First amendment of the Long-term capacity calculation methodology of the Core capacity calculation region

in accordance with Article 10 of Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation

September 2025

Whereas

(1) This is the first amendment of the common coordinated long-term capacity calculation methodology (the 'Amendment') for the Core capacity calculation region ('Core CCR') in accordance with Article 4 (12) 2nd sentence and Article 10 of Commission Regulation (EU) 2016/1719 establishing a guideline on Forward Capacity Allocation ('FCA Regulation').

(2) The Amendment takes into account Regulation (EC) No 2019/943 on the internal market for electricity ('Electricity Regulation'), the general principles of forward capacity calculation set out in Article 10 of the FCA Regulation, and the objectives listed in Article 3 of the FCA Regulation.

(3) With this amendment, Core TSOs introduce the so called ATC Benchmark concept by which calculated remaining available margins (RAM) are adjusted to ensure the flow-based domains meets historical benchmark.

(4) This present amendment further aims at including the bidding zone border between the Single Electricity Market of Ireland and Northern Ireland (SEM) and France (FR). The Core LT CCM shall be applicable as of the SEM-FR bidding zone border becoming effective, i.e. from the date of operation of the interconnector on the respective bidding zone border.

(5) With this amendment, Core TSOs introduce further changes to improve the capacity calculation process based on their experience gained during the implementation of the common coordinated long-term capacity calculation methodology, namely HVDC integration, inputs for fallback procedures and published data quality.

(6) This LT CCM contributes to the achievement of the objectives of forward capacity allocation listed in Article 3 of the FCA Regulation. In particular, this Amendment:

a) takes into account the hedging needs of electricity market participants, by offering capacity based on a flow-based domain specifically adjusted to meet historical benchmark. It is promoting effective long-term cross-zonal trade with long-term cross-zonal hedging opportunities for electricity market participants in accordance with Article 3(a) of the FCA Regulation;

b) allows for improvedfallback procedures, improved quality for data publication and better integration of HVDC interconnectors to the capacity calculation process. Thus, this Amendment contributes to the optimisation of the calculation and allocation of long-term cross zonal capacity in Core, in accordance with Article 3(b) of the FCA Regulation;

c) applies equally to all market participants on all respective bidding zone borders in the Core CCR, thereby ensuring a level playing field amongst market participants, and providing non-discriminatory access to long-term cross-zonal capacity in accordance with Article 3(c) of the FCA Regulation;

d) has been developed and adopted in a transparent process involving all the relevant stakeholders. This ensures fair and non-discriminatory treatment of the TSOs, ACER, regulatory authorities and market participants in accordance with Article 3(d) of the FCA Regulation;

e) continues to contribute to an orderly price formation and respects the need for a fair

and orderly forward capacity allocation in accordance with Article 3(e) of the FCA Regulation;

f) requires the Core TSOs to provide market participants with reliable information on cross-zonal capacities for the forward allocation in a transparent and continuous way by publication of the validated results. This includes regular reporting on specific processes within capacity calculation. Core TSOs will further publish the Benchmark ATC values taking into account during the capacity calculation process. As such, it ensures and enhances the transparency and reliability of information on forward capacity allocation in accordance with Article 3(f) of the FCA Regulation;

g) enables the allocation of long-term cross-zonal capacities and this provides long-term price signals and hedging and thus facilitates efficient investments in transmission, generation and consumption and contributes to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union in accordance with Article 3(g) of the FCA Regulation.

Article 1
General Improvements

1. Article 2. Definitions shall be amended accordingly:

    1. A new letter (ab) shall be included and be read accordingly:

        "(ab) 'AAC' means: Already Allocated Capacity, which refers to the transmission capacity that was allocated in the previous auctions;"

    2. A new letter (cb) shall be included and be read accordingly:

        "(cb) 'ATC' means the available transmission capacity on bidding zone borders, which is the transmission capacity that remains available after the deduction of eventual previously allocated capacities and which respects the physical conditions of the transmission system."

    3. A new letter (cc) shall be included and be read accordingly:

        "(cc) 'MaxATC' means: the maximum benchmark capacities on bidding zone borders."

