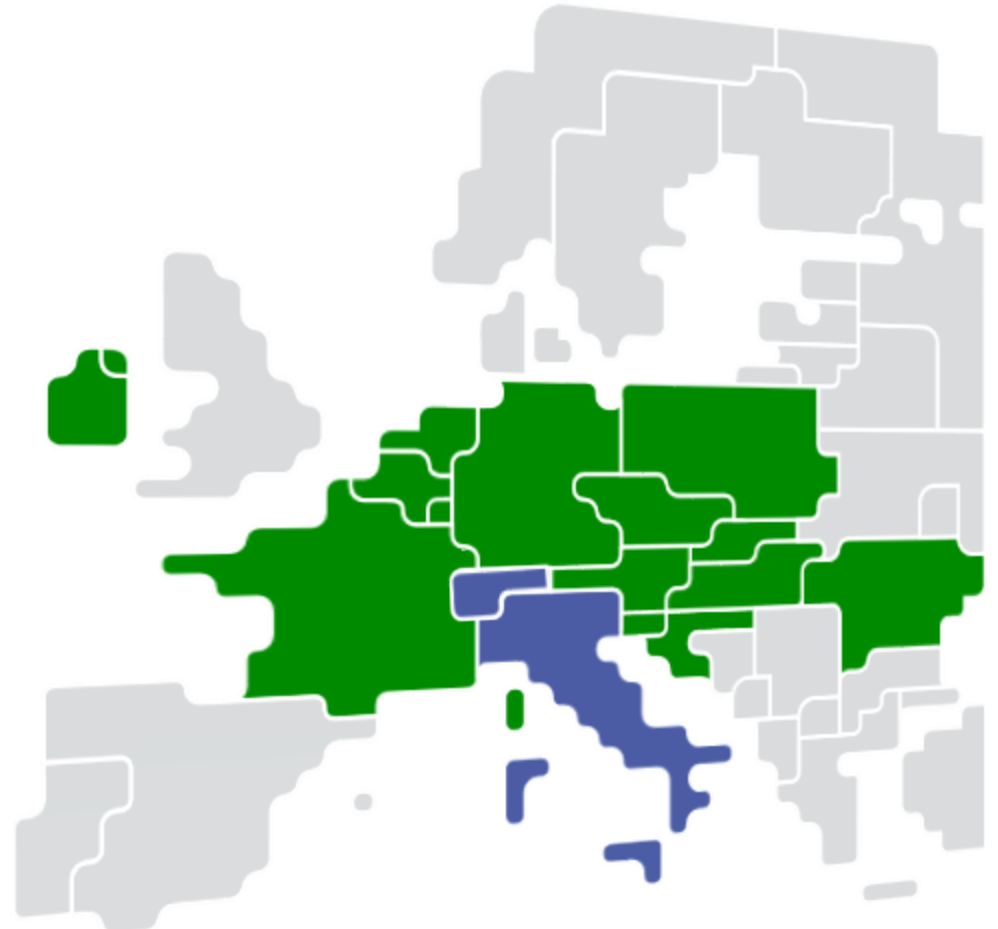




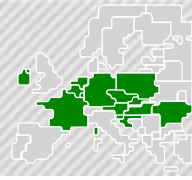
# Core & CE Consultative Group

16 October 2025  
09:00 – 17:00h (CET)  
Prague (Hybrid)



# 1. Welcome and Introduction

Practicalities, announcements and reminders



## Co-chairs



**Zélie Gautier**  
Market Participants  
Engie

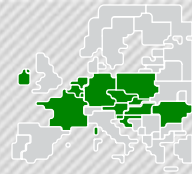


**Ruud OTTER**  
STK Manager Core

## Practicalities

- During meeting
  - Please use the **chat** in Teams to address questions. If you have a specific question on the slide, include the slide number in your question.
  - After each topic there will be a short Q&A section to see if all key questions have been addressed
- Follow up
  - Minutes and final meeting documents will be shared with CCG distribution list
  - JAO Q&A forum

# 1. Welcome and introduction

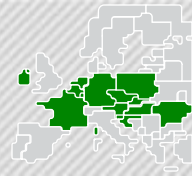


## Agenda (1/2)

#	TOPIC	WHO	TIMING
1	<b>Welcome and introduction</b> <ul style="list-style-type: none"> <li>Announcements</li> <li>Agenda for today</li> </ul>	STK managers	09:00 – 09:15
2.	<b>Core / CE Program Update</b> <ul style="list-style-type: none"> <li>Key considerations and outlook</li> <li>Update on Celtic Interconnector</li> </ul>	STK managers S. DUANE	09:15 – 09:45
<b>CCR Central Europe</b>			
3	<b>Day-Ahead Capacity Calculation</b> <ul style="list-style-type: none"> <li>Regulatory approval of the DA CCM</li> <li>Explanation of the CE DACCM and outlook</li> </ul>	CE NRAs L WACHTER-KOLLMANN F. CHIANESE	09:45 – 10:15
<b>CCR Core</b>			Break: 10:15 – 10:30
4	<b>Long-term capacity calculation</b> <ul style="list-style-type: none"> <li>Outline and roadmap incl. STK management milestones</li> <li>LT CCM amendment: overview</li> <li>Deep-dive on the benchmark: reference, solution for revenue adequacy, technical concept</li> <li>Introduction of EXT//run setup</li> </ul> <b>Day-ahead capacity calculation -,removal of LTA inclusion</b> <ul style="list-style-type: none"> <li>Feedback from market parties on TSOs initial impact assessment</li> <li>Analysis on the alpha factor with 2025 SDAC results</li> <li>Solution put forward in the 4th proposal for amendment to DA CCM</li> </ul>	P. BRHLIKOVA  Market Parties P. BAUMANNS	10:30 – 12:00
			Break: 12:00 – 13:00
5	<b>Day-Ahead Capacity Calculation – other topics</b> <ul style="list-style-type: none"> <li>DA CCM amendment: overview</li> <li>Update on AHC</li> </ul>	P. BAUMANNS	13:00 – 13:30
6	<b>Intraday Capacity Calculation</b> <ul style="list-style-type: none"> <li>Follow-up on operational processes</li> <li>ID CCM amendment: overview</li> <li>IDCC(d) planning</li> <li>CIS improvements planning</li> <li>minRAM assessment</li> </ul>	P. THOMAS	13:30 – 14:30
			Break: 14:30 – 15:00

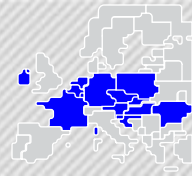
# 1. Welcome and introduction

Z. GAUTIER

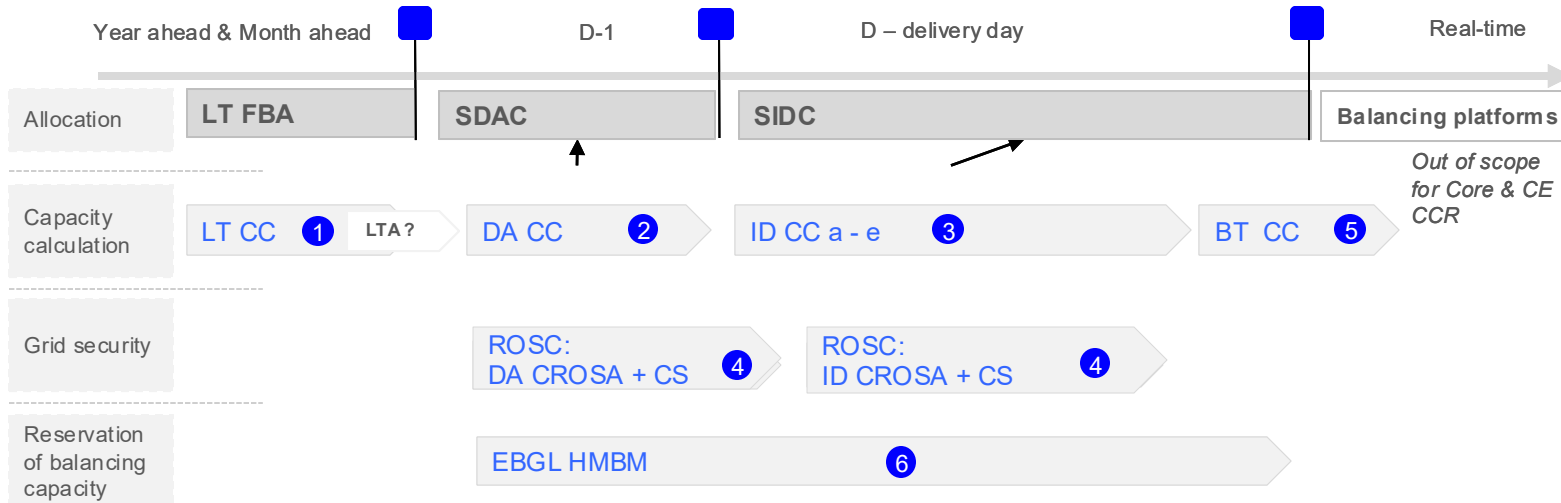


## Agenda (2/2)

#	TOPIC	WHO	TIMING
7	<b>Derogations on the minimum 70% requirement beyond 2025</b> <ul style="list-style-type: none"><li>• Overview of the derogations beyond 2025</li></ul>	Core NRAs	15:00 – 15:30
8	<b>AOB &amp; closure</b> <ul style="list-style-type: none"><li>• Next Core CG meeting</li></ul>	STK managers	15:30 – 15:45



### Key considerations and outlook (1/3)



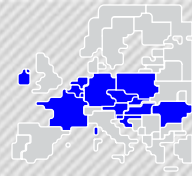
#### ① Long-Term CC

- Core TSOs are implementing a Flow-based coordinated capacity calculation by Nov 2026
- Core TSOs are consulting on their proposal for amendments to LT CCM, DA CCM, ID CCM which is a package consisting of tuning the LT flow-based domain to a historical benchmark and of the removal of LTA inclusion – *covered as separate topic*
- CE: formal expansion to LT timeframe is subject to a future amendment of CCR determination, envisaged after FCA 2.0.

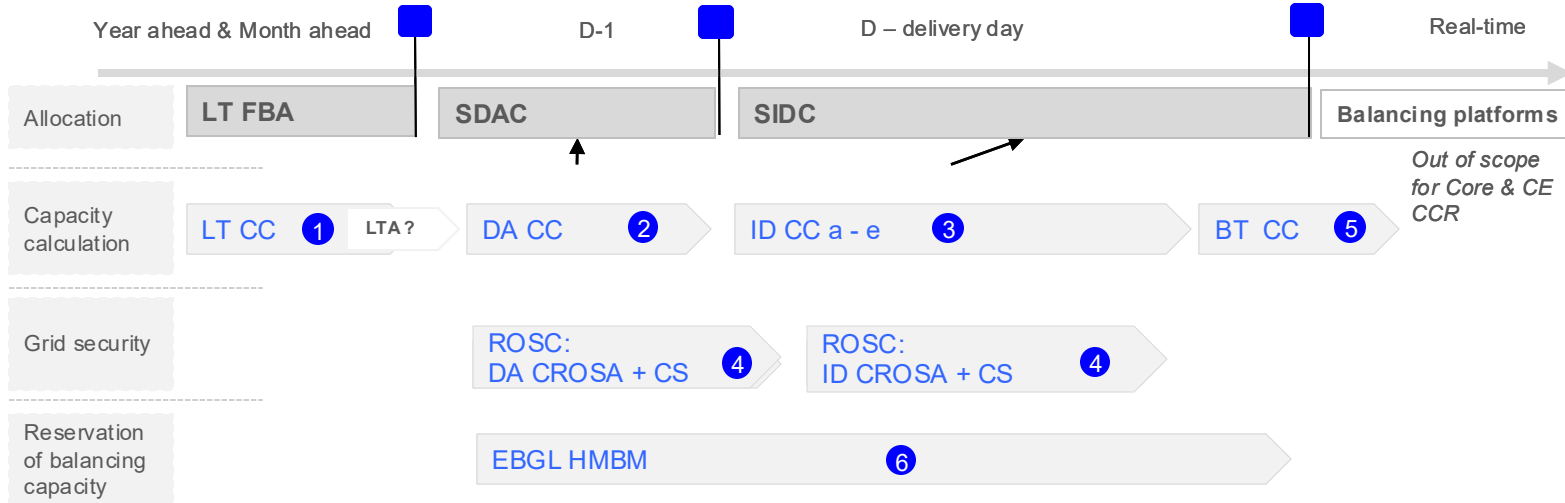
#### ② Day-Ahead CC

- Core Advanced hybrid coupling (AHC): enables the single day-ahead market coupling to allocate Core capacities between Core and non-Core exchanges on EU borders in the most efficient manner – *covered as separate topic*
- Coordinated validation (CV): stepwise implementation with first steps planned in Core in the course of 2026/2027. Completion of this implementation will be done in Central Europe. Go-live of ROSC is a pre-condition to fully enable the RA potential.
- Swiss integration: transitional solution for Swiss integration being developed to function until go-live of Central Europe DACC

## 2. Core / CE Program Update



### Key considerations and outlook (2/3)



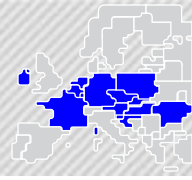
### ③ Intraday

- Core: completion of recalculations IDCC(d) (April 2026) and IDCC(e) (end of 2026) and TSOs are conducting a minRAM study – *covered as separate topic*
- Core: flow-based allocation of IDAs and Advanced Hybrid Coupling: part of 5th proposal for amendment Core ID CCM
  - Facilitate transition to FB for IDA in Core in 2027
  - Advanced hybrid coupling: study to develop a technical concept that is compatible with a 'hybrid' set-up in allocation i.e. IDAs in FB and continuous trading in ATC
  - Timing of implementation of AHC to be defined - either still in Core or directly in Central Europe
- CE: formal expansion to ID subject to ongoing ACER decision on CCR determination

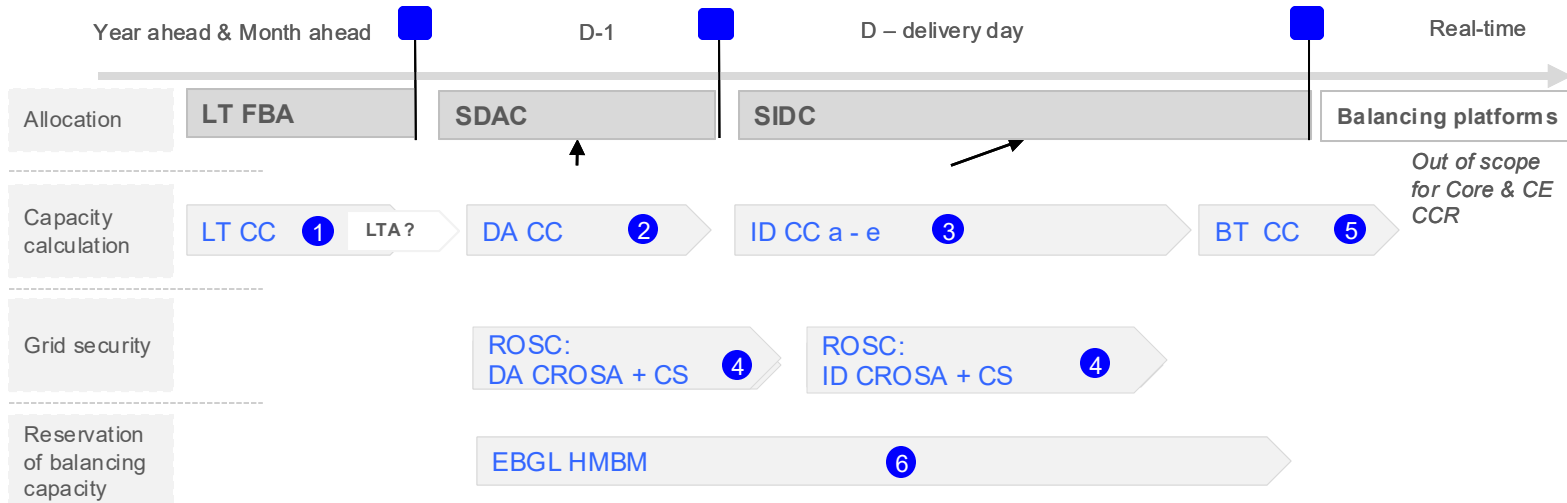
### ④ ROSC and Cost Sharing

- Core: on 25/9/2024 European court annulled the cost sharing methodology. ACER is launching revision of the methodology. TSOs are engaging with NRAs and ACER on the approach for the required loop flow threshold study
- CE: formal expansion to ROSC/CS subject to ongoing ACER decision on CCR determination
- Developments in Core continue in parallel to drafting of the CE methodologies

## 2. Core / CE Program Update



### Key considerations and outlook (3/3)

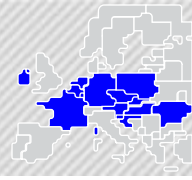


#### 5 BTCC

- The ambition is to implement balancing timeframe capacity calculation directly in CE, after implementation of IDCC & ROSC/CS in CE
- Formal expansion of CE to balancing timeframe is subject to a future amendment of CCR determination

#### 6 EBGL HMBM: harmonized market-based methodology

- Market-based allocation is governed by the pan-EU methodology for harmonizing processes for the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves.
- If one or more TSOs within a CCR trigger the application of market-based allocation, the regional methodologies for capacity calculation and ROSC are to be amended to enable this application
- TSO are currently assessing the implementation approach and aim to have a plan end of 2026. This is done in CE context.



