures that could be adopted as an alternative to allocation constraints;
- ii) to clarify in the methodology that a proper study about allocation constraints (with a proper quantitative assessment as described above) shall be submitted by IN TSOs by 18 months after the implementation of the CCM², along with the proposal to phase out or to keep such constraints.

Transparency

IN NRAs are fine with the publication of the relevant parameters as set in Article 6(11) of both D-2 and intraday proposals, but they are concerned by the implementation timeline proposed by the TSOs. As understood by IN NRAs, the publication is foreseen for D-2 process only in Q4 2020 and for intraday process no earlier than end 2019.

IN NRAs consider of utmost importance that the relevant parameters and the unconstrained and constrained capacities (until computation constraint are used pending the implementation of proper allocation constraints within the market coupling) are published since the very beginning in order to provide market participants with transparent information about the impact of the allocation constraints.

For this reason, IN NRAs ask IN TSOs to review the implementation timeline of the capacity calculation in order to foresee the publication of the relevant parameters, constrained and unconstrained capacities:

- i) from 1 January 2020 for the D-2 process: this deadline shall be matched independently of the specific timeline that will be proposed for the implementation of the D-2 process by complementing the one in force since February 2016; in particular until a D-2 process fully compliant with IN CCM is implemented, IN TSOs shall publish the unconstrained capacity along with all the information set in Article 6(11) of the D-2 proposal and the resulting constrained capacity;
- ii) from 1 January 2020 for the intraday process: the deadline is set in order to be aligned with the D-2 process; IN TSOs are nonetheless invited to publish all the relevant information also in 2019, subject to the availability of such information and to the effective go-live of the intraday process.

CNEC selection

IN TSOs state that the threshold to identify CNECs will be reassessed during the implementation phase (see Article 6(2) of both D-2 and intraday proposals). The IN NRAs underline that any modification to the threshold shall lead to a resubmission of the proposal according to Article 9(13) of CACM. IN TSOs are required to clarify this point in the IN CCM. This also stands for the reassessment of the share of the MNE's thermal capacity provided to the remedial action optimizer.

² The deadline is the same as the one foreseen in Core region; see Article 7 of Core day ahead and intraday CCM as approved by ACER Decision 02/2019 for details.

IN NRAs invite IN TSOs to ensure the robustness of the above mentioned assessment by taking into account developments in European regulation and more particularly the 70% objective set in Article 16(8) of the recast electricity regulation.

Moreover, IN NRAs intend to monitor the effect of the proposed threshold approach on the capacity calculation process. For this reason, IN TSOs are asked to provide IN NRAs with a quarterly report with the following information:

- i) list of all the CNECs elements relevant in each timestamp adopted for capacity calculation, along with the associated sensitivity to cross-zonal exchanges;
- ii) list of all the CNECs limiting the capacity in each timestamp;
- iii) list of the cross-zonal interconnectors, if any, that are not considered in the capacity calculation process (along with the associated sensitivity to cross-zonal exchanges).

The first report shall be submitted by 10 working days after the end of the quarter when the go-live of the export capacity occurs; the subsequent releases shall be submitted by 10 working days after the end of each quarter.

MNE concept

For export capacity IN TSOs intend to monitor the flow on further network elements (MNEs) that, despite not being included in the CNEC set, are significantly affected by the specific remedial actions that may be implemented to grant the export flows.

As understood by IN NRAs MNEs and CNECs have the different scopes:

- a) CNECs are elements that cannot be congested at any step of the capacity calculation process; CNEC are thus not congested at the beginning of the process; during the process, instead, if a CNEC becomes overloaded, the capacity calculator shall solve the congestion, by reducing the capacity or by applying specific remedial actions;
- b) MNEs are elements monitored during the remedial actions optimizations; at any step of the process the capacity calculator cannot select any remedial actions that ends up in overloading a MNE (except the case when such MNE was already congested before); including them in the CNEC set might have a detrimental effect on the calculated capacity; in fact, no overloads would be allowed on MNEs (as represented as CNECs) which could lead to the rejection of a set of remedial actions with a potential reduction of the resulting cross zonal capacity.

IN NRAs are concerned that the MNE concept may limit the NTC domain: a specific remedial action, in fact, might be discarded (even if beneficial to the capacity) because it creates an overload on a specific MNE. On the contrary IN NRAs are aware that potential overloads on the MNEs induced by the allocation of a high level of cross-zonal capacity should be solved by subsequent coordinated process, as for example countertrading and redispatching: this would induce potentially significant costs.