    4. A new letter (cd) shall be included and be read accordingly:

        "(cd) 'MaxATC $_{f}$' means: the final maximum benchmark capacities on bidding zone borders."

    5. A new letter (ce) shall be included and be read accordingly:

        "(ce) '$MaxATC_{split}$' means: the maximum benchmark capacities on bidding zone borders adjusted for splitting."

    6. A new letter (cf) shall be included and be read accordingly:

"(cf) 'MinATC' means: the minimum benchmark capacities on bidding zone borders."

7. A new letter (cg) shall be included and be read accordingly:

   "(cg) '$MinATC_f$'means: the final minimum benchmark capacities on bidding zone borders."

8. A new letter (ce) shall be included and be read accordingly:

   "(cg) '$MinATC_{split}$' means: the minimum benchmark capacities on bidding zone borders adjusted for splitting."

9. A new letter (mb) shall be included and be read accordingly:

   "(mb) 'Correction $factor_{down}$' means: the correction factor used to decrease MinATC, equal to 0.9."

10. A new letter (mb) shall be included and be read accordingly:

    "(mb) 'Correction $factor_{up}$' means: the correction factor used to decrease MinATC, equal to 1.1."

11. A new letter (ssb) shall be included and be read accordingly:

    "(ssb) 'PTR' means: Physical Transmission Rights."

12. A new letter (bbb) shall be included and be read accordingly:

    "(bbb) 'SEM' means: the Single Electricity Market, the bidding zone consisting of both Ireland and Northern Ireland as a single all-island electricity market."

13. A new letter (ccc) shall be included and be read accordingly:

    "(ccc) 'Splitting Factor' means: factor pursuant to the Core TSOs Long-term Splitting Methodology."

2. A new Article (10a), titled "Benchmark Input for RAM Adjustment" shall be included and be read accordingly:

1. "Pursuant to regulatory guidance, Core TSOs shall use 2025 historic yearly, respecting splitting requirements, and 2025 seasonal average of historic monthly ATCs as Benchmark ATC values for the modification of the RAM of CNECs defining the FB domain.

   a. Benchmark ATCs will refer to 2025 historic yearly and seasonal monthly ATC values with the exception of benchmark values for DE-AT, SEM-FR, PL and borders applying PTRs. DE-AT borders shall have yearly and monthly benchmark values of 50% of the 2025

historical ATC values. SEM-FR and borders applying PTRs will be subject to regulatory guidance. PL borders will be subject to national regulatory guidance. Benchmark ATCs for the monthly calculation are based on the average of historic values per season, corresponding to seasonal ENTSO-E CGMs in accordance with Article 10. Yearly and monthly ATC benchmark values that shall be used for LTCC go-live are defined in Annex 1;

b. Historical yearly and monthly ATCs shall serve as the basis for the determination of the MinATC and MaxATC. In the yearly capacity calculation, MinATC and MaxATC inputs shall be adjusted by TSOs to anticipate splitting, pursuant to the Core TSOs Long-Term Splitting Methodology.

$$MinATC_{split} = \frac{MinATC}{Splitting\ factor}$$

$$MaxATC_{split} = \frac{MaxATC}{Splitting\ factor}$$

with

$MinATC_{split}$: minimum benchmark capacities on bidding zone border adjusted for splitting

$MaxATC_{split}$: maximum benchmark capacities on bidding zone border adjusted for splitting

$Splitting\ factor$: factor pursuant to Core TSOs Long-term Splitting Methodology

c. Pursuant to regulatory guidance, the MinATC and MaxATC for the yearly and monthly calculation are defined as follows:

i. For the yearly capacity calculation

$$MinATC_f = MinATC_{split} \times Correction\ factor_{down}$$

$$MaxATC_f = MaxATC_{split} \times Correction\ factor_{up}$$

ii. For the monthly capacity calculation

$$MinATC_f = MinATC \times Correction\ factor_{down}$$

$$MaxATC_f = MaxATC \times Correction\ factor_{up}$$

with

$MinATC_f$: final minimum benchmark capacities on bidding zone border

$MaxATC_f$: final maximum benchmark capacities on bidding zone border

$Correction\ factor_{down}$: correction factor used to decrease MinATC, equal to 0.9