### Update on delay Celtic Interconnector and next steps

#### Background

- EirGrid and SONI plan to join Core CCR capacity calculation operations based on the construction timeline of the 700 MW HVDC Celtic interconnector linking the Single Electricity Market (SEM) of Ireland and Northern Ireland bidding zone with the French power system and bidding zone
- There is a construction delay for the Celtic interconnector, and so the original commercial go-live date of Q1-27 has now been moved to Q1-28
  - Keeping to the original timelines would mean increased operational overhead for EirGrid/SONI associated with organising teams and resources well in advance of cable go-live

#### EirGrid is currently exploring and assessing the viability of a revised project plan with RTE and the relevant Core and CE PTs and WGs, with intent to then present our revised plan to TSOs

- Due to these issues, EirGrid is exploring the options with RTE to delay the Core EXT//RUN to when the EirGrid IT tooling is ready,
  - This would minimise the operational overhead for EirGrid/SONI associated with organising teams and resources well in advance of cable go-live.
  - This would also allow additional contingency for all new EirGrid/SONI IT tooling to be developed, tested, integrated and deployed. It would also mitigate any risks associated with completing a //RUN too far in advance of go-live.
- EirGrid is also exploring the option with NEMOs and SDAC/SIDC to go-live independently in SDAC and SIDC at different times prior to Q1-28, to allow for independent testing
- To ensure the EirGrid accession is also embedded the relevant methodologies are for public consultation until 22/10
  - 4th amendment of Core LTTR Design - [LINK](#)
  - 4th amendment of Core HAR Annex - [LINK](#)
  - 2nd amendment of Core LTSR - [LINK](#)



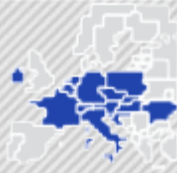
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\* as according to ACER Decision No 04/2024 (of 19 March 2024)

## APPROVAL PROCESS

- NRAs unanimously agreed to approve the Central Europe day-ahead capacity calculation methodology.
  - CE NRAs would like to thank CE TSOs for the fruitful discussions throughout the process that have enabled this important milestone to be reached.
- Next steps:
  - Regulatory level: each NRA will proceed with its national process to formally approve the methodology in the coming weeks.
  - TSO level: the implementation is already ongoing.
- CE NRAs have set an ambitious implementation deadline for the capacity calculation go-live of 15 January 2028.
  - NRAs will continue working with TSOs towards the implementation of the capacity calculation.



### Introduction

- With the approval of the CE DA CCM by CE & iTCP NRAs, TSOs would like to provide a general overview for Market Parties regarding the methodology design
- **Reminder:** Central Europe CCR is the merger of Core and Italy North CCRs, with Switzerland integrated as a 'technical counterparty' (iTCP). The goal of this methodology is to create a single harmonized day-ahead flow-based capacity calculation for all CE bidding zone borders, with the iTCP included to the fullest extent while not participating in market coupling

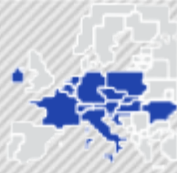
### Main objectives of the CCM

- Ensure non-discriminatory, transparent and coordinated processes across all TSOs and borders
- Provide maximum tradable capacity ( $\geq 70$  with MACZT framework, barring certain exceptions), while respecting operational security limits

The calculation will follow the Core flow-based methodology, with new provisions for the network constraints of Italy and the handling of Swiss borders – visualised on the next slide

### What to expect for Market Parties

- Outputs delivered to NEMOs:
  - Final flow-based parameters (PTDFs + RAMs) for each hour
  - Publication of CNECs, applied constraints and explanatory reports
- More consistent and harmonised rules across Europe (Italy North now also flow-based)
- Greater accuracy for the SDAC regarding available network capacity



### 3. Day-Ahead Capacity Calculation

CE DA CCM: High-Level concept for CH integration

CH fully integrated until and including validation phase

- Equal rights and responsibilities
- CH CNECs are considered, CH Remedial Actions are optimised, 70% needs to be reached on CH CNECs, CH IVAs can be set

Split CH Extraction Domain using a fair sharing key (RSK)

- CH Share of RAM is calculated for each CNEC

Improved NTC Extraction

- Calculates CH NTCs in market-likely direction
- Ensures fair share is reached on average
- Considers CH>IT allocation constraints

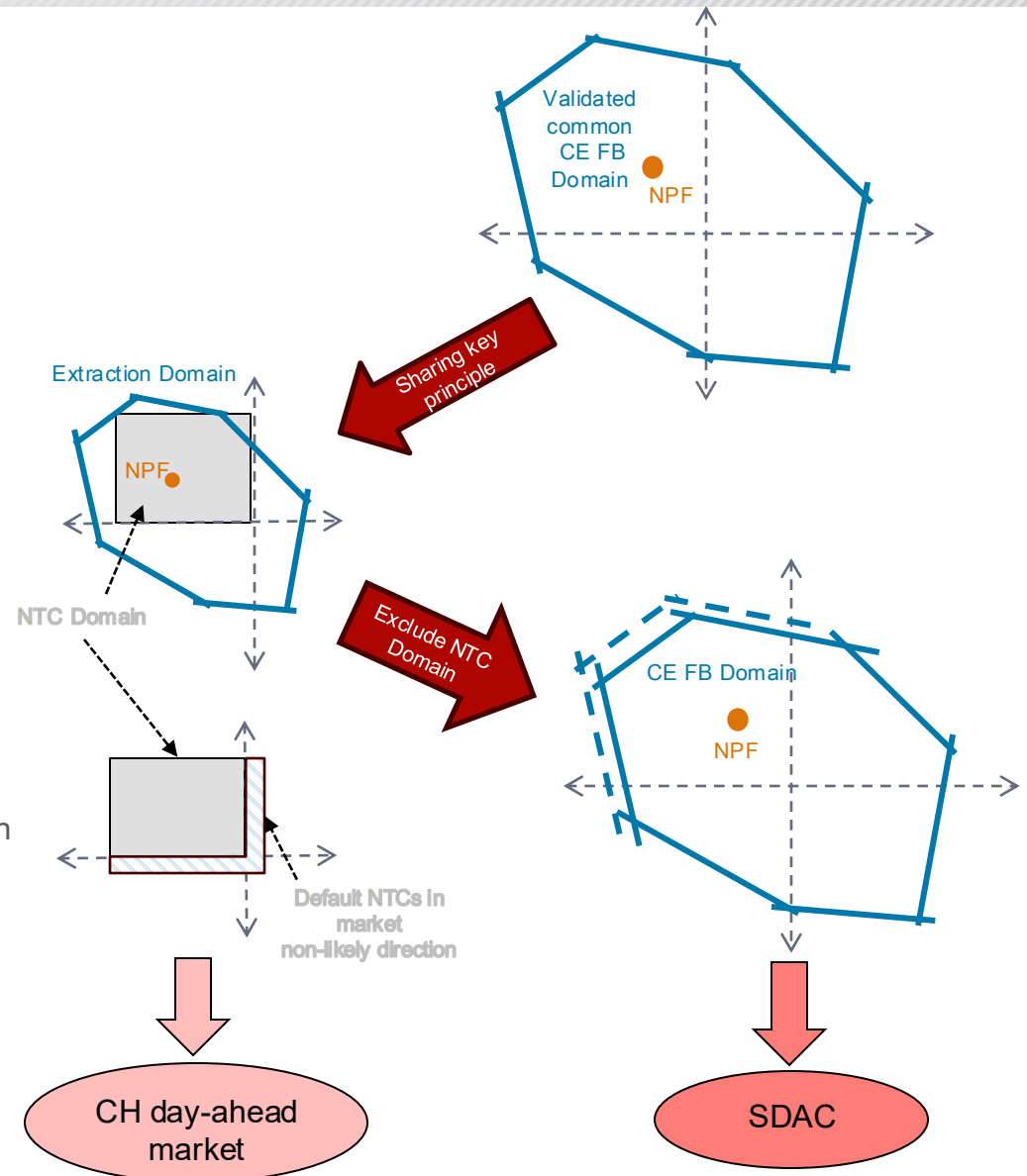
Consideration of CH NTCs

- Calculated CH NTCs are considered in finale CE-Domain by reducing RAM by respective impact of CH NTCs

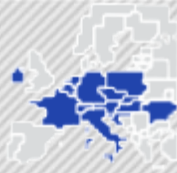
CH NTCs are provided for CH day-ahead market

- Calculated CH NTCs + default NTCs for market non-likely direction

Final CE FB Domain is provided to SDAC



### 3. Day-Ahead Capacity Calculation



#### CE DA CCM: Looking ahead

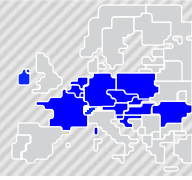
The 1<sup>st</sup> amendment of the CE DA CCM is foreseen in July 2026 (18 months following the initial submission)

- The update of remaining cross-zonal capacities after SDAC to be used for intraday will be amended to address any incompatibility with SIDC, Core ID CCM and Italy North ID CCM
- Further, the proposed 4th amendment to the Core Day-Ahead Capacity Calculation Methodology will be considered

For CH integration, the following parameters will be assessed during the //Run:

- The Relative Sharing Key (RSK) for splitting of Remaining Available Margin (RAM) between CE and CH
- The consideration of a potential relieving effect of NTCs

The first results regarding the impact on the market is expected to be made available during the External //Run (Q3 2027)



### Introduction

#### Reminder

- In line with feedback from Core NRAs, Core TSOs stopped earlier in 2025 the temporary ATC-extraction track.
- Core TSOs are committed to **go-live with a FB capacity calculation process in November 2026 for yearly auction 2027 (with LT FBA)**.
- As per request of Core NRAs and ACER, Core TSOs worked on **measures to improve the LTCC flow-based domain** as input for the flow-based allocation.

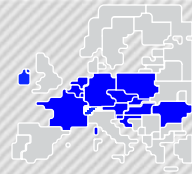
#### Status

- An amendment to the Core LT CCM is being prepared to accommodate the improvement. The improvement is the tuning of the FB domain to a benchmark largely based on historical offered capacities
- Associated amendments to Core DA CCM and Core ID CCM as removal of LTA inclusion is a key enabler
- Core TSOs aim to launch the External parallel run at the end of November 2025. The tuning of the FB domain to include a historical benchmark will be included.

#### Core TSOs present to the following topics:

- LTCCM Amendment proposal and deep dive into the benchmark application.
  - Explanation of LTCCM amendment proposal and the concepts it aims to introduce.
  - Reasoning and explanation of the historical benchmark application and how the concept fits the LTCC process.
- Outline of External // Run plan, objectives and schedule
- Update on Core LTCC roadmap and key milestones including upcoming stakeholder engagement events.

Market participants feedback on the presented topics, namely benchmark application and LTCCM amendment and EXT // Run planning will be highly appreciated.



### Rationale for the improvement

Improvement package: increase FB domain through benchmark + removal of LTA inclusion

Adjustment the FB domain to reach a benchmark **largely** based on historical offered capacities – *form of “historical ATC inclusion”*

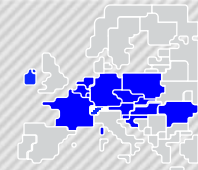
- Provide stability in the offered volumes for hedging whilst transitioning to a flow-based allocation
- Benchmark aligned with NRAs and ACER
- Benchmark also contains a maximum cap to mitigate unwanted financial exposure.

Removal of LTA inclusion from the day-ahead capacity calculation and the intraday capacity calculation (IDCC\_A) processes

- Purpose: decouple LTCC process from operational security and shift to financial products.
- Foreseen in the 4th proposal for amendment of the DA CCM and the 5th proposal for amendment of the ID CCM
  - LTA inclusion was introduced in a context without minimum capacity requirements in day-ahead capacity allocation. This context changed completely with the implementation of the min. 70% requirement.

### Paradigm shift

- **Old paradigm:** maximize “capacities” subject to operational security
- **New paradigm:** financial forward market → Trade-off how much DA congestion income to use to enable hedging.



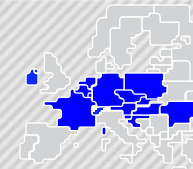
## Overview of LTCCM amendment

### Introduction

- Core TSOs have prepared an amendment to the LTCCM to introduce improvement measures and to accommodate the LT CC technical concept of historical benchmark introduction in the LTCC process.

The LTCCM Amendment proposal [\[LINK\]](#) introduces a new step to the FB CC process to reach historical ATC benchmark values as well as further amendment for EirGrid integration and several minor points to ensure consistency of the methodology.

	Title	Description	Proposed changes
	<b>Whereas</b>	Overarching explanation	Introduction to specify why amendment is being introduced and what the aim is.
<b>ALREADY PROPOSED</b>	<b>Article 11</b>	HVDC integration	Removal of phrase "in case of a planned outage of the HVDC interconnector, the MPTC shall be set to zero". Amendment needed to match the reality foreseen for implementation: simulations show the outages of an interconnector leads to 0 MW values. Similarly to the current set-up, reduction periods will be used instead. Core TSOs already explained this to ACER in 2024.
	<b>Article 16</b>	Fallback procedures	Amendment needed to take into account experience and simulations showing that using the preceding monthly auction will lead to more up-to-date and accurate results. Core TSOs already explained this to ACER in 2024.
	<b>Article 20</b>	Publication of data	Mention of "zone-to-zone PTDF" to be changed to "zone-to-slack PTDF" for consistency with DA. Reference to Council Directive 2008/114/EC that is no longer in force needs to be updated to refer to the new act: Directive 2022/2554.
	<b>Article 22</b>	Timescale for implementation	Paragraph (c) to be changed to "implementation by the following deadlines : November 2026"
	<b>Article 10a</b>	Benchmark adjustment	Description of ATC benchmark setting in accordance with regulatory guidance to produce FB CC results similar to historical outputs.
<b>NEW</b>	<b>Article 14</b>	Computation of RAM	Description of RAM adjustment on CNEC level to achieve historical ATC benchmark.
	<b>Article 15</b>	Consideration of Non-Core CCR Bidding Zone Borders	Core TSOs alignment of implementation timeline of Core AHC and LTCC go-live. Linking of the assessment to the LTCC go-live and not Core AHC go-live, as time might be limited.
	<b>Article 20</b>	Publication of data	Addition of ATC benchmark values as publication requirement.
	<b>EirGrid inclusion (5+ articles)</b>	EirGrid-related changes	Changes to Art 2, 11, 13, 14, 20, 22 needed to include another synchronous area into the capacity calculation to definitions, slack nodes, GLSK provision (in case amendment for the technical solution is not supported – to be submitted as a separate amendment)
	<b>Annex 1</b>	ATC benchmark	2025 ATC benchmark values included in the annex.



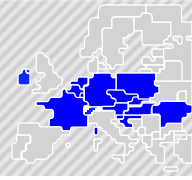
Deep-dive on the benchmark: reference, solution for revenue adequacy, technical concept

The historical benchmark values for the yearly and monthly LT capacity calculation are based on 2025 yearly and 2025 seasonal average monthly ATC values which will serve as inputs to the capacity calculation process.

- In the capacity calculation, a new process step has been introduced (RAM adjustment on CNEC level) to produce a FB domain that is capped by MinATC and MaxATC values per border to accommodate the 2025 historical benchmark for all borders.
- For majority of Core borders the yearly and monthly benchmark is defined based on historical offered capacities in 2025
  - Yearly calculation: ATC historical capacities offered in 2025 yearly auction
  - Monthly calculation: ATC historical seasonal average capacities offered in 2025 monthly auctions
- **Specific cases:**
  - For DE-AT borders the historical benchmark reflects regulatory guidance for capacities to be **50% of historical values**.
  - For Polish borders benchmark is not applied as per original regulatory guidance but will be subject to national regulatory feedback and shall be included in the final submission.
  - For borders applying the Physical transmission rights (PTRs), HR-SI, the benchmark is set to 500 MW for yearly and 150 MW for monthly.
- The benchmark values will be included in the LTCCM 1st amendment and regularly published as part of the operational process.
- For the yearly calculation, the MinATC and MaxATC values will be further adjusted along the process (multiplied by 1,25) to mitigate splitting effect on the resulting domain defined by the benchmark.
- Core TSOs assessment of the benchmark application and its effect is linked to the LTA inclusion removal and the aim to maintain revenue adequacy and proportionality of LT capacities to DA.

### Disclaimers related to the ATC benchmark values:

- Nov-Dec 2025 values are not yet available and shall be included in the final LTCCM 1<sup>st</sup> amendment submission in Nov 2025.
- These ATC benchmark values as input to the LT CC process do not guarantee that the historical capacities will also be finally allocated in the LT FBA.



Deep-dive on the benchmark: reference, solution for revenue adequacy, technical concept

Based on the current improvement proposal, in the LTCC technical concept, RAMs are modified during the capacity calculation to produce a resulting domain that accommodates the benchmark Min and Max ATC values.



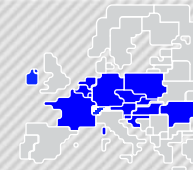
### Initial setting: Benchmark definition process

- MinATC and MaxATC for the yearly and monthly calculation shall be defined within the central tooling as follows:
    - $\text{MinATC} = \text{Benchmark ATC} * 0.90$
    - $\text{MaxATC} = \text{Benchmark ATC} * 1.1$
1. Induced flows are calculated for each CNEC based on a MinATC and MaxATC value (**2025 historic yearly and 2025 seasonal average of historic monthly ATCs**), after which the RAMs are adjusted based on the induced flows:
    - If  $\text{RAM}_{bv} < \text{minInducedFlow}$ :  $\text{RAM}_{bv} = \text{minInducedFlow}$
    - If  $\text{RAM}_{bv} > \text{maxInducedFlow}$ :  $\text{RAM}_{bv} = \text{maxInducedFlow}$
    - Else:  $\text{RAM}_{bv}$  shall not be adjusted
  2. The output of the FB CC (after splitting) then results in capacities within the range of historical ATC values.

The introduction of the MaxATC benchmark is linked to the revenue adequacy and CID consideration, in the context of LTA inclusion removal and removing the LT link with operational security.

- After LTA inclusion is removed, CI will be socialized for all TSOs, and LT CC will be decoupled from the physical market.
  - The MaxATC benchmark ensures that the LT remuneration remains within the merits of historical values, and that the DA+LT CI is sufficient to cover these remunerations.
- Core TSOs conducted a revenue adequacy assessment to demonstrate the effect of the benchmark introduction with “floor” and “cap” values that will mitigate financial risk exposure for TSOs (see next slide).

## 4. Long-term capacity calculation



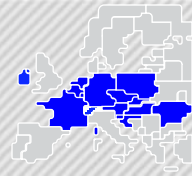
Deep-dive on the benchmark: reference, solution for revenue adequacy, technical concept

The application of the Min and Max ATC benchmark in LT ensures proportional use of DA CI for remunerations of LTTRs, thereby securing revenue adequacy.

