Explanatory Note of the common long term capacity calculation methodology for the SEE CCR in accordance with article 10 of Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation

September 2020

Contents

1. Introduction

This technical document sets out the main principles for the common capacity calculation methodology for the long term (yearly and monthly) time-frames (hereafter LT CCM) applied in the South East Europe Capacity Calculation Region (hereafter SEE CCR). It contains a description of methodology in compliance with the Forward Capacity Allocation guideline (hereafter referred to us FCA Regulation).
The participating TSOs from SEE CCR for the calculations are ADMIE (GR), ESO EAD (BG), Transelectrica (RO) and the following borders are considered GR-BG and BG-RO.

2. Coordinated NTC calculation methodology

2.1. Inputs

In order to allow the Coordinated Capacity Calculator (CCC) to perform the relevant Capacity Calculation (CC) processes, the TSOs of the SEE CCR shall provide the following relevant input data:

- Operational security limits and contingencies;
- Reliability Margins;
- Generation shift keys;
- Remedial actions;
- Scenarios.

In this chapter details about the previous data are described.

2.1.1. Operational security limits and contingencies

This section refers to Articles 6 of the LT CCM.

A Critical Network Element (CNE) is a network element either within a bidding zone or between bidding zones impacted by cross-border trades and monitored during the CC process under certain operational conditions. The CNEC (Critical Network Element and Contingency) is a CNE limiting the amount of power that can be exchanged, potentially associated to a contingency. They are determined by each SEE TSO according to agreed rules, described below.
The CNECs are defined by:

- A CNE: a line or a transformer that is significantly impacted by cross-border exchanges;
- An "operational situation": base case (N) or contingency cases (N-1, N-2, busbar faults, depending on the TSO risk policies).

A contingency is defined as the trip of one single or several network elements. A scheduled outage is not a contingency. A contingency can be a trip of:

- a line, a cable or a transformer (including phase shifter transformer);
- a generating unit;
- a load;
- a set of the aforementioned contingencies.

The association of contingencies to CNEs shall be done following the rules established in accordance with Article 75 of SO GL. The TSOs of the SEE CCR shall provide to the CCC a list of the proposed CNECs. The CCC shall merge the list of CNECs provided by all SEE CCR TSOs into a single list, which shall constitute the initial list of CNECs.

The maximum permanent admissible current/power limit means the maximum loading that can be sustained on a transmission line, cable or transformer for an unlimited duration without risk to the

equipment, determined by each SEE TSO in line with its operational security policy. As thermal limits and protection settings can vary in function of weather conditions, different values are calculated and set for the different seasons within a year. These values can be also adapted by the concerned SEE TSO if a specific weather condition is forecasted to highly deviate from the seasonal values. The maximum admissible limit is not reduced by any security margin, as all uncertainties in capacity calculations are covered by reliability margin.

For the capacity calculation, the SEE TSOs shall only monitor the CNECs significantly impacted by cross-zonal power exchanges. The selection of those CNECs shall be done by the CCC, according with the rules described in Article 7a of the SEE DA&ID CCM.

The CCC shall calculate the sensitivity factors for selecting the CNECs that are significantly impacted by cross-zonal power exchange.

The sensitivity factors calculated as a percentage using the relevant CGM and GSK are defined as follow:

$$SF_{CNEC} = \frac{P_f - P_i}{\Delta P} \times 100$$

with

SF_{CNEC}	Sensitivity factor for CNEC;
P_f	CNEC active power flow after ΔP;
P_i	CNEC active power flow based on the relevant CGM;
ΔP	Increase of the exchange with 100 MW through the north Greek borders, respectively south Romania borders.

SEE CCR cross-zonal network elements are by definition considered to be significantly impacted. The other CNECs from initial list shall have a sensitivity factor equal or higher than 5% to be taken into account in all of the steps of the common capacity calculation to determine the cross-zonal capacity.

SEE TSOs will not apply allocation constraints.