$Correction\ factor_{up}$: correction factor used to increase MaxATC, equal to 1.1

d. In accordance with Article 14, RAMs of cNECs shall be modified during the capacity calculation to produce a resulting domain that accommodates the Benchmark ATC values. Induced flows shall be calculated for each CNEC based on a $MinATC_f$ and $MaxATC_f$, after which the RAM of each CNEC shall be adjusted based on the induced flows in accordance with Article 14(7);

2. Based on common TSO agreement in accordance with Article 19, each Core TSO retains the discretion to review and, where appropriate, adjust MinATC and MaxATC values defined in Annex 1 on an annual basis, taking into account evolving internal and external circumstances;

3. Any updates to the MinATC and MaxATC values shall be decided upon by Core TSOs on an annual basis no later than two months prior to the commencement of the yearly calculation;

4. The Core TSOs, with support of the Core CCC, shall review and update the methodology for usage of the benchmark input in the LT CC in accordance with Article 18(5). "

3. Article 11. Integration of HVDC Interconnectors at the Core Bidding Zone Borders shall be amended accordingly:

In Paragraph 2, the duplicate definition of $PTDFVH\_2,l$ shall be deleted.

In Paragraph 4. the last sentence, stating "In case of a planned outage of the HVDC interconnector, the MPTC shall be set to zero." shall be deleted.

4. Article 12. Description of the CC inputs and outputs shall be amended accordingly:

Paragraph 1 shall be replaced and be read accordingly:

" 1. For each calculation time frame and CGM, the Core TSOs shall provide the Core CCC with the following inputs, a Core TSO may delegate its obligation of

providing the inputs to another Core TSO."

(7) GSKs in accordance with Article 8;

(8) MPTCs of HVDCs inside the Core CCR in accordance with Article 11;

(9) CNECs in accordance with Article 7;

(10) Reliability margin in accordance with Article 4;

(11) Imax per CNE in accordance with Article 5(1)(a);

(12) External constraints in accordance with Article 6; and

(13) OPC data in accordance with Article 10.

(14) Benchmark ATC values in accordance with Article 10a."

5. Article 13. Computation of Power Transfer Distribution Factors shall be amended accordingly:

Paragraph 2. shall be replaced and be read accordingly:

"The slack node shall be the same node for each synchronous area, across all CGMs of a capacity calculation time frame."

6. Article 14. Computation of Remaining Available Margin shall be amended accordingly:

In Paragraph 5, a new sentence shall be included and be read accordingly:

"A Core TSO may delegate its obligation of providing the minimum percentage of Fmax for RAM for its own CNECs to another Core TSO."

A new Paragraph 7. shall be included and be read accordingly:

"7. Finally, the RAM before validation shall be adjusted to accommodate the benchmark ATC value in accordance with Article 10a."

a. If RAM_{bv} is smaller than minInducedFlow, it shall be adjusted to equal minInducedFlow

b. If RAM_{bv} is greater than maxInducedFlow, it shall be adjusted to equal maxInducedFlow

c. Else, RAM_{bv} shall not be adjusted

Minimum and maximum induced flows shall be calculated on each CNEC as follows:

$$minInducedFlow = F_{correction} * (\mathbf{pPTDFz2z} * \text{minATC})$$

$$maxInducedFlow = F_{correction} * (\mathbf{pPTDFz2z} * \text{maxATC})$$

with

pPTDFz2z positive zone-to-zone power transfer distribution factor matrix

7. Article 15. Consideration of Non-Core CCR Bidding Zone Borders shall be amended accordingly:

   In Paragraph 3, the last sentence shall be replaced and be read accordingly:

   "The Core TSOs shall start to study solutions for considering influence of non-Core CCR bidding zone borders immediately upon the implementation of Advanced Hybrid Coupling (AHC) in the Core DA CCM, and shall provide a report with the proposal for the improvements of treatment of non-Core exchanges in the LT CCM within 12 months after LTCC Go-Live"

8. Article 16. Fallback Procedure shall be amended accordingly:

   In Paragraph 4. letter b) shall be replaced and be read accordingly:

   "For the monthly capacity calculation, the FB parameters calculated for the preceding monthly auction shall be used as a basis."