- Core TSOs assessed post-allocation results based on comparison of historical values, MinATC and MinMaxATC Scenario (all data from 2024) to showcase the relation between DA CI, LT CI and resulting revenue adequacy.

	Total Gross DA CI	Total LT CI	Total LTTR remuneration (Y+M)	Result
<b>Historical values</b>	€ 1 925 000 000 (with LTA)	N/A (Only DA CI is used for LTTR Remuneration)	€ 1 500 000 000 (77,6% of gross DA C)	<ul style="list-style-type: none"> <li><b>906 hours</b> when LTTR remuneration was higher than gross DA CI</li> </ul>
<b>MinATC</b>	€ 1 874 418 459 (without LTA)	€ 1 206 884 082	€ 2 067 593 979 (110 % of DA CI without LTA inclusion)	<ul style="list-style-type: none"> <li>Final Net CI € <b>1 020 233 006</b></li> <li><b>4394 hours</b> in which Gross DA CI would not be sufficient to cover LTTR Remuneration</li> <li>When considering LT CI the number of hours is <b>1148</b></li> </ul>
<b>MinMaxATC</b>	€ 1 874 418 459 (without LTA)	€ 927 439 233	€ 1 364 522 146 (73 % of DA CI without LTA inclusion)	<ul style="list-style-type: none"> <li>Final Net CI d € <b>1 441 322 985</b></li> <li><b>2151 hours</b> in which Gross DA CI would not be sufficient to cover LTTR Remuneration</li> <li>When considering LT CI the number of hours is <b>165</b></li> </ul>

## 4. Long-term capacity calculation



Deep-dive on the benchmark: reference, solution for revenue adequacy, technical concept

The LTCCM amendment proposal envisages a mechanism for an annual update of the ATC benchmark values in case the 2025 values do not deliver expected effects (i.e. disrupted revenue adequacy, significant changes in the topology etc.).



### Benchmark review process loop

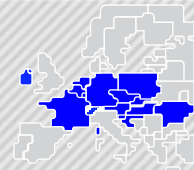
- Based on common TSO agreement each TSO may review and, where appropriate, adjust the 2025 benchmark ATC values on an annual basis, considering evolving internal and external circumstances
- Adjustment of benchmark will be subject to Core TSO approval before the yearly calculation.

The review process requires clarification for the final submission related to:

- Specific criteria for the update of the benchmark
- Timing and procedure for update
- NRA involvement in the review process.

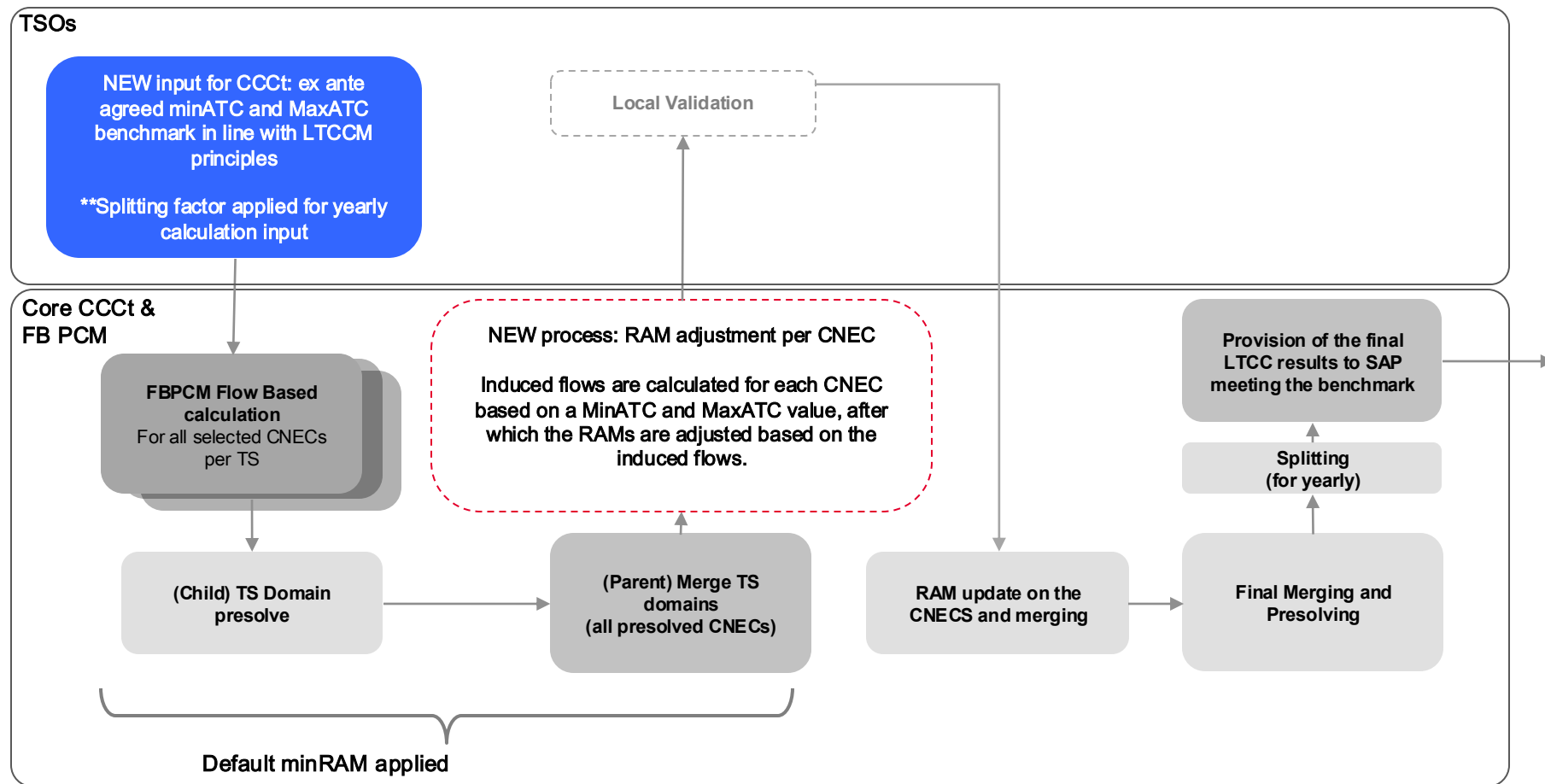
Updated benchmark values will be published as per standard publication process to ensure transparency towards the market parties.

# 4. Long-term capacity calculation

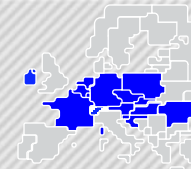


## LTCC implementation timeline – technical concept

### Benchmark Application in the LTCC process chain:



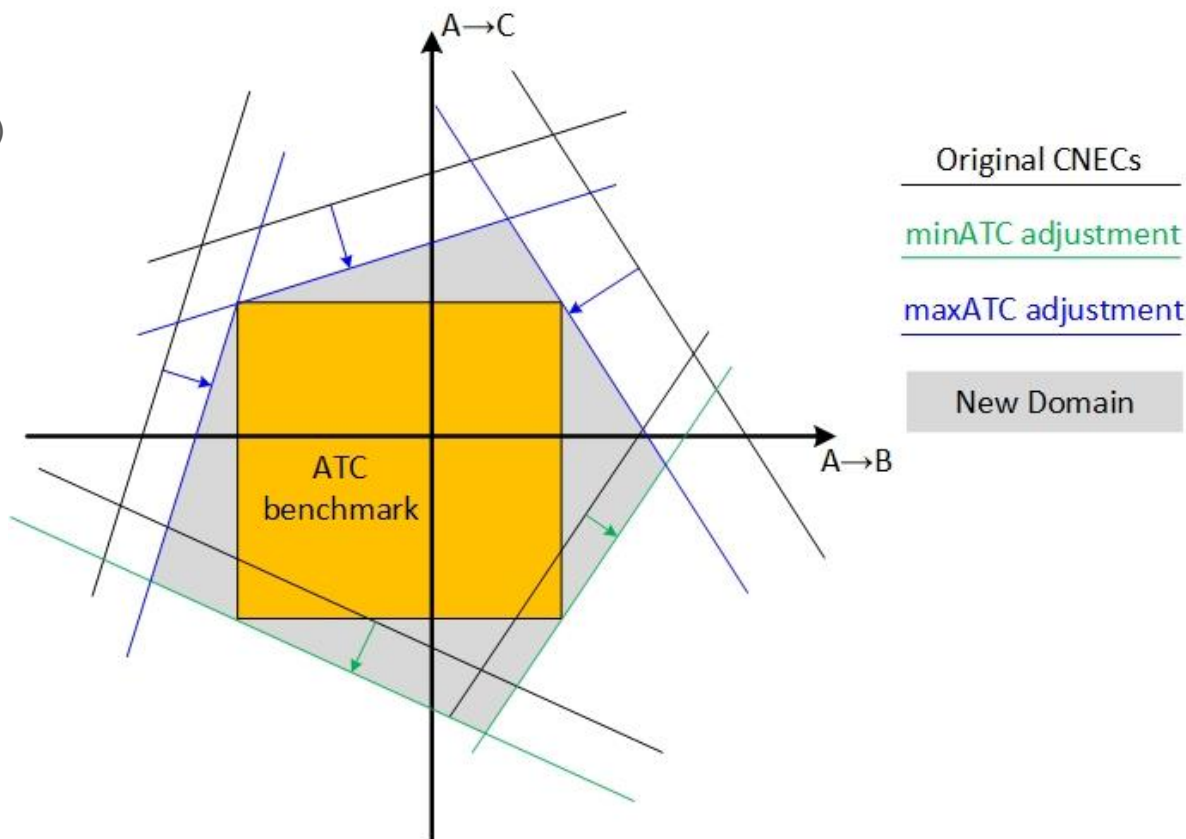
## 4. Long-term capacity calculation



Deep-dive on the benchmark: reference, solution for revenue adequacy, technical concept

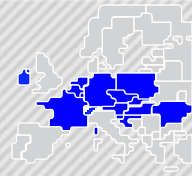
### Benchmark application

- In MinATC:
  - $RAM_{new} = \max(RAM, flow\_by\_ATC)$
  - FB Domain gets increased
- In MinMaxATC:
  - $RAM_{new} = flow\_by\_ATC$
  - FB Domain gets in- and decreased



The resulting FB domain shall accommodate the historical benchmark on all borders to ensure sufficient hedging volumes offered for allocation.

## 4. Long-term capacity calculation



### LTCC implementation timeline and key milestones

#### Key milestones until end of 2025

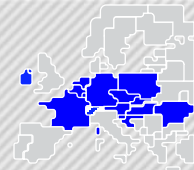
- Until 22/10: LTCCM amendment Public Consultation [[LINK](#)]
- November 2025: LTCCM submission to NRAs for approval
- End of November: launch of External // RUN with yearly computation
- Beginning of December: All TSO workshop on LT FBA and LTCC

#### Core TSOs aim to meet the following preconditions to begin the LTCC EXT//run in November 2025

- **October 2025:**
  - Finalisation of EXT // Run plan
  - Finalised IT implementation and testing
- **End of October:** analysis PC and NRA feedback on LTCCM
- **Beginning of November:** TSO submission of the LTCCM 1<sup>st</sup> amendment for NRA approval
- **17-24/11:** Foreseen start of LTCC EXT//run with LT FBA

The regulatory approval processes for the LT CCM amendment and related DA & ID CCM amendments are conducted in parallel to the EXT//run. Should the regulatory approval process lead to a change in requirements it will have to be assessed into which extent the EXT//run can be adapted for it.

# 4. Long-term capacity calculation

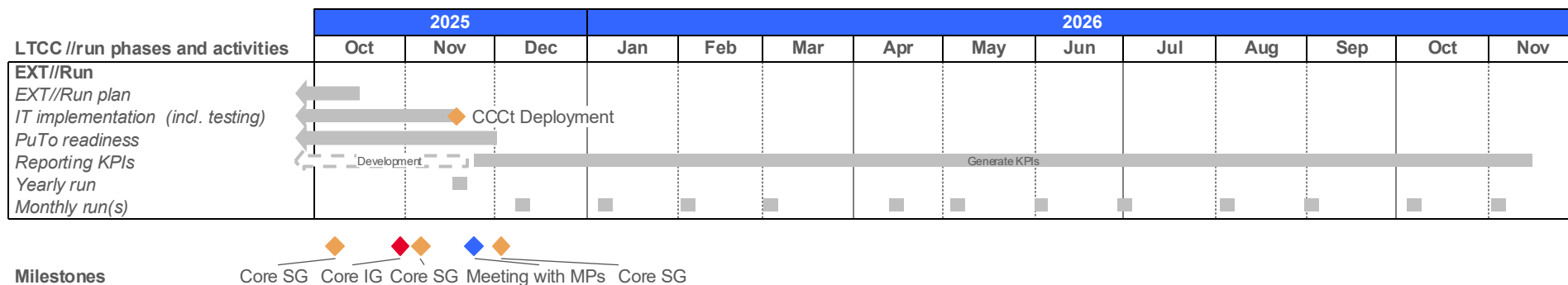


## Introduction of EXT//run setup

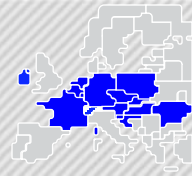
### Introduction

- Core LTCCM Art. 22 defines the timescale & steps for implementation of the // run:
  - An EXT // run during which the Core TSOs and the Core CCCT shall continue testing their internal processes and IT tools and infrastructure. In addition, the Core TSOs shall involve the SAP to test the implementation of this methodology, and market participants to test the effects of applying this methodology to the market and allow them to adapt their processes.
  - Following the previous alignment with MPs and ACER/NRAS the proposal is to ensure sufficient time for the EXT // Run to cover the **longest possible period** (12 months).
  - The EXT // run is planned to cover **key activities**:
    - Yearly and Monthly CC and Publication of results on the JAO platform (PuTo and website)
    - Mimic the operational conditions for CC and run the full chain with LT FBA (and publication of allocation results).

### HL timeline



Market participants will be provided more detailed information about detailed set-up and schedule of the EXT// RUN, frequency and scope of data publication during the dedicated upcoming workshop organized by all TSOs. The workshop at the beginning of December will cover: LT FBA planning, processes & update from Core and Nordic LTCC on simulations, planning and EXT// RUN.



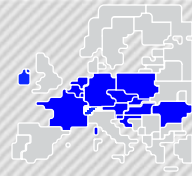
## Introduction

### Introduction

- A series of topics have been included in the 4<sup>th</sup> amendment of the Core DA CCM submitted for Public Consultation on 22/09
- Core TSOs included the removal of LTA inclusion in the amendment
- Timeline
  - 22/10 – Public consultation finalised
  - Early December 2025 – Submission to Core NRAs

### Objectives for today's discussion

- Present to MPs considerations around the removal of LTA inclusion including:
  - Analysis on the alpha factor with 2025 SDAC results
  - Results of ACER's simulations of different cross-zonal capacities scenarios in the Core CCR and associated socio-economic welfare
  - Solution put forward in the DA CCM 4th amendment
- Inform MPs about the 4th Amendment of the Core DA CCM submitted for Public Consultation
- Present to MPs a status update on AHC



## Analysis on the alpha factor with 2025 SDAC results

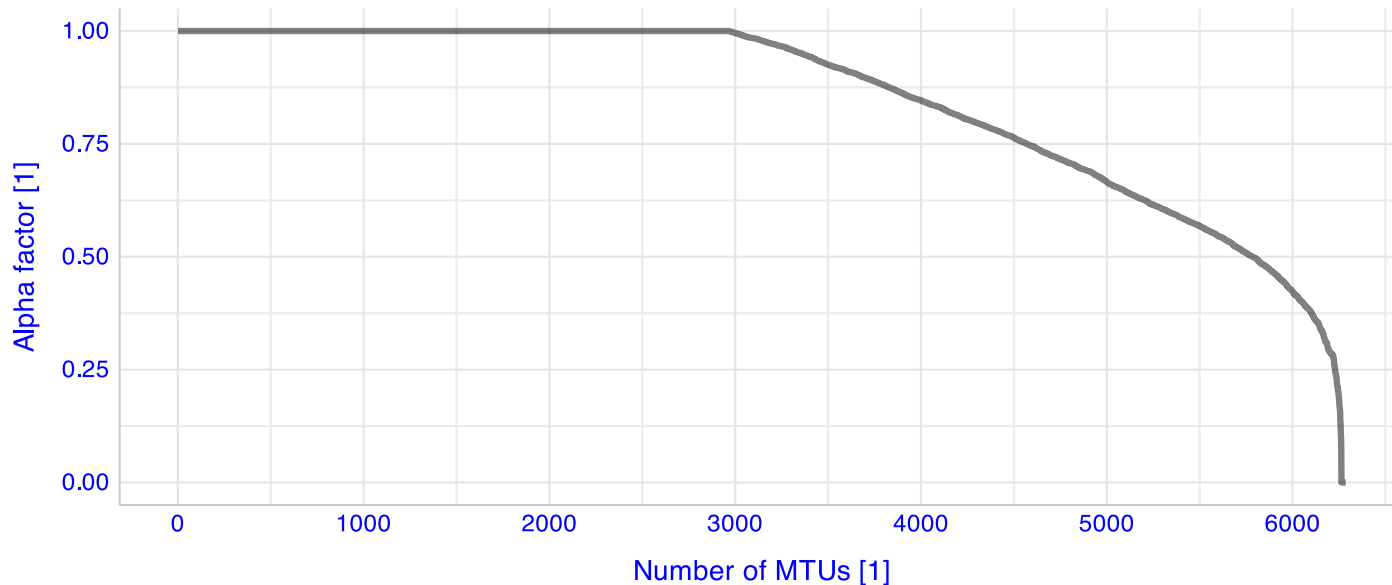
### Reminder

- At the last Core CG (27/05/2025), market parties requested for TSOs to present an analysis on the alpha factor with 2025 SDAC results
- Reminder: The alpha factor represents the share of cross-zonal capacity allocated from the flow-based domain and LTA domain (0 only LTA domain, 1 only flow-based domain)