2.1.2. Reliability Margin (RM)

This section refers to Article 5 of the LT CCM.

The LT CCM is based on forecast models of the transmission system. Therefore, the outcomes are subject to inaccuracies and uncertainties. The aim of the RM is to cover a level of risk induced by these forecast errors.

In accordance with Article 11 of the FCA Regulation, which refers to Article 22 of CACM Regulation, the RM cover the following forecast uncertainties:

a. cross-zonal exchanges on bidding zone borders outside SEE CCR;
b. generation pattern including specific wind and solar generation forecast;
c. generation shift key;
d. load forecast;
e. topology forecast;
f. unintentional flow deviation due to the operation of frequency containment reserves.

The RM can be considered as an indirect input to the capacity calculation process since it refers to the difference where the TTC and the NTC limits are reached for the constraint under investigation.

Before the first operational calculation of the RMs for day-ahead timeframe the SEE TSOs shall use RM values already in operation in the existing capacity calculation initiatives.

After the first operational calculation of the RMs for day-ahead timeframe, the SEE TSOs, will use for the LT CC, the same RM used in the SEE CACM CCM

2.1.3. Remedial Actions (RA)

This section refers to Article 8 of the LT CCM.

The RAs defined by each SEE TSOs shall be either preventive (pre-fault) or curative (post-fault), i.e. affecting all CNECs or only pre-defined contingency cases, respectively. The capacity calculation process may only take into account those non-costly RAs which can be modelled. The SEE TSOs may use the following non-costly RAs, but are not limited to:

a. changing the tap position of a PST,
b. topological action: opening or closing of one or more line(s), cable(s), transformer(s), bus bar coupler(s), or switching of one or more network element(s) from one bus bar to another, connection/disconnection of reactor(s), capacitor(s).

The SEE TSOs shall use the RA during updates of CGMs with the latest available outage plan (Article 8 from LT CCM) or during local validation (Article 9 from LT CCM).

The SEE TSOs will not use the RA during TTC calculation (Article 10 from LT CCM) because the calculation is far away from real-time and during short-term capacity calculation the TSOs may need some RA to cover unplanned outages.

2.1.4. Scenarios

This section refers to Article 8 of the LT CCM.

In accordance with article 19 of the FCA Regulation, a common set of scenarios will be used for each long-term capacity calculation time frame in the CGM in order to perform security analysis based on multiple scenarios pursuant to article 10 of the FCA Regulation.

For yearly and monthly capacity calculation time frames, the SEE TSOs shall use annually created ENTSO-E year-ahead reference scenarios, in accordance with article 3.1 of CGMM for FCA in conjunction with article 65 of the SO Regulation.

The current CGMM for FCA indicates by default to be created 8 final scenarios per year (one peak scenario and one valley scenario for each season of the year). ENTSO-E through the TSOs jointly agree on annual basis and decide the number of CGMs will be created. For LTCC time frames, the SEE TSOs shall use only CGMs annually created.

The CCC updates CGMs, used for LTCC time frames, with information from year-ahead available plan created by ENTSO-E Outage Planning Coordination (OPC) process.

The information from preliminary year-ahead availability plans provided by all TSOs before 1st November (pursuant to article 97 of the SO Regulation) will be used for yearly CNTC calculations, in order to calculate yearly cNTCs.

The year-ahead seasonal scenarios used for yearly CNTC calculation will be updated for monthly CNTC calculation. SEE TSOs will request a scenario update for any predictable change, compared to the year-ahead seasonal CGMs, associated with a specific measure concerning the grid topology or generation pattern. In case they request an update in the new IGMs, provided by SEE TSOs, the net positions will be maintained the same as agreed in the year-ahead CGMs.

The replacement of each IGM in the associated seasonal CGM with the updated version of IGM, will be done by SEE CCC.

After the updated CGM it is obtained, SEE CCC will apply in the monthly updated CGM the selected planned outage intervals.

