

First amendment of the Intra-Day Capacity Calculation Methodology of the Core Capacity Calculation Region

in accordance with Articles 20ff. of the Commission Regulation (EU)
2015/1222 of 24th July 2015 establishing a guideline on capacity allocation
and congestion management

Public Consultation

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NRA approval:	<input checked="" type="checkbox"/> outstanding	<input type="checkbox"/> approved

Whereas

TSOs of the Core CCR (“Core TSOs”), taking into account the following:

- (1) Based on further developments and alignments with Core NRAs after the decision by the Agency in 21st February 2019, Core TSOs deemed it necessary to introduce the following changes.
- (2) The following changes fulfil the objectives set out in Article 3 CACM.

For the purposes of this first amendment to the Core CCR TSOs’ Intraday Capacity Calculation Methodology, terms used in this document shall have the meaning of the definitions included in Article 2 of the CACM Regulation, of Regulation (EU) 2019/943, Directive 2009/72/EC, Commission Regulation (EU) 2016/1719 and Commission Regulation (EU) 543/2013 and the definitions set out in Article 2 Annex I of the Decision No 02/2019 of the Agency for the Cooperation of the Energy Regulators of 21 February 2019 on the Core CCR TSOs’ proposal for the regional design of the day-ahead and intraday common capacity calculation methodologies.

Article 1 Amendments

1. Article 2. Definitions and interpretation shall be amended accordingly:

a) A new number 68. shall be included and be read accordingly:

“ ‘CZC’ means cross-zonal capacity whereas this capacity is to be understood as an union of “flow-based parameters” (flow-based domain) and “LTA values” (LTA domain);”

b) A new number 69. shall be included and be read accordingly:

“‘LTA domain’ means a set of bilateral exchange restrictions covering the previously allocated cross-zonal capacities.”

2. Article 11. Update of intraday cross-zonal capacities remaining after SDAC shall be amended accordingly:

a) Paragraph 1 shall be replaced and be read accordingly:

“The CCC shall use the final cross-zonal capacities resulting from day-ahead capacity calculation and the net positions resulting from already allocated capacities in the SDAC to calculate the updated day-ahead cross-zonal capacities to be used as intraday cross-zonal capacities at the intraday cross-zonal gate opening time.

In case the LTA inclusion in day-ahead is ensured through the LTA margin approach, the intraday cross-zonal capacities are described as flow-based parameters. In case the LTA inclusion in day-ahead is ensured through the Extended LTA inclusion approach, the intraday cross-zonal capacities are described as an union of flow-based parameters and “LTA values” (LTA domain).

For the updated intraday flow-based parameters, the PTDF values shall be the final PTDFs resulting from the day-ahead capacity calculation, and the RAM shall be derived as:

$$\overrightarrow{RAM}_{UID} = \overrightarrow{RAM}_f - \mathbf{PTDF}_f \overrightarrow{NP}_{AAC}$$

Equation 1

with

$\overrightarrow{RAM}_{UID}$ updated remaining available margin for intraday cross-zonal capacities

\overrightarrow{RAM}_f final remaining available margin resulting from the day-ahead capacity calculation

\mathbf{PTDF}_f final power transfer distribution factor matrix resulting from the day-ahead capacity

$\overrightarrow{NP}_{AAC}$ calculation
net positions resulting from already allocated capacities in SDAC

The updated LTA values, applicable in case the Extended LTA inclusion approach is applied in day-ahead, shall be derived as:

$$\overrightarrow{LTA}_{UID} = \overrightarrow{LTA}_f - \overrightarrow{SEC}_{DA}$$

Equation 2a

with

$\overrightarrow{LTA}_{UID}$ updated remaining available long-term capacities for provision to SIDC; value per oriented border

\overrightarrow{LTA}_f LTA domain resulting from the day-ahead capacity calculation thus adjusted for long-term nominations; value per oriented border

$\overrightarrow{SEC}_{DA}$ schedule exchange resulting from already allocated capacities in SDAC”

b) Paragraph 2 shall be replaced and be read accordingly:

“In case the LTA inclusion in day-ahead is ensured through the LTA margin approach: for each CNEC, each TSO may reduce RAM_f to exclude the component AMR_{DA} and $LTA_{margin,DA}$ as calculated pursuant to the day-ahead capacity calculation methodology such that the reduced RAM_f is between the day-ahead RAM_f calculated pursuant to Equation 1 and the same RAM_f decreased by AMR_{DA} and $LTA_{margin,DA}$.