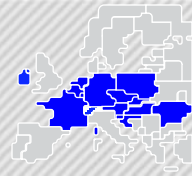
### Observations

- Date source: JAO Publication tool; Data range from 01/01/2025 to 19/09/2025 - a total of 6286 MTUs
- In 2025, the alpha factor was 1 (use of flow-based domain only) about 50% of the MTUs
- No sustained occurrence of alpha factor of 0, which would constitute situations with the LTAs offering a higher level of cross-zonal capacities than the flow-based domain

### Alpha factor in 2025



## 4. Day-Ahead Capacity Calculation – Removal of LTA Inclusion



ACER simulations of different cross-zonal capacities scenarios in the Core CCR

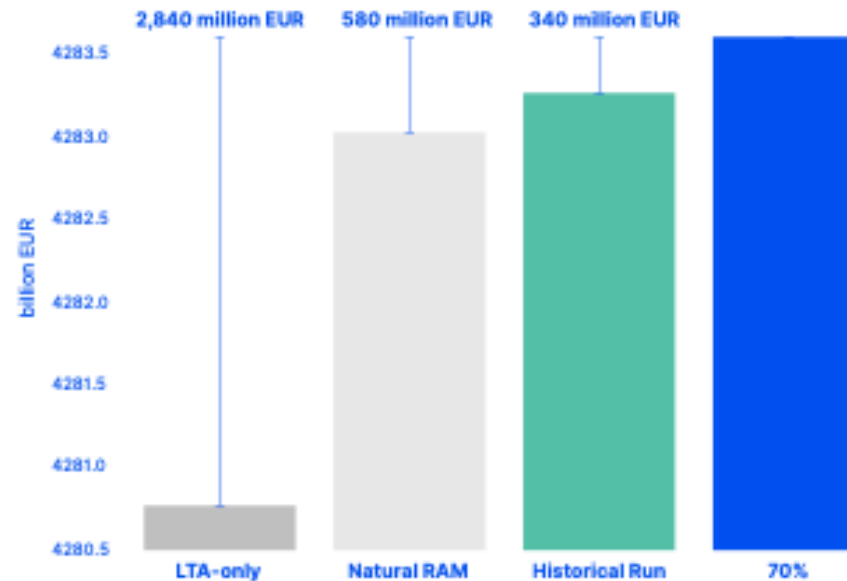
ACER published its [2025 Monitoring Report on electricity cross-zonal capacities and congestion management](#) on 05/09

- ACER simulated different cross-zonal capacities scenarios in the Core CCR and assessed socio-economic welfare (SEW)

### ACER's findings and takeaways

- The vast share of economic surplus in SDAC comes from the flow-based domain

Figure 6: SDAC economic surplus in 2024 under different cross-zonal capacities scenarios in the Core CCR – 2024 (billion EUR)



Source: ACER simulation based on Simulation Facility.

# LTA Inclusion Removal (1/2)

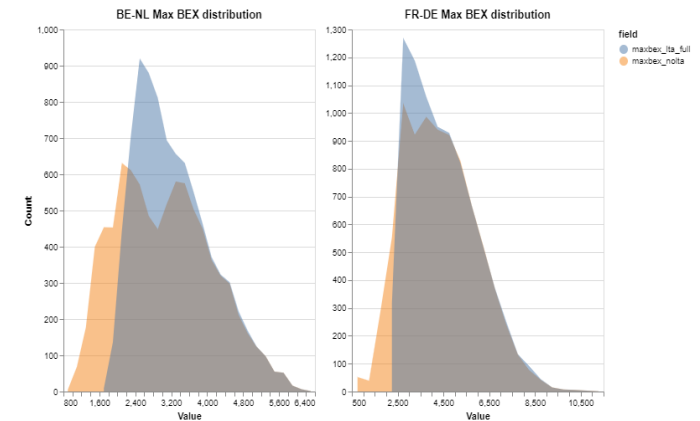
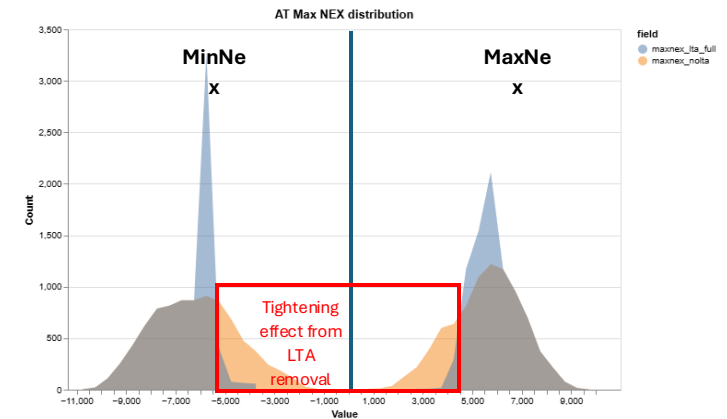
In the context of the LTA inclusion removal assessments, TSOs concluded that LTA's impact on SDAC is currently limited. Market participants would like to draw the TSOs' attention to the following remarks:

## Alpha factor studies

- When considering the alpha factor, any value smaller than 1 indicates that the LTA domain contributed to increase social welfare. Therefore, **removing LTA will have a negative impact on all those hours where the alpha factor is <1**, meaning ~45% of 2024.
- Regarding ACER's study on SDAC's economic surplus, the results for LTA **refer to the economic surplus of the LTA domain alone (ie. Alpha=0)**. It is an unrealistic situation in which DFP are always applied.

## MaxNex and MaxBex

- A more complete assessment of LTA inclusion removal impact can be done by looking at **MaxNex distribution rather than mean and lowest value**.
- When looking at maximum bilateral exchanges, **some reductions are seen also in borders not interested by political agreements**.



# LTA Inclusion Removal (2/2)

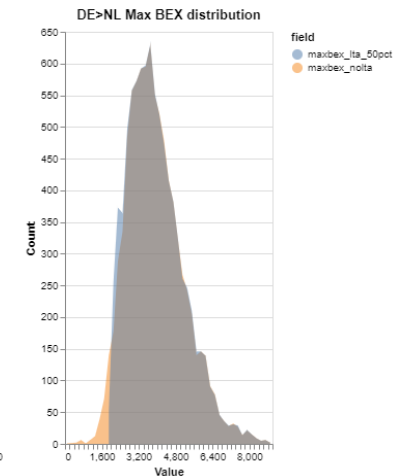
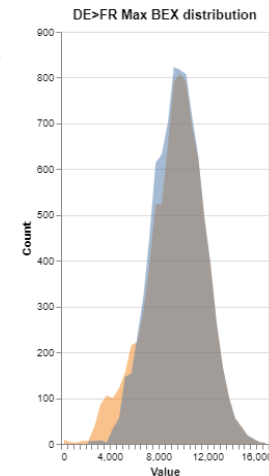
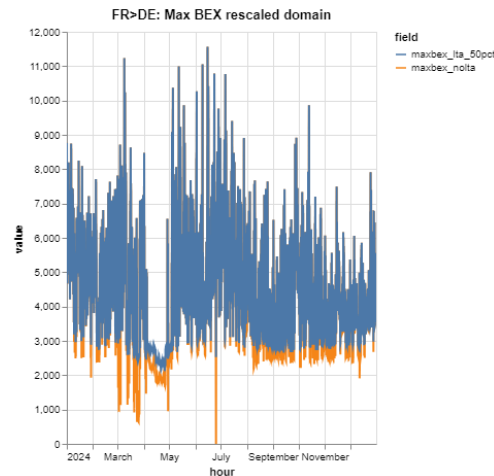
Since this topic is to be contextualized along with 70% MinRAM, Market Participants assessed the impact of LTA removal inclusion in the scenario where 70% MinRAM is achieved by all TSOs.

## Assumptions

- 70% MinRAM achieved by all TSOs.
- DE<>AT LTA reduced to 50% of historical values.
- IVA levels assumed constant (in absolute values) to 2024.

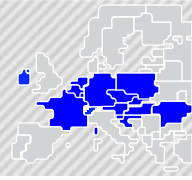
## Methodology

- Rescale 2024 FB domain to 70% MinRAM
- Apply IVA
- Extract MaxNex and MaxBex for FB only
- Extract MaxNex and MaxBex for FB + 2024 LTA (50% of DE-AT)



Even with full achievement of 70% MinRAM, **LTA's impact on the enlarged DA domain is still significant**, also for borders not involved in any political agreement.

## 4. Day-Ahead Capacity Calculation – Removal of LTA Inclusion



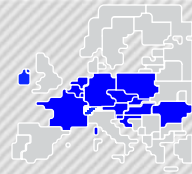
Solution put forward in the 4th proposal for amendment to DA CCM

### Background

- LTA inclusion is performed via the Extended LTA Inclusion (ELI), where both the Core flow-based domain and LTA domain are provided to SDAC/Euphemia
- The removal of LTA inclusion is an underlying assumption in all ENTSO-E & ACER models for a revised forward market design
- During the Core CG (27/05), Core TSOs presented an impact analysis of the removal of LTA inclusion on day-ahead cross-zonal capacities
- Proposals for substituting all uses of LTAs and handling of PTR borders have been developed

### Objective

- Core TSOs to present the proposals for substituting uses of LTA in Core DA CC (numbering below in line with following slides)
  1. Happy Flow
  2. Default flow-based parameters (DFPs)
  3. Shadow Auction ATCs (SA ATCs)

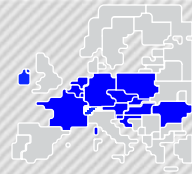


### 1. Ensuring minimum level of CZCs in happy flow

- Reminder: LTAs serve as backstop when high IVAs reduce the size of the FB domain
  - Similar as is the case for validation fallback, for which a minimum RAM of  $20\% * F_{max}$  has been agreed
- Approach: Ensure minimum RAM level in final computation
  - minimum RAM of  $20\% * F_{max}$  will be re-applied in final computation after validation and long-term nominations to
    - Cap the effect of IVAs that would reduce RAM below 20% of  $F_{max}$ , and
    - Ensure RAM of at least  $20\% * F_{max}$  on top of long-term nominations
  - This  $20\% * F_{max}$  floor may only be not respected in exceptional grid situations when operational security cannot be maintained
    - **A market message on JAO will be issued when the  $20\% * F_{max}$  floor cannot be respected**
- Note: LTA inclusion via  $LTA_{margin}$  has been removed altogether, as there is no use case for this approach anymore

### Attention point: Long-term nominations on bidding zone borders with PTRs

- Reminder: SI-HR and RO-BG (the latter relevant with AHC) issue PTRs, other bidding zone borders issue FTRs
- PTRs give holders the right to nominate them (fully or partially), resulting in long-term nominations (LTNs)
- LTNs are accounted for in the final flow-based computation step (post LTN deadline at 08:30/09:00 D-1)
- To not risk very low level of cross-zonal capacity or even de-facto isolation of HR or BG, 20% minRAM are applied again after accounting for LTNs
- This ensures RAM of at least  $20\% * F_{max}$  of RAM are available for SDAC and prevents bidding zone isolation
- Rules for exceptional grid situations apply as above



## 2. Substitute for DFPs: Computation of fallback flow-based domain based on statistical assessment of historical domains

- Reminder: LTAs are basis for DFPs today
  - Note: ACER invited Core TSOs to investigate a different approach to DFPs (see next slide)
- Idea: Define DFPs such that any MCP in the DFP would have been contained in x% (e.g. 95%) of the historical flow-based domains
- Analogy in single dimension, i.e. in a case with only one border:
  - Default NTC =  $Q_{NTC, historical}((100-x)\%)$ , e.g. 5% quantile of historical NTCs
- In an n-dimensional flow-based domain, there is no easy/feasibly possibility to formally compute such “geometric quantile”.

- **Pragmatic approach: Constraint selection**

- **Algorithm with free parameters  $x_1$  and  $x_2$**

1. Collect “important CNEs”, e.g. CNEs with pre-solved CNECs in more than  $x_1\%$  of hours
2. Construct one “representative CNEC” for each such CNE
  - Collect all pre-solved CNECs associated with the CNE
  - Normalise each CNEC:  $PTDF_{norm} = PTDF/|PTDF|$ ;  $RAM_{norm} = RAM/|PTDF|$
  - Compute a representative direction as  $PTDF_{rep}$ :  
e.g. arithmetic mean of normalised PTDFs of all CNECs, then again normalised
  - Compute conservative RAM: Low quantile of the normalised RAM:  $RAM_{rep} = Q_{RAMnorm}(x_2\%)$
  - Representative CNEC consists of  $PTDF_{rep}$  and  $RAM_{rep}$
3. Preliminary DFPs are the union of all representative CNECs
4. Pre-solve → removal of redundant representative CNECs
5. Check for unboundedness → if unbounded, reduce  $x_1$  to add more CNEs → go back to step 1
6. Final DFPs have been determined (pre-solved and bounded)

Frequency threshold

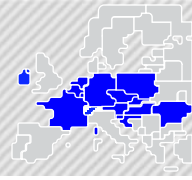
RAM percentile rank

This is the main parameter to define the operational security risk level of the new DFPs

- **This approach is to be applied on the Core day-ahead flow-based domains of one year**

- Full consideration of historically offered RAMs, including AMR and IVA
- Re-computation at least on a monthly basis
- Possibility for TSOs to validate DFPs to consider planned outages not present in the past

## 4. Day-Ahead Capacity Calculation



### ACER's proposal for a different approach to DFPs

#### ACER published its 2025 Monitoring Report on electricity cross-zonal capacities and congestion management on 05/09

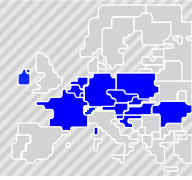
- ACER tested different parameters to create flow-based domains based on statistics and simulated market coupling for 25 June 2024

#### Findings

- “Figure 19 compares the potential outcomes, in terms of the economic surplus of the day ahead market, of the different market simulations performed with statistical flow-based domains, compared with the current fallback. This analysis shows that issuing fallback capacities based on statistical flow-based domains would have yielded up to EUR 13 million of economic surplus gains for the single trading day of 25 June 2024
- ACER “... invite Core TSOs to investigate a different fallback approach to the one currently in use”
- The DFP approach in the 4<sup>th</sup> amendment of the Core DA CCM is in line with this invitation from ACER

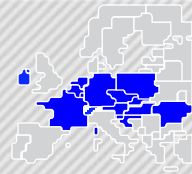
Figure 19: Economic surplus of SDAC under different statistical flow-based domains as an alternative to the current fallback process – 25 June 2024 (million EUR)





### 3. Substitutes for SA ATCs → ATCs for SDAC fallback

- Reminder: LTAs are basis for SA ATCs today
- Depending on the triggering situation, different approaches are needed.
  - Fallback flow-based domain based on statistical assessments
  - ATCs extracted from this fallback FB domain, using a standard (iterative) ATC extraction algorithm
- **Treatment of bidding zones with Allocation Constraints (ACs) (c.f. Poland, later SEM)**
  - IF SDAC works (happy flow or CZC for CC fallback)
    - THEN ACs are submitted to SDAC → **No change due to removal of LTA inclusion**
  - IF SDAC fails (ATCs for SDAC fallback needed) AND Core Capacity Calculation tool works
    - THEN ACs are used as External Constraints (ECs) during the ATC extraction of ATCs of SDAC fallback (extraction from regular domain)
      - **No change due to removal of LTA inclusion**
  - IF SDAC fails (ATCs for SDAC fallback needed) AND CCCt fails
    - THEN
      - ATCs for SDAC fallback will be based on DFP domain and External Constraints, pre-computed the day before → **ECs outdated!**
      - To make sure that decreased EC from the previous to current BD is covered, **the Backup Tool must cap the ATCs of BZs with ACs pro rata to the EC (=AC) from the current BD**
      - The conservative nature of this approach is acceptable in the light of its small likelihood of occurrence

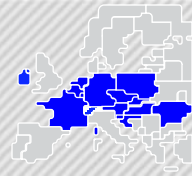


## DA CCM amendment: overview

An overview of the changes to the DA CCM in the 4<sup>th</sup> amendment are provided below

- [LINK](#) to the ENTSO-E page for Public Consultation

DA CCM 4 <sup>th</sup> Amendment Topic	Description of change
1 Changes due to Celtic interconnector	<ul style="list-style-type: none"> <li>• EirGrid/SONI listed as Core TSOs and allocation constraints (ramping constraint, net position constraint) for EirGrid/SONI to become part of the Core DA CCM</li> </ul>
2 Consideration of 110kV elements as CNECs after validation	<ul style="list-style-type: none"> <li>• The Core ID CCM and the CE DA CCM allow consideration of 110 kV network elements as CNECs during validation which is lower than 220kV (the current voltage threshold for CNECs)</li> <li>• The aim is to harmonise the Core DA CCM, Core ID CCM and the CE DA CCM</li> </ul>
3 Harmonized GLSKs (following GLSK studies)	<ul style="list-style-type: none"> <li>• The Core DA CCM requires GSK harmonisation as a 'post go-live study'. Two GLSK studies have been performed. (Note: generic "GSK" in CCM vs. internal use of "GLSK" is a pure wording topic without affecting the possibility to use of G and/or L nodes in the GSK.)</li> <li>• The aim is to adhere to the legal obligation to harmonise GSKs and reflect findings of GLSK studies</li> </ul>
4 Integration of new inner-German HVDC lines	<ul style="list-style-type: none"> <li>• DE TSOs are building several inner-DE HVDC lines, and these will constitute a remedial action</li> <li>• The aim is to ensure NRAO and CV can deal with intrazonal HVDC lines</li> </ul>
5 Correction of errors/mistakes	<ul style="list-style-type: none"> <li>• Core TSOs have identified a few minor errors/mistakes in formulas and references</li> </ul>
6 Removal of LTA inclusion	<ul style="list-style-type: none"> <li>• LTA inclusion is performed via the Extended LTA Inclusion (ELI), where both the Core flow-based domain and LTA domain are provided to SDAC/Euphemia</li> <li>• The introduction of LT CC and LT FBA can create operational security issues if LTA inclusion is maintained</li> <li>• The aim is to decouple LTCC from operational security (i.e., identify substitutes for all roles the LTA plays in Core DA CC currently, including for Default Flow-Based Parameters, Shadow Auction NTCs and minimum level of CZC in happy flow) <ul style="list-style-type: none"> <li>• Default flow-based parameters based on statistical assessment of historic FB domains</li> <li>• Shadow Auction NTCs derived from ATC extraction</li> <li>• 20%minRAM on top of long-term nominations during final computation ensure minimum level of CZC for SDAC, with possibility to go below in critical grid situations</li> </ul> </li> </ul>
7 Extension of PL allocation constraints	<ul style="list-style-type: none"> <li>• PSE sees the need to extend its allocation constraint (AC) on the PL SDAC net position. The extension requested is 2 years (the current AC extension period expires in the June of 2026, and a submission of extension is required 6 months prior to this date – end of 2025)</li> </ul>
8 Clarification of operational security limits	<ul style="list-style-type: none"> <li>• Align <b>Imax</b> definition with SO GL Art. 25(1) - removes wording inconsistency, maintains content</li> <li>• Physical <b>Imax</b> limits are wider than only thermal</li> </ul>