2.1.4.1. *Implementation of availability plan*

Year-ahead time frame:

The year-ahead CNTC calculations will be performed on seasonal CGMs for each month on valley and on peak time intervals.

The largest number of simultaneously planned outages in the synchronous area of the SEE region of the Continental Europe in the respective valley and peak periods of the month will be considered. All planned outages available in the OPC database for the selected time intervals are applied for the related default seasonal scenarios: the outages of the valley timestamp for the default valley scenario and the outages of the peak timestamp for the default peak scenario.

Based on the 24 time intervals (i.e. the network models including the planned outages), capacity calculations are performed, upon which the lowest capacity of the 24 capacity calculations of the year is selected. This is the calculated year-ahead capacity.

Month-ahead time frame:

The month-ahead CNTC calculations will be performed on updated seasonal CGMs for each month on valley and on peak time intervals with a weekly granularity resulting in 4 or 5 calculation time intervals, on valley and on peak CGMs.

Based on the 8-10 time intervals (i.e. the network models including the planned outages), capacity calculations are performed, upon which the lowest capacity (between peak and valley results) of each weekly capacity calculation of the month is selected. This is the calculated month-ahead capacity for the related weekly subperiods.

For this profile different month-ahead capacity products (e.g. month-ahead capacity with 4-5 weekly subperiods, with calculated capacity adjusted to the lowest calculated capacity per week) can be defined.

Reduction periods could be applied (yearly and monthly time frames) in case SEE CCR of different month-ahead capacity products or in case SEE CCR have critical planned outages or tie-lines out of operation.

SEE TSOs in coordination with SEE CCC may modify the above selection approach and capacity products based on later experiences.

2.1.4.2. *Verification of base case CGM*

After receiving the yearly CGMs and before the actual capacity calculation process, the LT CCM foresees the necessity to check the CGMs base case quality:

1. Mapping of the planned outages

Each CGM used for capacity calculations, the planned outages of grid elements will be added (see previous paragraph). The outage of the grid element combined with the topological changes will lead to different loading of the elements compared to the loading of those elements in seasonal CGMs.

2. Congestion Check in CGMs

While it can be expected that overloading of the grid elements will be avoided in the year-ahead reference scenarios, it is still possible that certain grid elements after planned outages will be overloaded.

In case after planned outage during congestion check will appear overloads on elements from CNEC list, the SEE TSOs will strive to meet security criteria (N-1 criteria) using the following RAs:

1. Topological measures such as:

- opening or closing of one or more line(s), cable(s), transformer(s), bus bar coupler(s) or;
- switching of one or more network element(s) from one bus bar to another, or;
- transformer and PST tap adjustment.

2. Decreasing the considered net position for the associated TSO in which is the overloaded CNEC, until CNEC overloads disappear.

The actions to obtain base case quality are shared among all SEE TSOs in advance of the capacity calculation.

The SEE CCC prepares a report including also the periods of added planned outages loading per CNEC in base case and the accompanying measures to solve grid congestions.

2.1.5. Mathematical description of the CNTC approach

This section refers to Article 10 and Article 10a of the LT CCM.

For the year-ahead and month-head market time-frames, individual values for cross-zonal capacity for each market time unit shall be calculated using the Coordinated Net Transmission Capacity (*CNTC*) approach as defined in the common capacity calculation methodology, as set forth in Article 10 of the FCA Regulation.

The CNTC computation is a centralized calculation based on AC load flow which delivers the main parameter needed for the definition of CNTC domain: the TTC represents the maximum power exchange on a bidding zone border and calculation use the common grid model, generation shift keys, and list of CNECs 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;

During the year-ahead and the month-ahead CC processes, the Total Transfer Capacity (TTC) for the south RO borders, BG-RO border, north Greek borders and BG-GR border shall be assessed in both border directions:

- Using Alternate Current (AC) load-flow algorithm in order to assess network security of the relevant CNECs, taking also into consideration the beneficial effects of remedial actions coordination;
- Based on:
  - year-ahead CGMs for year-ahead CC process;
  - updated year-ahead CGMs for month-ahead CC process;
- Applying modification of cross-zonal exchanges according to GSK files.