9. Article 20. Publication of Data shall be amended accordingly:

   1. In Paragraph 1. letter (e) shall be replaced and be read accordingly:

      "detailed breakdown of the final FB parameters per CNEC: Imax, U, cosj, Fmax, Fref, F(0,Core), FRM, FAAC, RAM, minRAM application, zone-to-slack PTDFs"

   2. In Paragraph 1. letter (i) Paragraph (iii) shall be replaced and be read accordingly:
      "reference net positions of all bidding zones in the synchronous areas of Continental Europe , and island of Ireland and the synchronous area of the island of Ireland, and reference exchanges for all HVDC interconnectors within the synchronous area of Continental Europe, and between the synchronous area of Continental Europe and other synchronous areas and between synchronous area island of Ireland and other synchronous areas; and"

   3. In Paragraph 1. A new letter (k) shall be included and be read accordingly:
      "ATC Benchmark in accordance with Article 10a."

10. Article 22. Timescale for Implementation shall be amended accordingly:

(15) In Paragraph 3. letter (c) shall be replaced and be read accordingly:

" (c) implementation by the following deadlines of:
a flow-based yearly auction for 2027; and

a flow-based monthly auction for January 2027"

(16) A new Paragraph 6. shall be included and be read accordingly:

"The provisions of the present capacity calculation methodology shall apply to the SEM-FR interconnector once commissioning is finalized and the technical conditions allowing commercial operations in the long-term timeframe to begin are met. The integration of the HVDC cable connecting the two bidding zones shall be conducted in compliance with the provisions of Article 11."

11. Annex 1. 2025 Benchmark Values shall be included and read accordingly:

1. "Core TSOs shall use 2025 ATC benchmark values as inputs to the LT CC process. These values shall be applied in accordance with Article 10a (2) and may be subject to revision."
    i. With the footnote: "Average seasonal monthly values for autumn and winter 2 seasons are not yet available prior to submission of the LTCCM 1st RfA to the public consultation. Values will be added to the annex for final submission of the LTCCM 1st RfA once they become available in November 2025."

Border	2025 ATC benchmark: Yearly CC	2025 ATC benchmark: Monthly CC, Winter 1	2025 ATC benchmark: Monthly CC, Spring	2025 ATC benchmark: Monthly CC, Summer
ATtoCZ	200	150	150	150
ATtoDE	980	1030	897	897
ATtoHU	250	152	152	152
ATtoSI	300	300	217	300
BEtoDE	260	240	173	140
BEtoFR	250	438	275	425
BEtoNL	473	146	146	146
CZtoAT	200	60	40	17
CZtoDE	600	301	301	301

CZtoPL	0	0	0	0
CZtoSK	500	300	300	300
DEtoAT	980	1430	1430	1430
DEtoBE	260	240	173	140
DEtoCZ	300	200	187	180
DEtoFR	600	400	400	400
DEtoNL	827	254	254	254
DEtoPL	0	0	0	0
FRtoBE	1600	275	200	200
FRtoDE	1000	260	290	170
HRtoHU	400	50	50	50
HRtoSI	500	150	150	150
HUtoAT	250	90	60	22
HUtoHR	500	50	33	50
HUtoRO	350	120	120	173
HUtoSI	150	50	50	50
HUtoSK	800	50	50	50
NLtoBE	473	146	146	146
NLtoDE	827	254	254	254
PLtoCZ	0	0	0	0
PLtoDE	0	0	0	0
PLtoSK	0	0	0	0
ROtoHU	350	120	120	173
SItoAT	300	130	83	23
SItoHR	500	150	150	150
SItoHU	150	50	50	50
SKtoCZ	400	300	300	300
SKtoHU	700	150	150	150
SKtoPL	0	0	0	0