### Update on AHC

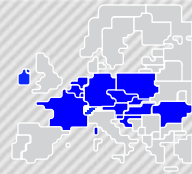
#### Reminder

- According to the Core DA CCM, Core TSOs shall:
  - By 31<sup>st</sup> of March 2025:
    - Have developed AHC
    - Have updated the explanatory note
    - Published an analysis that allows market participants to understand the impact of AHC
  - By 30<sup>th</sup> of June 2025:
    - Implemented AHC [...] The implementation is subject to the readiness of SDAC

#### Status Update

- Core TSOs' CC tooling has proven to run stably with AHC
- SPAICC-like run #4 report has been published on [JAO Website](#)
  - Generally, min/max net positions widen compared to standard hybrid coupling
  - Exchange possibilities on RO-BG more affected than other bidding zone borders, owing to highly meshed grid with strong influence of forecasts on non-EU bidding zone borders (e.g. Serbia)
- Core TSOs are in dialogue with SDAC/MCSC regarding the updated planning for Core AHC
  - Market topology has been agreed upon
  - FIT/SIT and SDAC tests are being planned. These are likely to take place in Q1 2026
- AHC go-live anticipated for Q2/2026 (Planning assumption: e.g. April 2026)
  - Note: Go-live date has not been confirmed by SDAC/MCSC
- After go-live of 15min MTU (30/09) a EUPHEMIA performance assessment on daily basis is required





#### Batch #1

- **2024-10-24** | high BG → RO and RO → HU exchanges in solar peak hours, weekday
- **2025-02-01** | high BG → RO and RO → HU exchanges in solar peak hours, weekend
- **2024-07-22** | high residual load in HU and RO, high BG → RO exchanges, weekday
- **2024-07-11** | high residual load in HU and RO, reduced BG → RO exchanges, weekday
- **2024-09-20** | high wind production in RO, high RO → BG exchanges, weekday and
- **2024-09-28** | high wind production in RO, high RO → BG exchanges, weekend
- **2024-12-12** | weekday, Residual load: CWE max

#### Batch #2

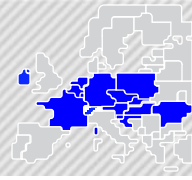
- **2024-12-23** | weekday, Residual load: CWE min
- **2024-12-27** | weekday, Residual load: CEE min, Core Net Position: CCWE min / CEE max
- **2024-10-05** | weekend, Residual load: CWE max
- **2024-12-21** | weekend, Residual load: CWE min
- **2024-11-16** | weekend, Residual load: CEE max
- **2024-12-26** | weekend, Residual load: CEE min, Core Net Position: CWE min / CEE max
- **2024-11-24** | weekend, Core Net Position: CWE max / CEE min

Picked for analysis on Slides of today. Full data available in Report on [JAO Website](#).

#### Batch #3

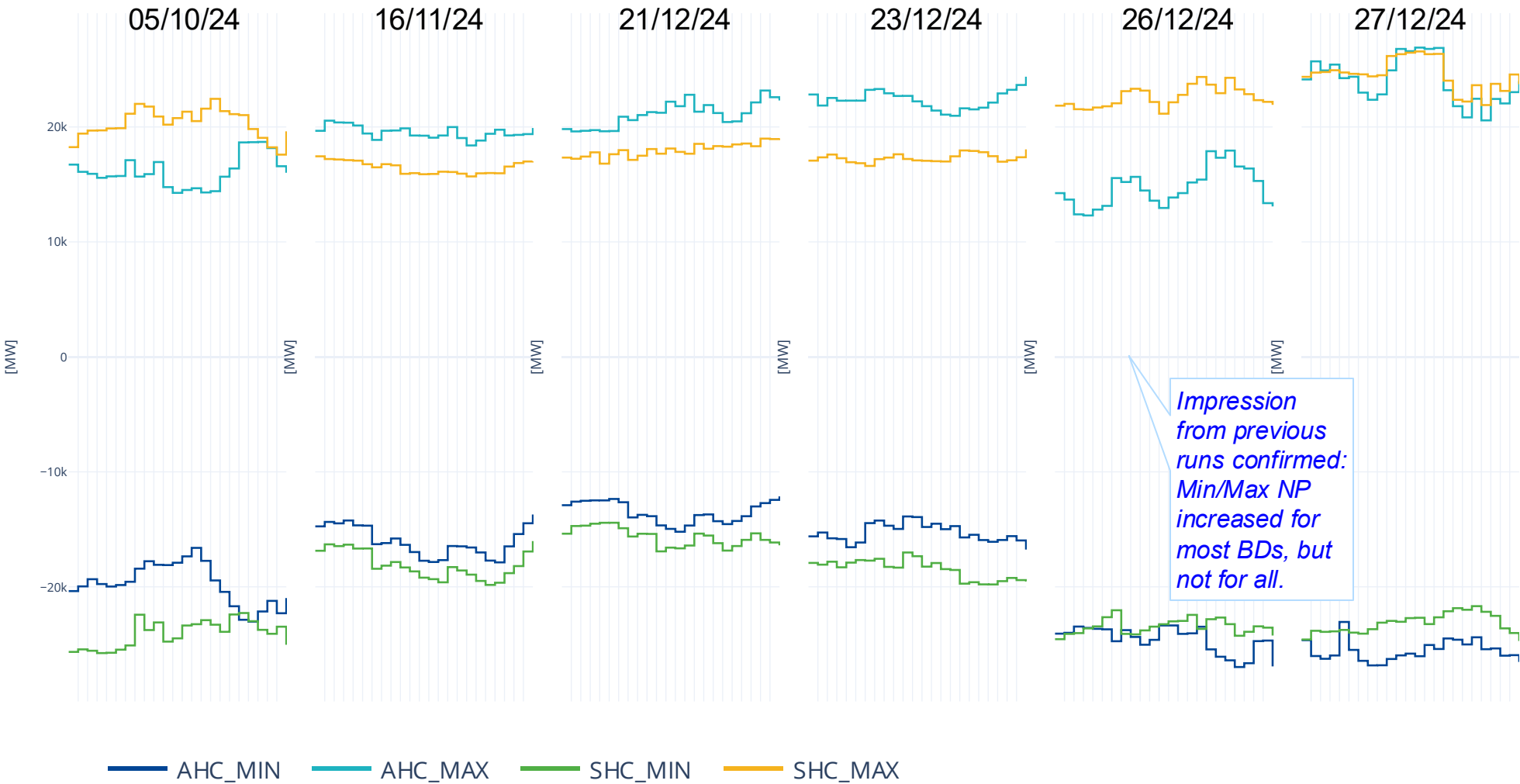
- **2024-11-03** | MP request replacing 2024-12-05 (weekday, Residual load: CEE max, Core Net Position: CWE / CEE min)
- **2025-01-06** | Core TSOs proposal, winter weekday with high wind
- **2024-11-06** | Core TSOs proposal, winter weekday with low wind
- **2024-09-27** | Core TSOs proposal, summer weekday with high wind
- **2024-08-06** | Core TSOs proposal, summer weekday with low wind
- **2024-11-23** | Core TSOs proposal, winter weekend with high wind
- **2024-12-28** | Core TSOs proposal, winter weekend with low wind

# 5. Day-Ahead Capacity Calculation – other topics

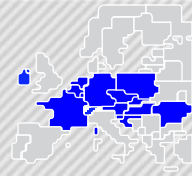


Min/Max NP in AHC SPAICC #4 for DE

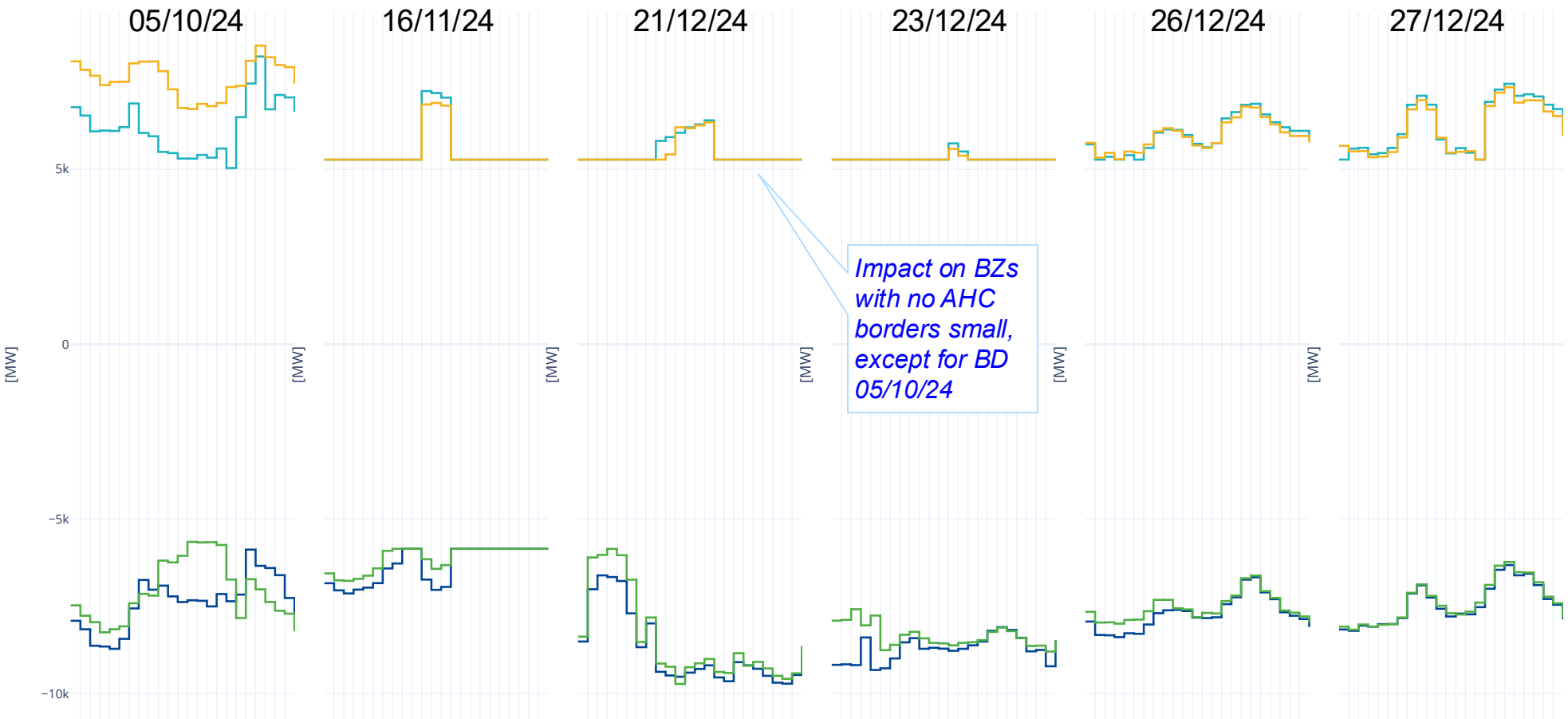
Pre-read



# 5. Day-Ahead Capacity Calculation – other topics

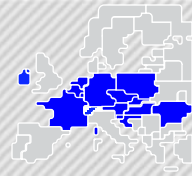


Min/Max NP in AHC SPAICC #4 for AT



— AHC\_MIN    — AHC\_MAX    — SHC\_MIN    — SHC\_MAX

# 5. Day-Ahead Capacity Calculation – other topics

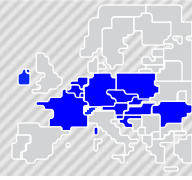


Min/Max NP in AHC SPAICC #4 for FR

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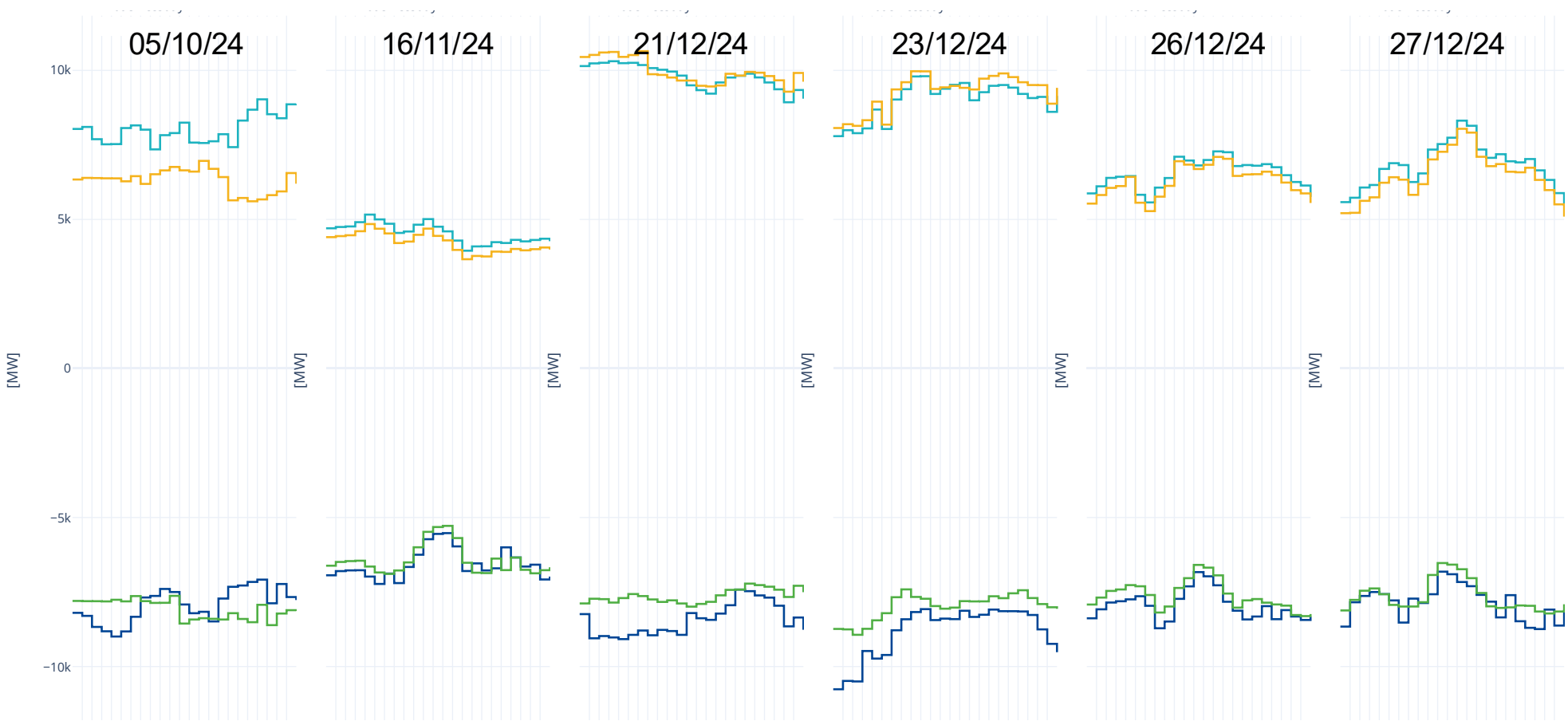


# 5. Day-Ahead Capacity Calculation – other topics



Min/Max NP in AHC SPAICC #4 for HU

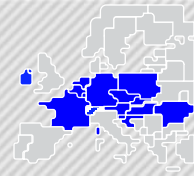
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— AHC\_MIN — AHC\_MAX — SHC\_MIN — SHC\_MAX