The *TTC* on the BG-GR direction is a ratio of the total *TTC* value calculated from all north Greek systems (power systems of Albania, FYROM, Bulgaria and Turkey) to the Greek system:

$$TTC_{BG-GR} = k_{BG-GR} \cdot TTC_{north\ GR\ systems-GR}$$

with

TTC_{BG-GR}	*TTC* on the BG-GR direction
k_{BG-GR}	splitting factor for BG-GR direction

$TTC_{north\ GR\ systems-GR}$ *TTC* from all north Greek systems to the Greek system

The *TTC* on the GR-BG direction is a ratio of the total *TTC* value calculated from the Greek system to all north Greek systems (power systems of Albania, FYROM, Bulgaria and Turkey):

$$TTC_{GR-BG} = k_{GR-BG} \cdot TTC_{GR-north\ GR\ systems}$$

with

TTC_{GR-BG}	*TTC* on the GR-BG direction
k_{GR-BG}	splitting factor for GR-BG direction
$TTC_{GR-north\ GR\ systems}$	*TTC* from the Greek system to all north Greek systems

The *TTC* on the BG-RO direction is a ratio of the total *TTC* value calculated from all south Romanian systems (power systems of Bulgaria and Serbia) to the Romanian system:

$$TTC_{BG-RO} = k_{BG-RO} \cdot TTC_{south\ RO\ systems-RO}$$

with

TTC_{BG-RO}	*TTC* on the BG-RO direction
k_{BG-RO}	splitting factor for BG-RO direction
$TTC_{south\ RO\ systems-RO}$	*TTC* from all south Romanian systems to the Romanian system

The *TTC* on the RO-BG direction is a ratio of the total *TTC* value calculated from the Romanian system to all south Romanian systems (power systems of Bulgaria and Serbia):

$$TTC_{RO-BG} = k_{RO-BG} \cdot TTC_{RO-\ south\ RO\ systems}$$

with

TTC_{RO-BG}	*TTC* on the RO-BG direction
k_{RO-BG}	splitting factor for RO-BG direction
$TTC_{RO-\ south\ RO\ systems}$	*TTC* from the Romanian system to all south Romania systems

The splitting factor used for year-ahead and month-ahead capacity calculation in the year *Y* will be based on the NTC historical values from the last two years like in the SEE DA&ID CCM. This approach is based on the Article 3(e) of the FCA Regulation that contributes to the objective of respecting the need for a fair and orderly market and price formation and ensures a fair distribution of costs and benefits between the involved TSOs. Moreover the approach is in line with the distribution of the congestion income (as defined in the Article 73 of CACM Regulation and Article 57 of FCA Regulation) collected by the TSOs, and thus do not alter the signals for investments to TSOs given by the congestion income. The splitting factors used at the NTC computation will comply with the security operation in accordance with Article 3(c) of the CACM Regulation, will not alter the signals for investments to TSOs given by the congestion income and allow reasonable financial planning according with Article 73 of the CACM Regulation.

The splitting factor for BG-GR direction is determined with the following equation:

$$k_{BG-GR} = NTC_{BG-GR} / NTC_{north\ GR\ systems-GR}$$

where:

k_{BG-GR}	splitting factor as percentage to be applied for BG-GR direction for year-ahead and month-ahead capacity calculation in the year Y
NTC_{BG-GR}	Average value of the NTC for the direction BG-GR (excluding the period when the tie-line BG-GR was out of operation for maintenance) in the last two years
$NTC_{north\ GR\ systems-GR}$	Average value of the total NTC for the direction north GR systems - GR (excluding the period when the tie-line BG-GR was out of operation for maintenance) in the last two years