In case the LTA inclusion in day-ahead is ensured through the Extended LTA inclusion approach: for each CNEC, each TSO may reduce RAM_f to exclude the component AMR_{DA} as calculated pursuant to the day-ahead capacity calculation methodology such that the reduced RAM_f is between the day-ahead RAM_f calculated pursuant to Equation 1 and the same RAM_f decreased by AMR_{DA} . Each TSO may also reduce LTA_f such that the LTA_f is between the long-term allocated capacity value resulting from the day-ahead process, per oriented border, and zero.”

c) In paragraph 3 the fourth sentence shall be replaced and be read accordingly:

“In case the final cross-zonal capacities, calculated in accordance with this Article and taking into account **Error! Reference source not found.**(1), are in the form of flow-based parameters or in the form of a union of flow-based parameters and a LTA domain, such a decision shall be coordinated among all Core TSOs.”

3. Article 21. Calculation of ATCs for SIDC fallback procedure shall be amended accordingly:

a) In paragraph 1 the first sentence shall be replaced and be read accordingly:

“In case the SIDC is unable to accommodate flow-based parameters, the CCC shall convert the cross-zonal capacities into available transmission capacities (hereafter referred as “ATCs for SIDC fallback procedure”) for each Core oriented bidding zone border and each DA CC MTU.”

b) Paragraph 2 shall be replaced and be read accordingly:

“The cross-zonal capacities shall serve as the basis for the determination of the ATCs for SIDC fallback procedure. As the selection of a set of ATCs from the cross-zonal capacities leads to an infinite set of choices, an iterative algorithm in a systematic way or a mathematical optimisation determines the ATCs for SIDC fallback procedure.”

c) In paragraph 3 letter (a) shall be replaced and be read accordingly:

“final flow-based parameters (\mathbf{PTDF}_f and \overrightarrow{RAM}_f) as calculated pursuant to **Error! Reference source not found.** or final flow-based parameters (\mathbf{PTDF}_f and $\overrightarrow{RAM}_{UID}$) as calculated pursuant to **Error! Reference source not found.** and, if applicable, $\overrightarrow{LTA}_{UID}$ calculated pursuant to Article 11;”

d) In paragraph 5 the first sentence shall be replaced and be read accordingly:

“In case the cross-zonal capacities are described solely by flow-based parameters, the calculation of the ATCs for SIDC fallback procedure is an iterative procedure, which gradually calculates ATCs for each DA CC MTU, while respecting the constraints of the final flow-based parameters pursuant to paragraph **Error! Reference source not found.**.”

e) In paragraph 5, letter (b) the definition of \overrightarrow{RAM}_f shall be replaced and be read accordingly:

“remaining available margin of the flow-based parameters pursuant to paragraph 3, or equal to $\overrightarrow{RAM}_{UID}$ from Article 11(1), if applicable.”

f) A new paragraph 6 shall be added and be read accordingly:

“In case the cross-zonal capacities are described as the union of flow-based parameters and a LTA domain, the calculation of the ATCs for SIDC fallback procedure is a mathematical optimisation process.

Following objective function is applied:

$$\text{Maximize} \left[\left(\sum \overline{ATC}_{phys} / N_{oriented\ borders} \right) * W_{sum} + \left(\text{Min} \overline{ATC}_{phys} \right) * (1 - W_{sum}) \right]$$

with

\overline{ATC}_{phys} Sum of the ATCs resulting from flow based parameters and possible long-term capacities, e.g : $(\overline{ATC}_{phys} = \overline{ATC}_{FB} + \overline{ATC}_{LTA})$

$N_{oriented\ borders}$ The number of oriented borders in Core CCR

W_{sum} A common weighting factor applied on all Core borders to adopt between maximizing the sum of ATCs averaged across all borders and maximizing the lowest ATC across all borders; this value is a scalar between 0 and 1

(a) This objective function is subject to the following constraints:

$$\overline{ATC}_{phys} = \overline{ATC}_{FB} + \overline{ATC}_{LTA}$$

$$\overline{ATC}_{LTA} + (\alpha - 1) * \overline{LTA}_{UID} \leq 0$$

$$\mathbf{pPTDF}_{zone-to-zone} * \overline{ATC}_{FB} - \alpha * \overline{RAM}_{UID} \leq 0$$

$$\overline{ATC}_{FB} \geq 0$$

$$\overline{ATC}_{LTA} \geq 0$$

with

α A single optimization variable, between 0 and 1 used for all ATC borders.

\overline{LTA}_{UID} Updated remaining available long-term capacities for ATC extraction pursuant to Article 11

\overline{RAM}_{UID} Updated remaining available margin for ATC calculation provided by the FB Domain pursuant to Article 11

$\mathbf{pPTDF}_{zone-to-zone}$ positive zone-to-zone power trans-

fer distribution factor matrix

(b) At the end of the calculation, there are some constraints with no capacity left. These are the limiting constraints for the calculation of ATCs for the SIDC fallback procedure.”