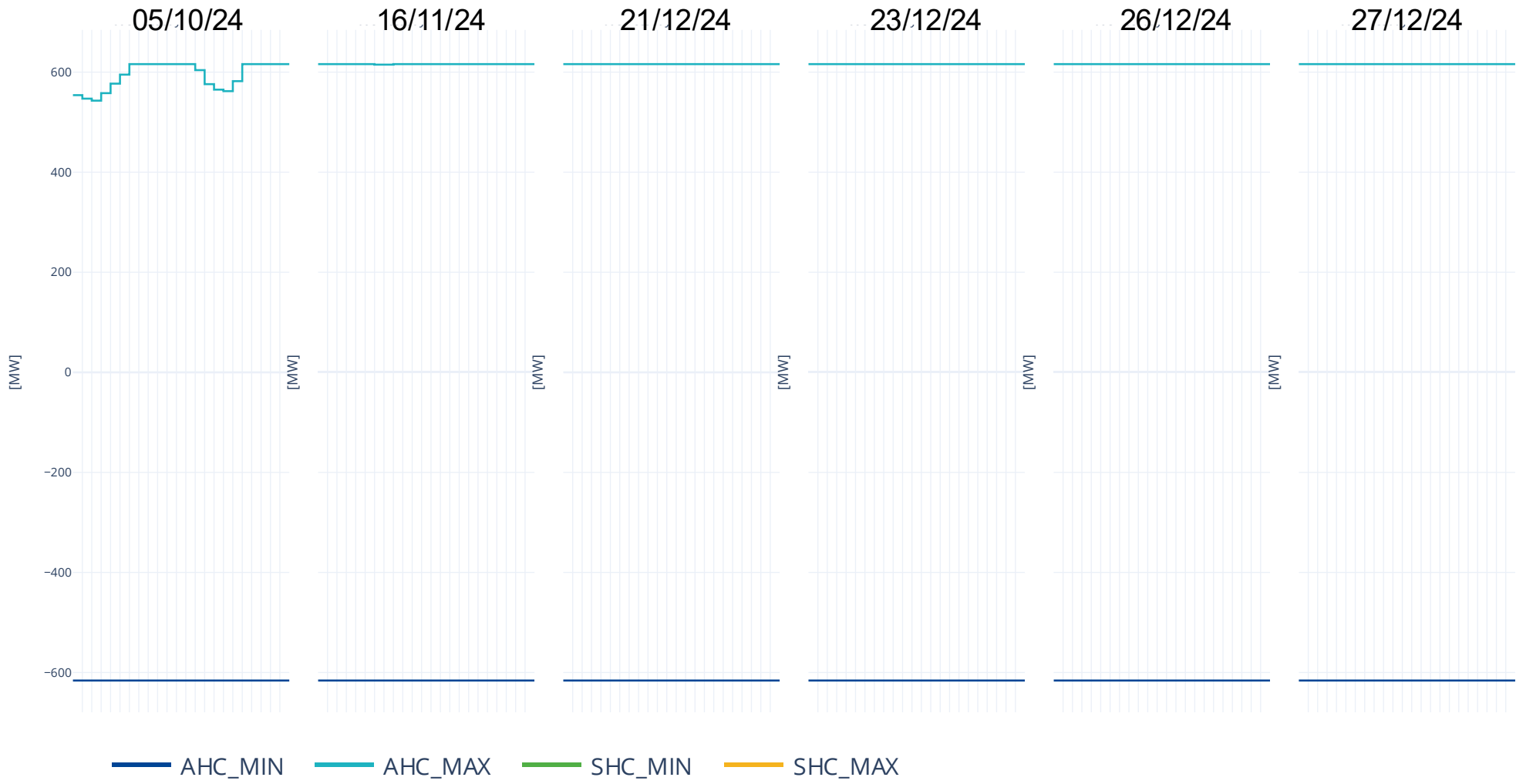
# 5. Day-Ahead Capacity Calculation – other topics

P. BAUMANN

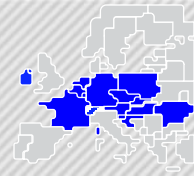


Min/Max NP in AHC SPAIC #4 for Baltic Cable

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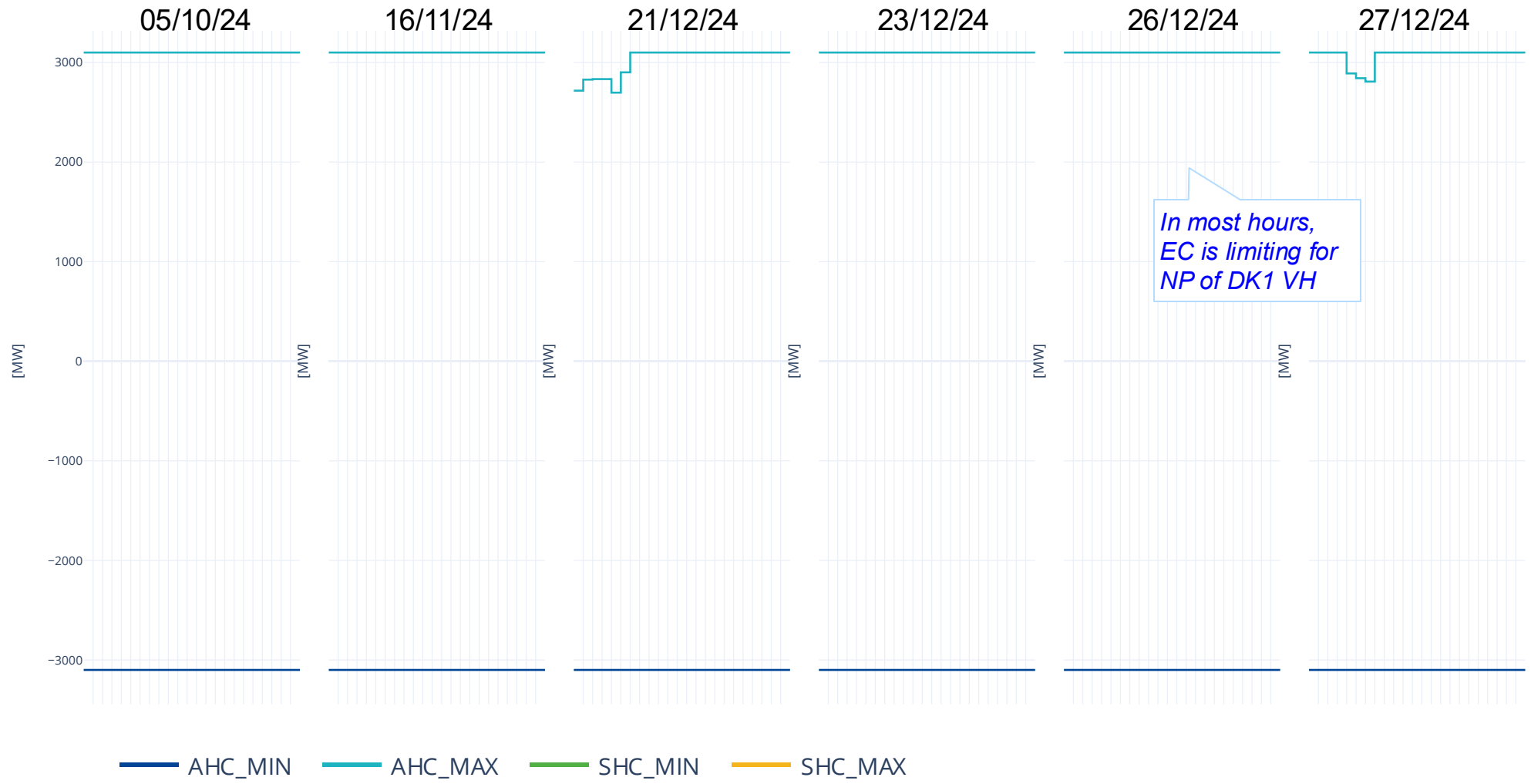


# 5. Day-Ahead Capacity Calculation – other topics

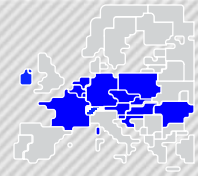


Min/Max NP in AHC SPAICC #4 for DK1

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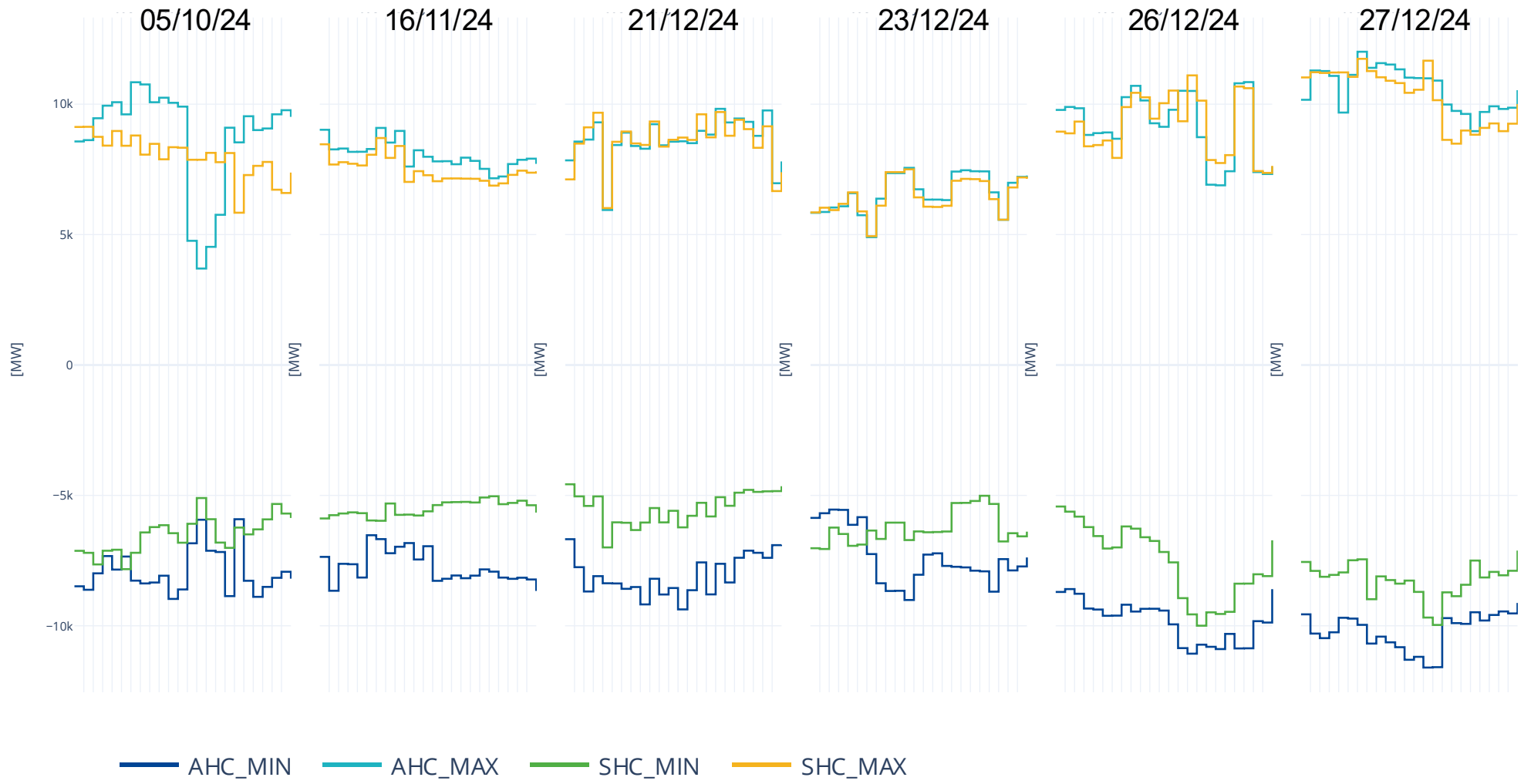


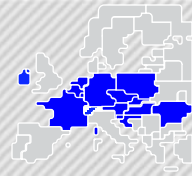
# 5. Day-Ahead Capacity Calculation – other topics



Min/Max NP in AHC SPAICC #4 for NL

Pre-read





### Follow-up on operational processes

#### Introduction

- Core TSOs went live with the IDCC(c) process on BD25/06. This is the third IDCC(c) process that goes-live after the successful go-live of IDCC(a-b) in spring 2025.
- Core TSOs are constantly monitoring the operational process and would like to report on the improvements in BZ isolation with the go-live of IDCC(c) and an explanation of the fallbacks that have occurred recently.

#### Core TSOs are glad to inform that the IDCC(c) process provides updated capacities to the market and shows improved Bidding Zone (BZ) isolation for some countries

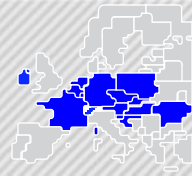
- These results are consistent with the outcomes of the EXT // run and included in the next slides

#### Core TSOs observed an increase in the number of fallbacks applied in the last 6 months (2 full days, 6 partial days) and are focusing on further stabilizing the process by assessing the root causes

- Fallback are reported in the JAO Publication tool ([LINK](#))
- Due to increasing complexity of the Core processes, the IT tooling and hosting requires continuous developments
- 2 main causes for process stability issues
  - IT issues impacting the connectivity between different parts of the common capacity calculation tool
  - Issues with input files (example of IDCC(c) go-live explained in further material)
- IT vendors continuously monitor the process and to avoid that any issues are solved without resulting in fallback applications if possible

Next slides show the improvement in BZ isolation since the go-live of IDCC(c) and explanation of the fallback applied on 25.06.

## 6. Intraday Capacity Calculation

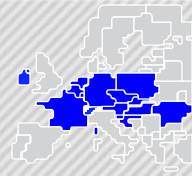


Fallback triggered BD 25/06/2025

The Core IDCC(c) process faced a fallback at its go-live for BD 25/06 due to a data quality checks error in the Common Capacity Calculation tool. The issue could be resolved for the next business day by temporary mitigation until fix in the tooling is deployed, and by future preventive measures.

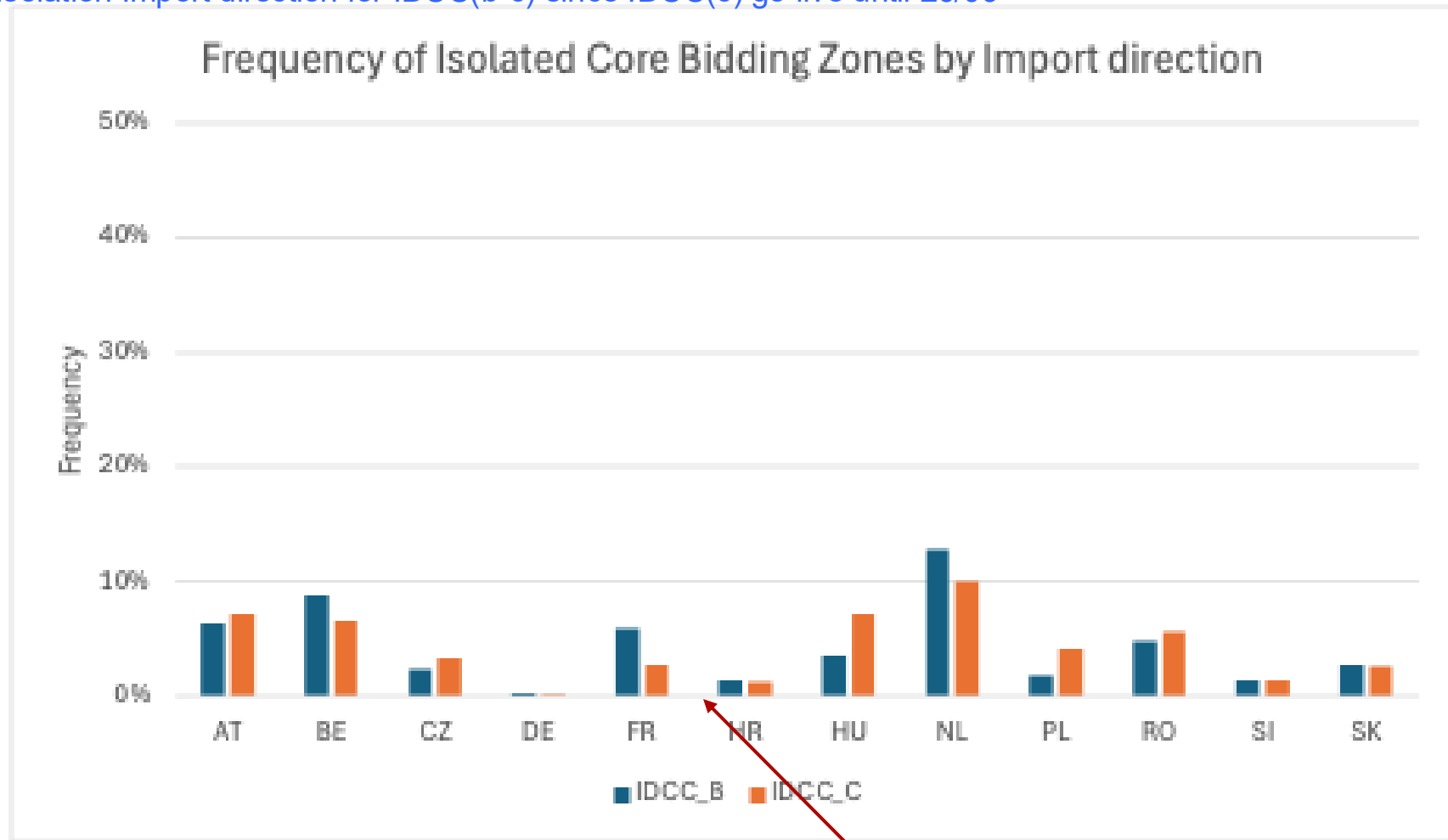
- The production incident occurred during the IDCC(c) process due to missing input from MAVIR and HOPS
- The reason for the missing input was related to an issue with the automatic input replacement of the Central Capacity Calculation Tool from previous computations
- For a temporary mitigation, a manual workaround has been put in operation from MAVIR and HOPS to create missing files and resolve potential issues.
- A fix for the Capacity Calculation Tool was implemented for BD 24/07