The splitting factor for GR-BG direction is determined with the following equation:

$$k_{GR-BG} = NTC_{GR-BG} / NTC_{GR-north\ GR\ systems}$$

where:

k_{GR-BG}	splitting factor as percentage to be applied for GR-BG direction for year-ahead and month-ahead capacity calculation in the year Y
NTC_{GR-BG}	average value of the NTC for the direction GR-BG (excluding the period when the tie-line BG-GR was out of operation for maintenance) in the last two years
$NTC_{GR-north\ GR\ systems}$	average value of the total NTC for the direction GR-north GR systems (excluding the period when the tie-line BG-GR was out of operation for maintenance) in the last two years

The splitting factor for BG-RO direction is determined with the following equation:

$$k_{BG-RO} = NTC_{BG-RO} / NTC_{south\ RO\ systems-RO}$$

where:

k_{BG-RO}	splitting factor as percentage to be applied for BG-RO direction for year-ahead and month-ahead capacity calculation in the year Y
NTC_{BG-RO}	Average value of the NTC for the direction BG-RO in the last two years
$NTC_{south\ RO\ systems-RO}$	Average value of the total NTC for the direction south RO systems-RO in the last two years

The splitting factor for RO-BG direction is determined with the following equation:

$$k_{RO-BG} = NTC_{RO-BG} / NTC_{RO-south\ RO\ systems}$$

where:

k_{RO-BG}	splitting factor as percentage to be applied for RO-BG direction for year-ahead and month-ahead capacity calculation in the year Y
NTC_{RO-BG}	Average value of the NTC for the direction RO-BG in the last two years
$NTC_{RO-south\ RO\ systems}$	Average value of the total NTC for the direction RO-south RO systems in the last two years

The *CCC* of the SEE CCR shall provide to the SEE TSOs with the validated *NTCs* values after application of the *RM*s defined in accordance with Article 6 for the BG-RO and BG-GR borders.

The Net Transmission Capacity (NTC) on the BG-GR border is determined with the following equations:

$$NTC_{BG-GR} = TTC_{BG-GR} - RM_{BG-GR}$$

$$NTC_{GR-BG} = TTC_{GR-BG} - RM_{GR-BG}$$

with

NTC_{BG-GR}	*NTC* on the BG-GR direction
NTC_{GR-BG}	*NTC* on the GR-BG direction
TTC_{BG-GR}	*TTC* on the BG-GR direction
TTC_{GR-BG}	*TTC* on the GR-BG direction
RM_{BG-GR}	*RM* on the BG-GR direction
RM_{GR-BG}	*RM* on the GR-BG direction

The Net Transmission Capacity (NTC) on the BG-RO border is determined with the following equations:

$$NTC_{BG-RO} = TTC_{BG-RO} - RM_{BG-RO}$$

$$NTC_{RO-BG} = TTC_{RO-BG} - RM_{RO-BG}$$

with

NTC_{BG-RO}	*NTC* on the BG-RO direction
$NTC_{RO-BG} =$	*NTC* on the RO-BG direction
TTC_{BG-RO}	*TTC* on the BG-RO direction
TTC_{RO-BG}	*TTC* on the RO-BG direction
RM_{BG-RO}	*RM* on the BG-RO direction
RM_{RO-BG}	*RM* on the RO-BG direction

The Available Transmission Capacity (*ATC*) values for yearly market time-frame are equal with the NTC values determined according with previous equations.