Given what is stated above, IN NRAs deem of utmost importance to assess the usage of the MNE concept against the potential loss of social welfare due to the reduction of the cross-zonal capacity and the costs that should be borne in case MNEs are not taken into account.

The MNE concept is thus allowed for a temporary period of 18 months from the implementation of the export capacity. During this period IN TSOs are requested:

- i) to send a quarterly report listing all the market time units for which a MNE has limited the capacity; the first report shall be submitted by 10 working days after the end of the quarter when the go-live of the export capacity occurs; the subsequent releases shall be submitted by 10 working days after the end of each quarter;
- ii) to estimate the loss of social welfare due to the application of the MNE concept with the costs that should be borne in case MNEs are not taken into account; the results shall be submitted by 12 months after the implementation of the export capacity, along with a proposal to phase out or to keep using the MNE concept;

IN TSOs are requested to amend the IN CCM accordingly.

Selection phase and validation process

IN NRAs appreciate the deletion of the selection process from the D-2 capacity calculation process, nonetheless they are quite concerned by the implementation timeline proposed by IN TSOs that, as a matter of fact, allows the selection phase for 12 months after the approval of the IN CCM.

IN NRAs are aware that the selection process is meant by the TSOs to intercept potential failures in the common grid model (or in the individual grid models submitted by the TSOs) that may lead to unreliable capacity values. As stated in the first request for amendment, IN NRAs consider this argument is not valid because

- a) grid models defined in D-2 and D-1 should by construction be more accurate than the ones defined much earlier in time;
- b) undetected mistakes in IGM or CGM with a significant and obvious impact on the calculated capacities can be corrected by TSOs within the validation step;
- c) IN TSOs should take necessary actions to detect such mistakes before the capacity calculation is triggered (when the CGM is built).

For this reason, IN NRAs ask IN TSOs to review the implementation timeline to foresee the complete phase out of the selection process (LTTC/UTTC) in D-2 capacity calculation process from the approval of IN CCM.

For intraday process IN NRAs are fine with the abandoning of the selection step from Q4 2019 as suggested by IN TSOs.

Coordination between different capacity calculators

IN NRAs consider that a sort of coordination phase shall be implemented in case two different CCCs are assigned the capacity calculation task: in this phase the comparison between the values computed by each calculator shall be performed and a final value shall be identified on the basis of agreed rules. IN CCM shall be amended accordingly to allow such coordination: the relevant rules to pick up the final value shall be clearly reported. These rules should ensure a maximization of social welfare while respecting operational security constraint: the most likely feasible capacity should be selected.

Coordination of remedial actions

Article 8 of both D-2 and D-1 capacity calculation methodologies states that *“each TSO of the Italy North Region shall ensure that remedial actions are taken into account in CC under the condition that the available remedial actions remaining after calculation, taken together with the reliability margin referred to in Article 5, are sufficient to ensure operational security”*. *The use, during later operational security timeframes (DACF, IDCF and real time), of remedial actions defined during CC process will be coordinated in line with the methodologies to be defined according to the Articles 75 and 76 of the SOGL Regulation.* IN NRAs consider that the current proposal links coordinated security analysis and capacity calculation only when the usage of the relevant remedial actions is concerned. IN TSOs are asked to complement the IN CCM to address that all the remedial actions agreed during the capacity calculation process shall be made available also in the subsequent timeframes and vice versa. The proper links between IN CCM and the methodologies developed according to Articles 75 and 76 of Regulation EU 2017/1485 (hereinafter: SO GL) shall be added.

Capacity validation conditions

NRAs welcome that Article 9 of both D-2 and intraday proposals provides a comprehensive list of reasons that could lead a TSO to change the calculated capacity during the validation step. However, IN NRAs have some concerns about these conditions.

IN NRAs understand that conditions a) and b) refer to missing or incomplete inputs This should be clarified.

IN NRAs consider that condition d) is redundant with other conditions New constraints can only be detected in case of an outage (covered by condition c)), a change in forecasts (covered by transmission reliability margin) or incomplete inputs (covered by conditions a) and b)). This condition should be deleted.

Condition e) seems redundant with the calculation of the reliability margin. Changes in forecasts will be covered by the reliability margin up to the accepted risk level. This condition should also be deleted.

Moreover, IN TSOs are asked to include in the explanatory note proper justifications for each validation condition.

Conclusions

The IN NRAs have consulted and closely cooperated and coordinated to reach agreement that **they request an amendment to the IN CCM proposals submitted by IN TSOs pursuant to Article 20 of CACM**. The amended proposals shall take into account the IN NRAs position stated above, and shall 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 IN NRAs must make their national decisions to request an amendment to the capacity calculation methodology, on the basis of this agreement.