## 6. Intraday Capacity Calculation



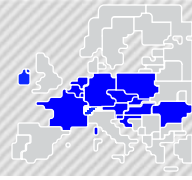
Follow-up on operational processes

BZ isolation Import direction for IDCC(b-c) since IDCC(c) go-live until 26/09



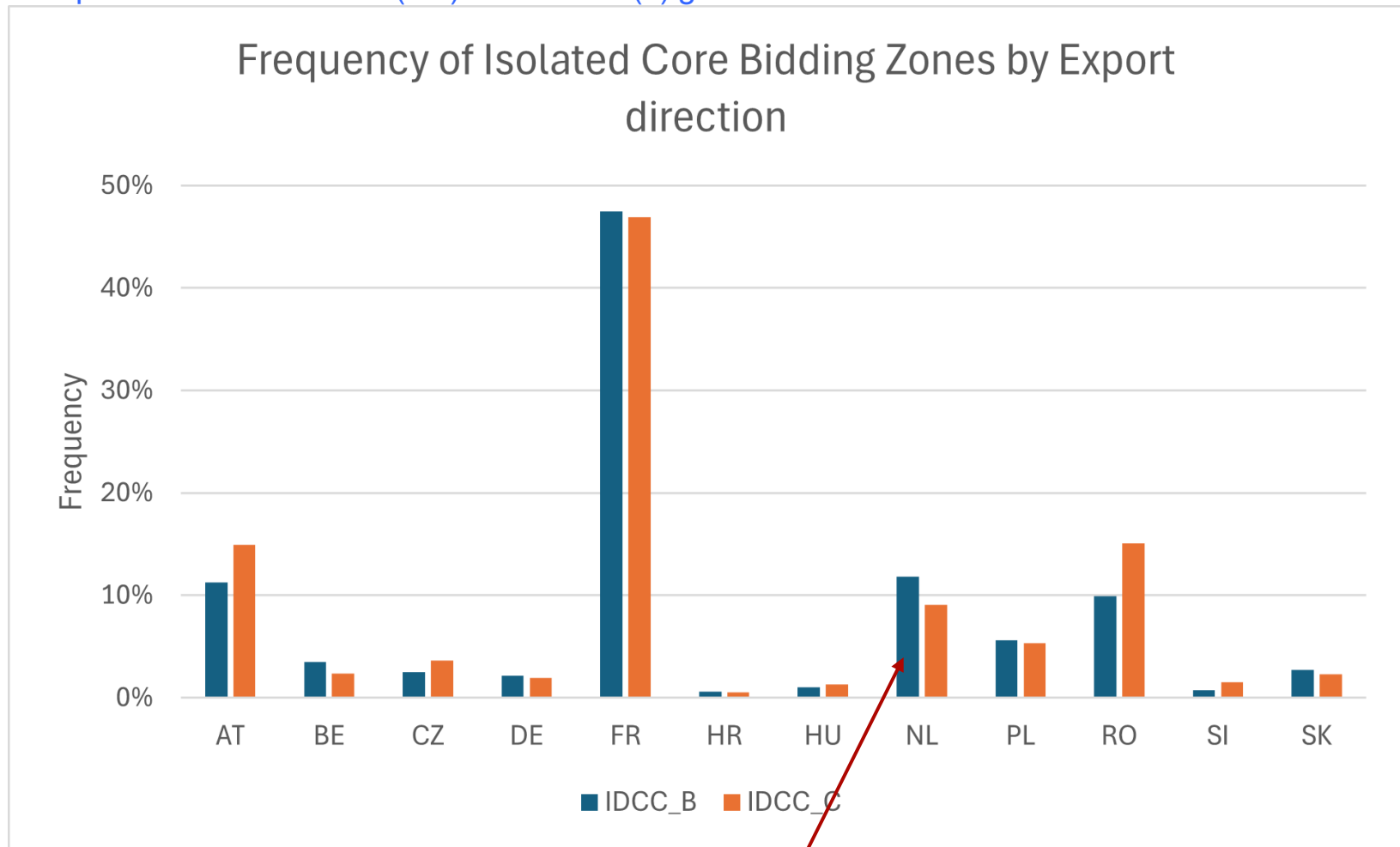
- The IDCC(b) BZ isolation by import direction for most BZ improved. EG. for FR it decreased from 6% to around 2.5% of the MTU's.

## 6. Intraday Capacity Calculation



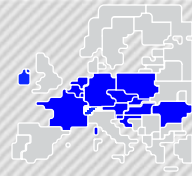
Follow-up on operational processes

BZ isolation Export direction for IDCC(b-c) since IDCC(c) go-live until 26/09



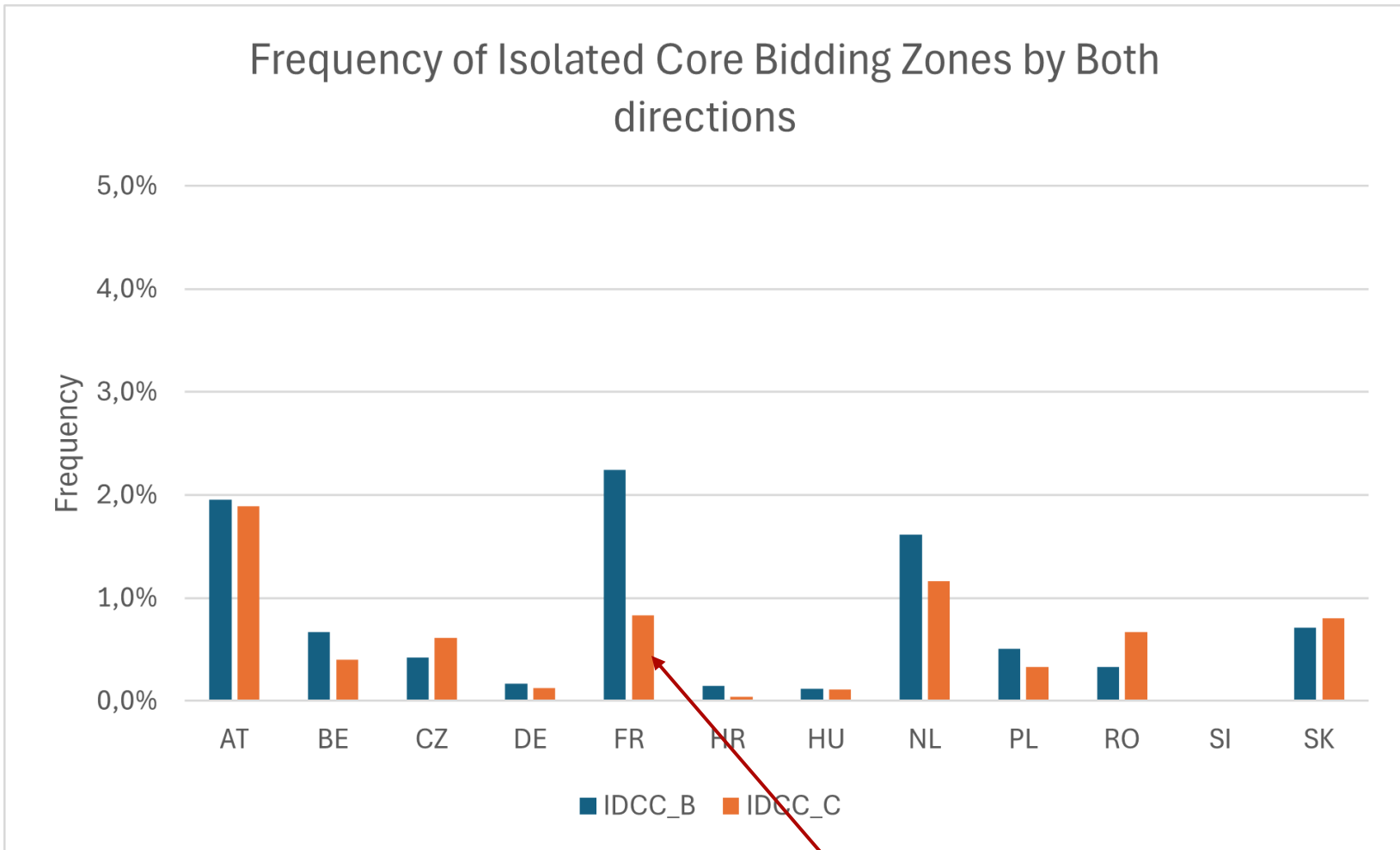
- The IDCC(b) BZ isolation by export direction for most BZ improved. EG. for NL it decreased from 11% to around 9 % of the MTU's.

## 6. Intraday Capacity Calculation

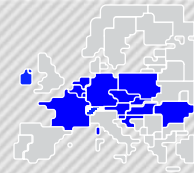


Follow-up on operational processes

BZ isolation both directions for IDCC(b-c) since IDCC(c) go-live until 26/09



- The IDCC(b) BZ isolation by both direction for most BZs improved. EG. for FR it decreased from 2.1% to around 0.9% of the MTU's.

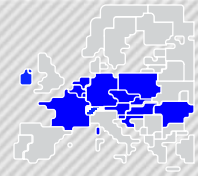


### Introduction

- On 16/09, Core TSOs submitted the proposed amendment for Public consultation and NRA shadow opinion ([LINK](#)). The public consultation closed on 15/10. The NRA shadow opinion is expected on 22/10.
- Core TSO aim for final submission to NRAs early December.

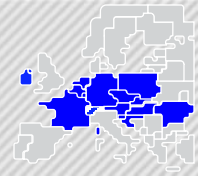
Today Core TSO would like to present the final amendment scope and discuss general questions:

ID CCM 5 <sup>th</sup> Amendment Topic	Description of change
1 <b>Changes due to Celtic interconnector</b> <i>Remark: Aligned with 4th Amendment of DA CCM</i>	<ul style="list-style-type: none"> <li>• Integration of new interconnector: Change of definitions (Art. 2); Ramping constraints introduced (Art. 7); Updated publication (Art. 22); Addition of new border added in implementation plan (Art. 25)</li> </ul>
2 <b>Removal of LTA inclusion for IDCC(a)</b> <i>Remark: Aligned with 4th Amendment of DA CCM</i>	<ul style="list-style-type: none"> <li>• Follow up methodology change in accordance with LTA removal for DA, to enable the implementation of LTCC and LT FBA.</li> </ul>
3 <b>Extension of PL allocation constraints</b> <i>Remark: Aligned with 4th Amendment of DA CCM</i>	<ul style="list-style-type: none"> <li>• Extension of deadline for Allocation Constraints (Art. 7 and annex) beyond May 2026</li> </ul>
4 <b>Consideration of 110kV elements as CNECs after validation</b> <i>Remark: Aligned with 4th Amendment of DA CCM</i>	<ul style="list-style-type: none"> <li>• Update of validation process (Art 18) to allow TSOs the consideration of additional 110KV elements for final FB computation</li> </ul>
5 <b>FB in IDA</b>	<ul style="list-style-type: none"> <li>• The procedure to manage and update ID capacities after the introduction of Flowbased allocation for Intraday Auctions in SIDC has been integrated to prepare the ID CCM for the upcoming changes in ID capacity allocation (Art.20)</li> </ul>
6 <b>AHC in ID</b> <i>Remark: Aligned with 4th Amendment of DA CCM</i>	<ul style="list-style-type: none"> <li>• Multiple articles updated to allow implementation of AHC. Change of definitions (Art. 2), CNEC definition (Art. 5), FRM (Art. 8); GLSK (Art. 9), PTFD and reference flow computation (Art. 12), AHC description added (Art. 13) including study proposal, FB computation with AHC (Art. 17), implementation plan for AHC incl. dependency to SIDC (Art. 25)</li> <li>• AHC description added (Art.13) including study proposal. Considering that AHC in ID cannot be applied in ICT without adaption, Core TSOs are currently developing a concept and a prototype for ATC extraction. Once this is available, the analyses will be provided on the impact on both Core and non-Core intraday capacities. Based on these results, adjustments to the methodology will be proposed if needed.</li> </ul>
7 <b>Extension of ATC validation and Post-go-live studies</b>	<ul style="list-style-type: none"> <li>• New deadline for CNEC study (Art. 5) and FRM study (Art. 8) and GLSK study (Art. 9)</li> <li>• Keeping ATC based validation until FB in IDA go-live (Art. 25)</li> </ul>



### Table continued

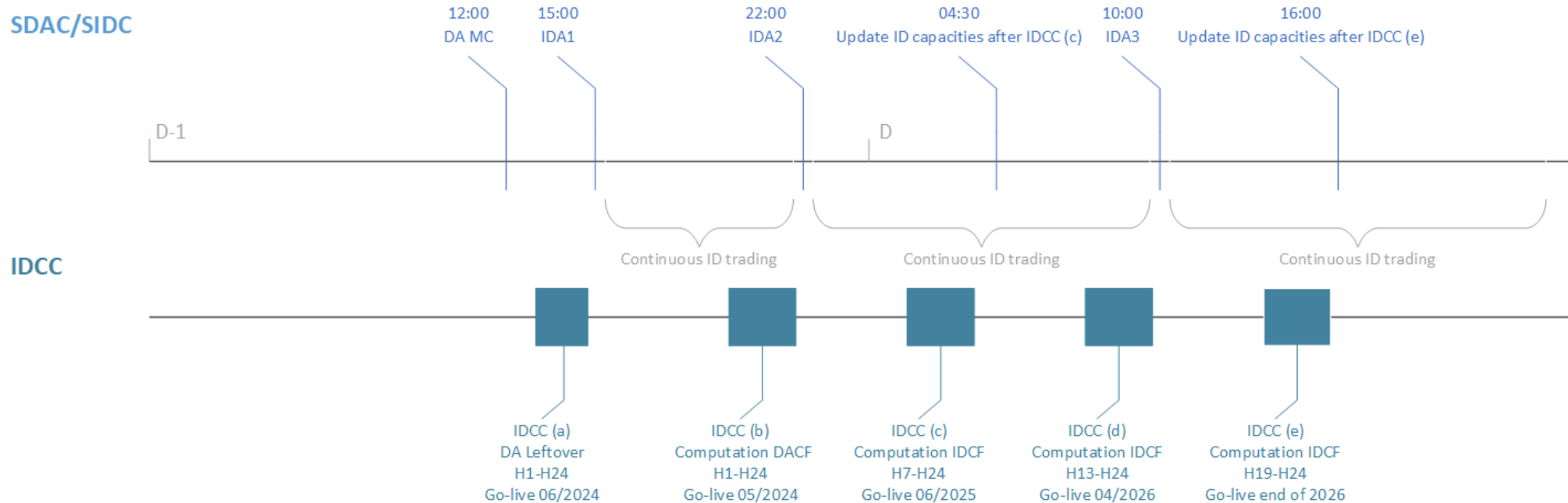
ID CCM 5 <sup>th</sup> Amendment Topic	Description of change
8 <b>Clarification, correction of errors/mistakes and updating/deleting outdated information</b>	<ul style="list-style-type: none"><li>• Updated process timings/interaction with NEMOs (Art. 4)</li><li>• Changed wording for operational security limits (Art. 6)</li><li>• Transitional IDCC(a) method removed as IDAs are in operation (Art. 11 and annex)</li><li>• Rename of Art. 20 based on NRA feedback as ATC extraction is no fallback solution but regular process until FB allocation go-live</li><li>• Removal of Art. 25 as Capacity Improvement study has been completed</li><li>• New implementation deadlines in Art. 25 e.g. independency from ROSC project for IDCC(e)</li><li>• The quality of the input of the initial Flowbased computation is improved by using a shifted common grid model considering the latest market results from SIDC.</li></ul>

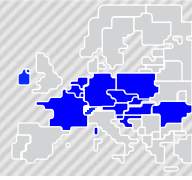


## IDCC(d) planning

### Introduction

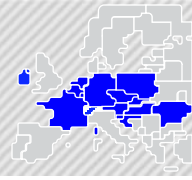
- After the go-live of IDCC(c) in June 2025, Core TSOs shifted their focus to the IDCC(d) implementation. This is the fourth out of the total of 5 IDCC processes
- IDCC(d) will provide updated capacities before 9:45 for IDA3 and the remaining capacities will be provided to ID continuous trading.





Core TSOs are aiming for an IDCC(d) go-live in April 2026 and a planned start of the EXT // run on 21/10.

- Core TSOs requested NRA comfort for a 1-month delay (due to IT developments) compared to the obligation in the ID CCM. Core NRAs granted the comfort.
- The EXT // run will at least last 6 months.
- During the EXT // run, the results will be uploaded to the JAO Publication tool daily.
  - Core TSOs will provide a link before the start of the // run via the CG distribution list and JAO message board.
- All stakeholder will be informed on the progress during the regular meetings



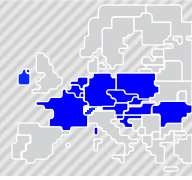
#### Background

- During Core CG 27/05, Core TSOs presented the preliminary conclusions of the CIS and prepared an overview of the outcomes and published this on the ENTSO-E website ([LINK](#)) and sent it to the CG distribution list.

#### TSOs concluded on 2 improvement measures for implementation not requiring an update of the ID CCM

- IDCC(a): ATC parameter optimization by increasing the PTDF threshold from 0.5% to 1%
  - Implementation date: Implemented as of BD 01/08
- IDCC(b): Process and IT optimization. Core TSOs concluded to use 16 min of the available time savings for a taking a later DACF in the IDCC(b) process. This is to balance the risk of having a robust process and avoid experiencing process failures in case of delay
  - **End October 2025**: Implementation of 10 min time savings in the business processes
  - **Q2 2026**: Additional time savings of 6 min to reach to goal of 16 min in total.
  - Core TSOs decided to have this two-folded implementation as a new version of the Core Capacity Calculation Tool which will be deployed in Q1 2026 includes a set of functionalities that require additional process time and TSOs want to reserve sufficient time for these developments.

To further reduce pre-congestions and bidding zone isolation for IDCC(b) Core TSOs are investigating a potential minRAM concept in intraday (next slides)

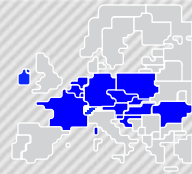


Core TSOs are performing a minRAM assessment in which 5% of minRAM is applied around RefProg and capped by a pre-defined MACZT capping per TSO region

- **minRAM value of 5%:** The focus is on results that can be directly considered for implementation in production and are closer to the current state, considering the adaptability of existing Individual validation tools (Redispatch potential, increased number of vertices), and taking into account the limited experience with virtual capacities in ID
- **MACZT Capping value:** Considered a fair comparison for accuracy of comparing with production under influence of allocation levels in DACC.
- **BD selection:** The First 8 months of 2025 (Jan-Aug) will be subject to minRAM.
- **Individual validation:** Minimum 4 months of data. Sampling of BD will be done by starting at 1st of January and then taking each second day thereafter.
- **KPIs:** TSOs will measure the same delta KPIs as used in the CIS (Frequency of Zero and Negative ID ATCs, Frequency of Isolated Core BZ, Mean positive ATCs). Next to this the impact of individual validation, amount of AMR, Neglected flows from ATC extraction and the impact of MACZT capping will be measured.
- Outcomes of the study will be shared with MPs through the regular channels.