The Available Transmission Capacity (ATC) for monthly market time-frame taking into consideration the Already Allocated Capacities (AAC) is determined with the following equations in case of BG – GR border:

$$ATC_{BG-GR} = NTC_{BG-GR} - AAC_{BG-GR}$$

$$ATC_{GR-BG} = NTC_{GR-BG} - AAC_{GR-BG}$$

with

ATC_{BG-GR}	*ATC* on the BG-GR direction
NTC_{BG-GR}	*NTC* on the BG-GR direction
AAC_{BG-GR}	*AAC* on the BG-GR direction
AAC_{GR-BG}	*AAC* on the GR-BG direction
ATC_{GR-BG}	*ATC* on the GR-BG direction
NTC_{GR-BG}	*NTC* on the GR-BG direction

The Available Transmission Capacity (*ATC*) for monthly market time-frame taking into consideration the Already Allocated Capacities (AAC) is determined with the following equations in case of BG – RO border:

$$ATC_{BG-RO} = NTC_{BG-RO} - AAC_{BG-RO}$$

$$ATC_{RO-BG} = NTC_{RO-BG} - AAC_{RO-BG}$$

with

ATC_{BG-RO}	*ATC* on the BG-RO direction
NTC_{BG-RO}	*NTC* on the BG-RO direction
AAC_{BG-RO}	*AAC* on the BG-RO direction
AAC_{RO-BG}	*AAC* on the RO-BG direction
ATC_{RO-BG}	*ATC* on the RO-BG direction
NTC_{RO-BG}	*NTC* on the RO-BG direction

The SEE TSOs do not expect that ATC values for yearly or monthly market time-frame to be zero, besides the situation on the GR-BG border when the single tie-line is out of operation for planned maintenance. Even this situation will no longer occur in the future because a new tie-line is planned for this border.

For the year-ahead and month-ahead capacity calculation the processes are depicted in Figure 1. It shows the various processes performed by entities involved.