Detailed explanation of the minRAM concept and roadmap included in the next slides

## 6. Intraday Capacity Calculation

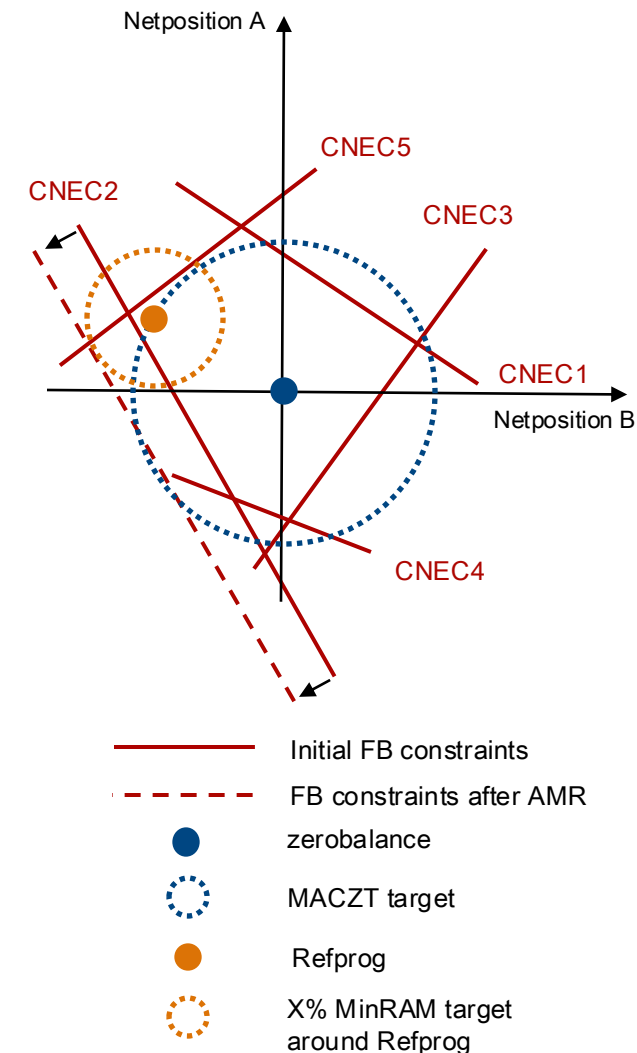


### IDCC MinRAM study: Explanation of the minRAM approach

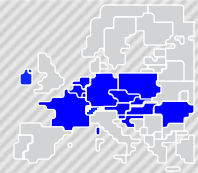
#### New MinRAM approach

- The new MinRAM concept foresees the application of virtual capacities relative to Refprog, rather than around a situation with no commercial exchanges (zero balance as in Day-Ahead). The Refprog already considers the market direction.
  - Aims directly to avoid pre-congestions and bidding zone isolations by guaranteeing additional ID capacities on top of the latest market results to get closer to the MACZT target
  - A low level of virtual capacities is intended to partially offset the incomplete D-1 security analysis and the lack of RAs before the start of IDCC(b)
  - A backstop is provided in the form of a MACZT target in case of high AAC
- The figure shows the situations when the RAM of a CNEC can be increased by virtual capacities or AMR:
  - If X% ID MinRAM relative to Refprog is fulfilled, no virtual capacities are applied (see CNEC 1, CNEC 3 and CNEC 4)
  - If X% ID MinRAM relative to Refprog is not fulfilled but the MACZT target, no virtual capacities are applied in ID. (see CNEC 5)
  - Only if X% ID MinRAM relative to Refprog and the MACZT target are not fulfilled, virtual capacities are applied in ID. (see CNEC 2)

Virtual capacities for the X% MinRAM target are added on top of allocated capacities but only if the MACZT target has not already been met.

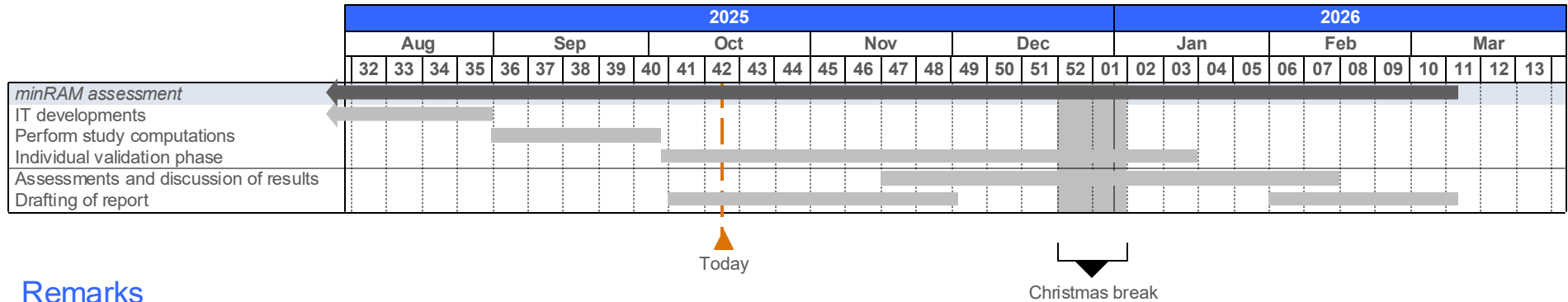


# 6. Intraday Capacity Calculation



## IDCC MinRAM study: Roadmap

### Roadmap minRAM assessment



### Remarks

- Depending on outcome of the study an amendment can follow
- 2026 Meeting calendar is being prepared. Expectation is to give update during the first CG meeting in 2026



Bundesnetzagentur



\* as according to ACER Decision No 04/2024 (of 19 March 2024)

# Derogation requests from 70% rule

Core CG NRA input

# 70% requirement: post-2025 derogation requests

## Context

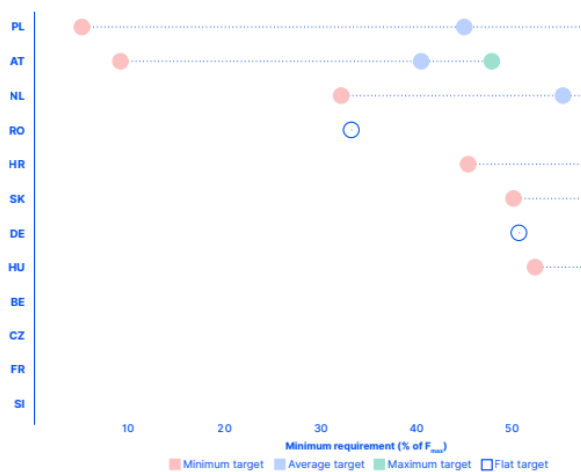
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- Art. 15 (on action plans) and art. 16(8) (on 70% compliance) of Regulation (EU) 2019/943 foresee gradual increases in available cross-zonal capacities, until 31 December 2025, requesting **compliance with the 70% requirement**.
- The possibility to request (and approve) further derogations (from 1 January 2026 onwards) has been discussed between CE NRAs, ACER and EC in Q2 2025  
The current situation regarding the non-implementation of CVA, ROSC & CS, investment projects to deal with structural congestion, availability of (cross-zonal) remedial actions, etc. is likely to prevent several Core TSOs to rely on them to structurally fulfil the 70% requirement, **without endangering operational security**.
- 1 January 2026 is generally considered (by stakeholders) as a milestone regarding the compliance with the minimum capacity requirements, hence further derogations **should be carefully assessed and scrutinized**, in order to challenge the status quo for the years to come.

# 70% requirement: post-2025 derogation requests

Progress towards 70% compliance: findings from ACER MMR 2025

Figure 25: Overview of the interim capacity requirements as defined by applicable action plans and/or derogations in the Core CCR for each Member State – 2024 (% of  $F_{max}$ )



Source: ACER calculation based on TSO data.

Note: 'Flat target' corresponds to derogations and/or actions plans that define a single requirement for all CNECs and hours of the year. When no derogation nor action plan is applicable, the minimum requirement shall be 70% for all CNECs and hours.

Source:  [ACER MMR 2025](#)

- Interim targets in 2024, below 70% MACZT due to **action plans** and **derogations**, continue to vary significantly among Core TSOs (in terms of min, avg, max)
- Interim targets are, generally, upheld in 2024, with some exceptions (notably HR, HU, NL, RO & SK)
- Compliance with interim targets often (yet not always) through the adjustments from minimum RAM (or AMR, or “virtual capacities”)

# 70% requirement: post-2025 derogation requests

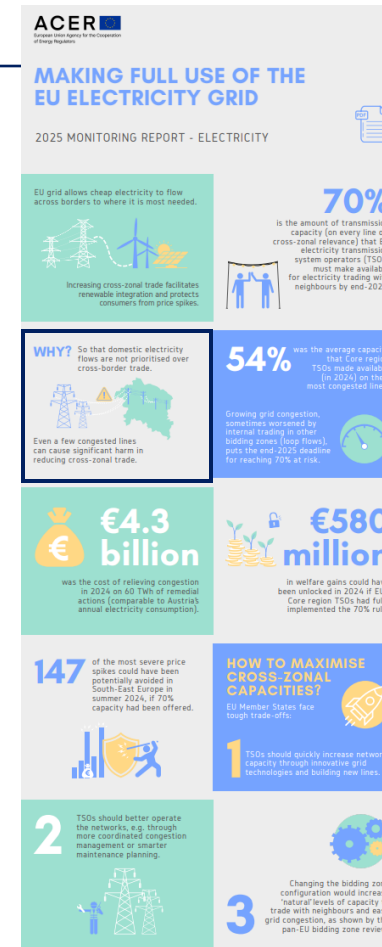
Derogations from 1 Jan. 2026: how to obtain meaningful progress

Relevant phases in the process:

- Identifying the need for continued derogations and explaining how this relates to **operational security concerns** and how **avoidance of undue discrimination is ensured** (TSOs, nudged by NRAs)
- **Assessing historic progress and (where possible) future outlook** to confirm this TSOs' need (NRAs)
- Setting clear and transparent requirements, procedures **and dynamic interim targets** (specific to individual MTUs and CNECs) based on methodological calculation (e.g. "excessive loop flow calculation"), verifiable by NRAs (TSOs, nudged by NRAs)
- **Monitoring** the compliance ex post (NRAs & ACER)
- None of these are new requirements

**The success of each of these phases and, ultimately, the 70% requirement contributing to efficient market integration, would significantly benefit from harmonized, strict and transparent action from Core NRAs' side**

- ACM & CREG propose to prepare a draft "template" to facilitate information sharing during the Core NRAs' consultation round



Source: [ACER MMR 2025](#)

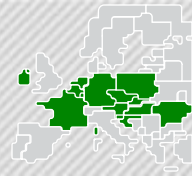
# Overview of (planned) post-2025 derogation requests

Derogations from 1 Jan. 2026: what can we expect?

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Is a derogation request expected?	Countries
Yes	Belgium, Romania, Netherlands, Slovakia, Poland, Austria
Likely yes	Ireland
Likely no	Hungary
No	Luxembourg, France, Slovenia, Czech Republic
Unknown	Germany

This table is compiled from the information available to Central Europe NRAs so far and is subject to further discussions and alignment with the respective TSOs. It should not be considered as a definite overview.



## Next meeting and communication channels

### Existing Core communication channels

#### Core Consultative Group mailing list

- Register for future updates by subscribing to <https://magnusenergypmo.hosted.phplist.com/lists/?p=subscribe>

#### Core section on ENTSO-E website

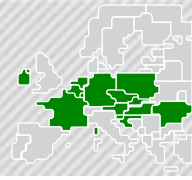
- Upload of methodologies and reports on public consultations, current status of the Core CCR program, CG minutes
- Link: [https://www.entsoe.eu/network\\_codes/ccr-regions/#core](https://www.entsoe.eu/network_codes/ccr-regions/#core)
- Work is ongoing to update the legal framework section of the ENTSO-E website. This will show the active CCMs (/amendments). A press release will be sent out once this is final.

#### ENTSO-E newsletter

- Regular updates on the different CCRs (e.g., submitted methodologies, launch of public consultations)
- Subscription via <https://www.entsoe.eu/contact/>

#### Q&A forum on JAO website

- Provides space to Market Participants to ask questions about the External Parallel Run and other relevant topics:
- Link: <http://coreforum.my-ems.net/>
- Efforts are ongoing to ensure questions are answered within a month.

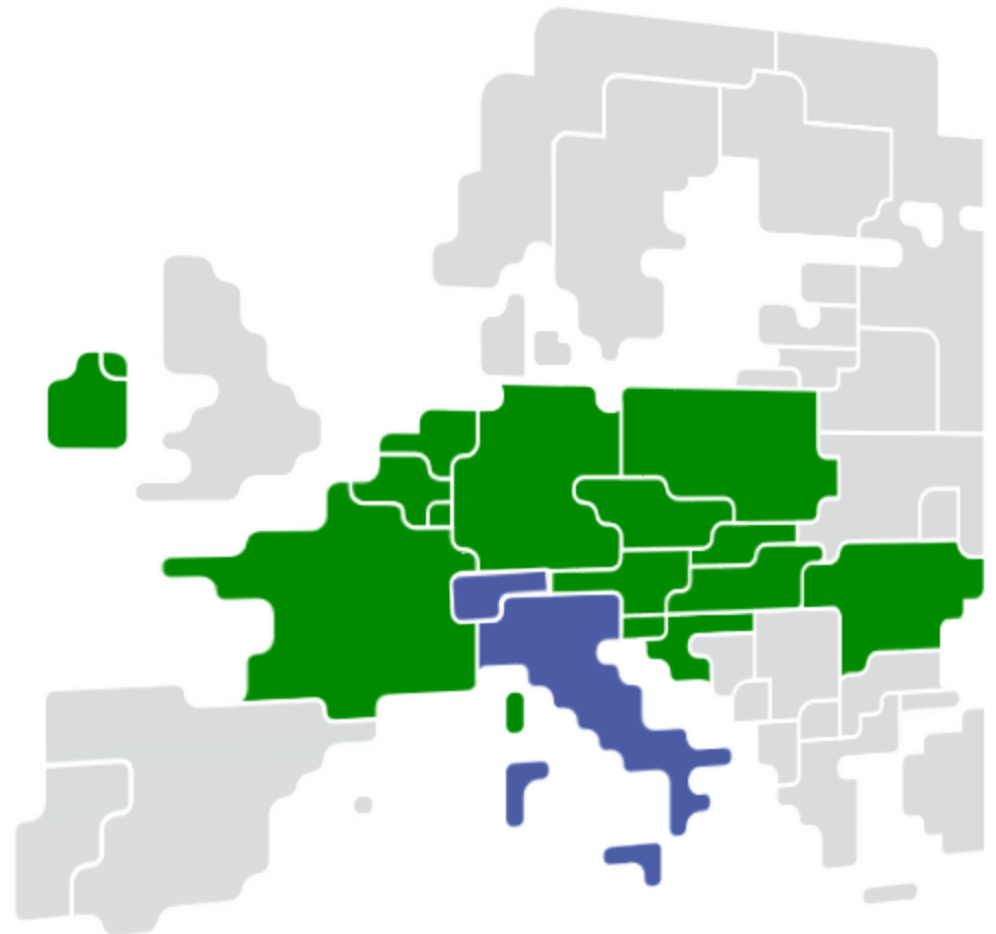


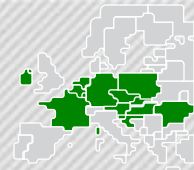
## AoBs

### Next Core Consultative Group

- TBD in 2026
  - Core TSOs are finalising the meeting calendar for 2026

# APPENDIX



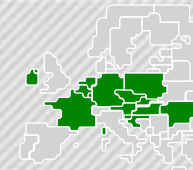


## Scope of discussions

### Scope of discussions Consultative Group/Core CCR vs. MCCG/MCSC

- As to ensure clear alignment, the following table aims to clarify which topics and discussions fall within the scope of CG/Core versus MCCG/MCSC. Only the main/overlying topics currently discussed in the respective projects are listed.
- The stakeholder managers of the respective projects and fora are in direct alignment to ensure any questions outside “their” scope can be redirected accordingly.

	Core CCR	MCSC
General Scope	<ul style="list-style-type: none"> <li>• Capacity calculation</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity allocation</li> </ul>
Intraday Auctions (IDA)	<ul style="list-style-type: none"> <li>• Capacity calculation (IDCC)</li> </ul>	<ul style="list-style-type: none"> <li>• Timings</li> <li>• Products &amp; user interfaces</li> <li>• Central testing</li> </ul>
Advanced Hybrid Coupling	<ul style="list-style-type: none"> <li>• Design &amp; Implementation into DACC</li> <li>• Impact assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Testing allocation algorithm</li> <li>• Central testing</li> </ul>
15 min MTU	<ul style="list-style-type: none"> <li>• Regional testing</li> </ul>	<ul style="list-style-type: none"> <li>• Timings</li> <li>• Products &amp; user interfaces</li> <li>• Central testing</li> </ul>



ACER	Agency for the Cooperation of Energy Regulators	IGM	Individual Grid Model
AHC	Advanced Hybrid Coupling	IVA	Individual Validation Adjustment
BZ	Bidding Zone	KPI	Key Performance Indicator
CACM	Capacity Allocation and Congestion Management	LF-SA	Load Flow Security Analysis
CC	Capacity Calculation	NRA	National Regulatory Authority
CCR	Capacity Calculation Region	NRAO	Non-costly Remedial Action Optimization
CGM	Common Grid Model	RA	Remedial Action
CGMES	Common Grid Model Exchange Standard	RAO	Remedial Action Optimizer
CNEC	Critical Network Element with a Contingency	RFI	Request for Information
CS	Cost Sharing	RFP	Request for Proposal
CSA	Coordinated Security Analysis	ROSC	Regional Operational Security Coordination
CSAM	Coordinated Security Analysis Methodology	RD&CT	Redispatching and Countertrading
CROSA	Coordinated Regional Operational Security Assessment	RSC	Regional System Operator
DA	Day-Ahead	TSO	Transmission System Operator
ENTSO-E	European Network of Transmission System Operators for Electricity	SHC	Simple Hybrid Coupling
FAT	Final Acceptance Test	SO GL	System Operation Guideline
FIT	Functional Integration Test	SAT	Site Acceptance Testing
FB	Flow Based	SIT	System Integration Testing
GSK	Generation Shift Key	V1/V2	Version 1/ Version 2
GLSK	Generation Load Shift Key	XNE	Cross-border element
IDCC	Intraday Capacity Calculation		