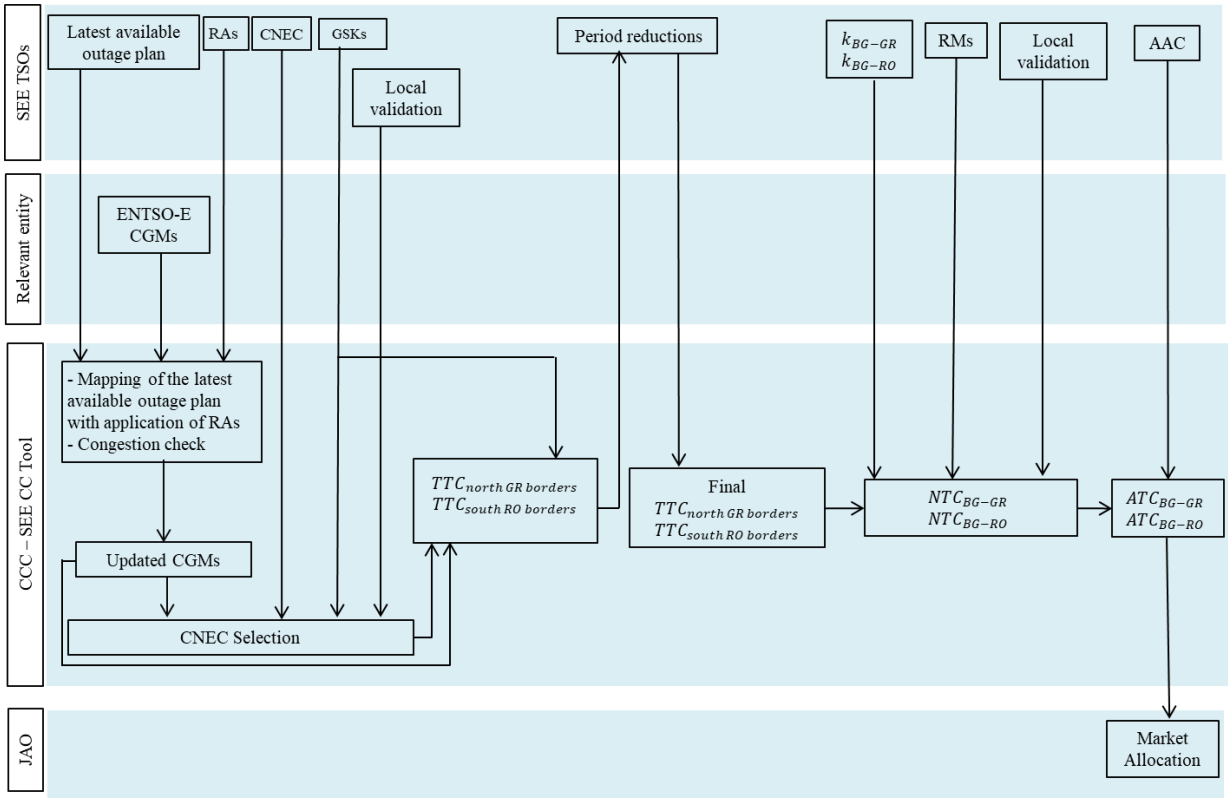

Figure 1: CNTC common capacity calculation process

The capacity calculation process in the SEE CCR shall be performed by the CCC and SEE TSOs according with the following procedure:

a. Each SEE TSO shall provide the CCC the following initial inputs: operational security limits and contingencies, RMs, GSKs;
b. The relevant entity shall provide the CGMs;
c. The CCC shall update the CGMs;
d. The CCC shall adjust the CGMs in order to be congestion free;
e. The CCC shall calculate the sensitivity factors for selecting the CNECs that are significantly impacted by cross-zonal power exchange;
f. SEE TSOs shall validate the list of monitored CNECs used for all steps of the common capacity calculation to determine the cross-zonal capacity;
g. The CCC shall calculate TTC for the north Greek borders, and south Romanian borders;
h. The CCC shall calculate NTC for the BG-GR and BG-RO borders. SEE TSOs either validate the NTC values or reduce the NTC values with a reason;
i. SEE TSOs, or an entity delegated by the SEE TSOs, shall send for each time frame the AAC to the coordinated capacity calculator. Yearly and monthly capacities could be sent by Joint Allocation Office (JAO);
j. The SEE CCC shall calculate the ATC values and shall verify that the ATC values of each border and direction of the SEE CCR remains non-negative in case of previously-allocated commercial capacity;

k. The SEE CCC shall publish the ATC values and provide them to the relevant entity for capacity allocation.

2.1.6. Cross-zonal capacity validation

This section refers to Article 9 of the LT CCM.

Regarding the final validation process, once the coordinated capacity calculator has calculated the TTC and after SEE TSOs provided information regarding reductions periods, it provides the concerned TSOs with these values. Each SEE TSO then has the opportunity to validate the TTC value calculated centrally or can reduce the value in exceptional situations. These situations are:

a. A forced outage as defined in Article 3 of SO Regulation;
b. when remedial actions, that are needed to ensure the calculated capacity, are not sufficient;
c. extremely low demand of a SEE TSO which leads to low system inertia and high voltage conditions and so require a minimum number of power plants on the grid, this may happen for a very few days either in spring or in autumn. This situation could happen only for month-ahead market time-frame when extremely low demand is forecast for a short period, e.g. Easter period;
d. a mistake in input data, that leads to an overestimation of cross-zonal capacity from an operational security perspective.

The SEE TSO requesting a capacity reduction is required to provide a reason for this reduction, its location and the amount of MW to be reduced in accordance with article 15 of FCA Regulation and article 26(5) of CACM Regulation.
Where the two SEE TSOs of a bidding zone border request a capacity reduction on their common border, the CCC will select the minimum value provided by the SEE TSOs. The reason associated to this value will be the one taken into account in all report required by relevant legislation.

If SEE TSOs find errors in cross-zonal capacity provided for validation, the relevant SEE TSO shall provide updated inputs to the SEE CCC for recalculations of cross-zonal capacities. The SEE CCC shall repeat calculation with updated inputs and send the recalculated cross-zonal capacities for another validation.
The recalculation can be performed only if it is enough time for the whole process of capacity calculation before the deadline of providing the ATC values to the relevant entity for allocation. If not SEE TSOs shall correct the cross-zonal capacities during validation.

2.2. Backup & Fallback processes

2.2.1. Backups and replacement process

For all inputs related to the capacity calculation, standard backup communication process has to be defined among SEE TSOs and the coordinated capacity calculator. Where inputs are not available for one of the parties at the expected time, back up procedures are applied until a critical deadline is reached, in order to get the associated inputs and carry on with the original process.
Where a critical deadline is reached and the inputs could not be provided to the concerned party on time, then fallbacks are applied, meaning that SEE TSOs and the CCC could use other inputs to perform their tasks.

2.2.2. Fallback NTC values

If the CCC could not complete a CC process within the agreed time for calculation, the following cases apply:
For the yearly process

The SEE TSOs will use the coordinated yearly values of the previous year as a starting point. Then the SEE TSOs will first bilaterally validate these NTC values (this could imply that a CNTC will be lower due to different foreseen topology situations); in a second step these values will be discussed and agreed upon in a SEE TSOs coordination meeting (this also qualifies as validation according to article 15 of the FCA Regulation) the latter ensures that also the fallback NTCs are coordinated.

For the montly process
The first step for the monthly calculations, is that the SEE TSOs take into consideration the remaining capacity of the yearly process for that month and the coordinated monthly values of the previous year of that month. Then the SEE TSOs considering the different foreseen topology situations will bilaterally validate these NTC values. The bilaterally agreed values will be in a second step discussed and agreed upon in a SEE TSOs coordination meeting.

3. Transparency

In accordance with Article 3(f) of the CACM Regulation aiming at ensuring and enhancing the transparency and reliability of information to the regulatory authorities and market participants, 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), except point i):

a. NTC values determined for year-ahead and month-ahead market time-frames;
b. RMs for each direction of the SEE CCR borders;
c. Limiting CNECs (CNEC which is limiting the maximum power exchange on a bidding zone border);
d. For each CNEC the EIC code of CNE and Contingency;
e. Real names of CNECs;
f. The following forecast information contained in the CGM for each bidding zone of the SEE CCR:
    i). Load
    ii). Production
    iii). Net position

Individual SEE TSO may withhold the publication of information disclosing the locational information referred to c), d), e), if required by a competent regulatory authority or by relevant national legislation on the grounds of protecting the critical infrastructure. In such case, the information referred to d) and e) shall be replaced with an anonymous identifier which shall be stable for each CNEC across all market time units. The anonymous identifier shall also be used in the other TSO communications related to the CNEC, including when communicating about an outage or an investment in infrastructure.

SEE 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 26 of FCA Regulation. For SEE CCR, this report will contain the capacity calculation approach used, statistical indicators of cross-zonal capacity, and, if appropriate, proposed measures to improve capacity calculation.
The Agency shall decide whether to publish all or part of this report.

4. Timescale for the CCM implementation

4.1. Prerequisites

When the new Capacity Calculation (CC) goes live, the calculation will be performed by the coordinated capacity calculator based on input provided by the SEE TSOs, and finally validated by the SEE TSOs. Two crucial elements in this process are the Common Grid Model (CGM) and the Industrialized Capacity Calculation Tool. The CGMs are being developed by a coordinated project of all ENTSO-E TSOs, and the industrialized capacity calculation tool is being developed by the CCC. Both shall be implemented before the "go-live" of the CCM.

4.2. Timeline for implementation of the SEE LT CCM

The TSOs of the SEE CCR shall implement the LT CCM no later than 01.01.2023 and shall consist of the following steps:

a. Internal parallel run for four months, during which the SEE TSOs shall test the operational processes for capacity calculation inputs, capacity calculation process and capacity validation and develop the appropriate IT tools and infrastructure;
b. External parallel run for six months, during which the SEE TSOs will continue testing their internal processes and IT tools and infrastructure.

The SEE TSOs expect the approval of LT CCM by the end of 2020 and estimate at least one year as the time required for procurement, development and testing of the industrial capacity calculation tool. Ten months are dedicated to Internal and External Parallel Run.