

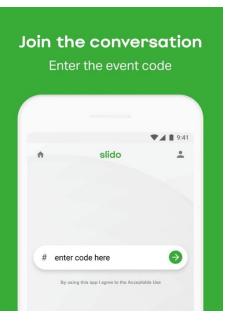


ENTSO-E 16 June 2025

Housekeeping Rules and Q&A

- Please note that the webinar will be recorded.
- Questions can be posted in SLIDO anytime during the webinar and will be answered at the end.
- To post your questions:





Or simply scan the QR



Agenda

10:00	Introduction & Opening Notes	Marco Hartmann (ENTSO-E Reporting on Market Integration WG Convenor) Kjell Barmsnes (ENTSO-E Market Committee Chair)
Market R	Report 2025	
	Implementation Progress of FCA, CACM & EB GL	<i>Ludivine Marcenac</i> (ENTSO-E Deputy of Market Section and Market Integration Manager) Jose Ignacio de la Fuente (ENTSO-E Balancing Reporting PT Lead)
	Forward Capacity Allocation – Long-Term Markets	Jim Vilsson (ENTSO-E Market Integration Working Group Co-Convener)
	Market Coupling in Day-Ahead and Intraday Markets	Emma Vila I Lopez de Recalde (MCSC TSO Communication Task Force Convener)
	Balancing Markets	Jose Ignacio de la Fuente (ENTSO-E Balancing Reporting PT Lead)
	Compliance with CEP70 Requirements	<i>Katrin Protard</i> (ENTSO-E PT Art. 16 Lead) <i>Frank Boermann</i> (ENTSO-E PT Art. 16 Expert) <i>Jakob Olsen</i> (ENTSO-E PT Art. 16 Expert)
	FCA2.0: Evolution of Cross-Zonal Hedging Opportunities	Jim Vilsson (ENTSO-E Market Integration Working Group Co-Convener)
~11:15	Q&A	Moderation by Mariavittoria Rancan (ENTSO-E Reporting on Market Integration WG Advisor)

Introduction





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Market Report 2025



Background & Overview – Yearly Market Report is the 'Flagship' of ENTSO-E's Market Monitoring Activities Covering All Timeframes



ENTSO-E has 40 member TSOs from 36 countries



ENTSO-E's Market Report 2025 covers the period from **June 2024 to May 2025**



Every year, ENTSO-E monitors the progress of the integration of European electricity markets in accordance with:

- Forward capacity allocation (FCA) regulation¹
- Capacity allocation and congestion management (CACM) regulation²
- Electricity balancing (EB) regulation³

Topics covered:

- 1. Implementation progress across **all** time frames
- Overview of the long-term electricity trading and transmission capacities processes
- 3. Current status of the single European day-ahead and intraday coupling process
- 4. Harmonisation and integration of European **balancing** markets
- 5. Current and future developments impacting the European electricity market



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FCA, CACM & EB – Updates of TSOs' projects

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Updates on FCA Regulation Requirements – Biennial Update of the Harmonised Allocation Rules

	Harmonised Allocation Rules (Art. 51)	• ENTSO-E has reviewed the HAR according to Art. 68(5) and proposed amendments with regards to the
		following topics:
		MTU-related changes,
		 changes related to the registration of market participants,
		refusal of application, suspension, and termination,
		clarification on prices,
		price cap publication,
		financial-related changes,
		additional clarifications and corrections.
		A decision on the amendment is expected by the end of September 2025

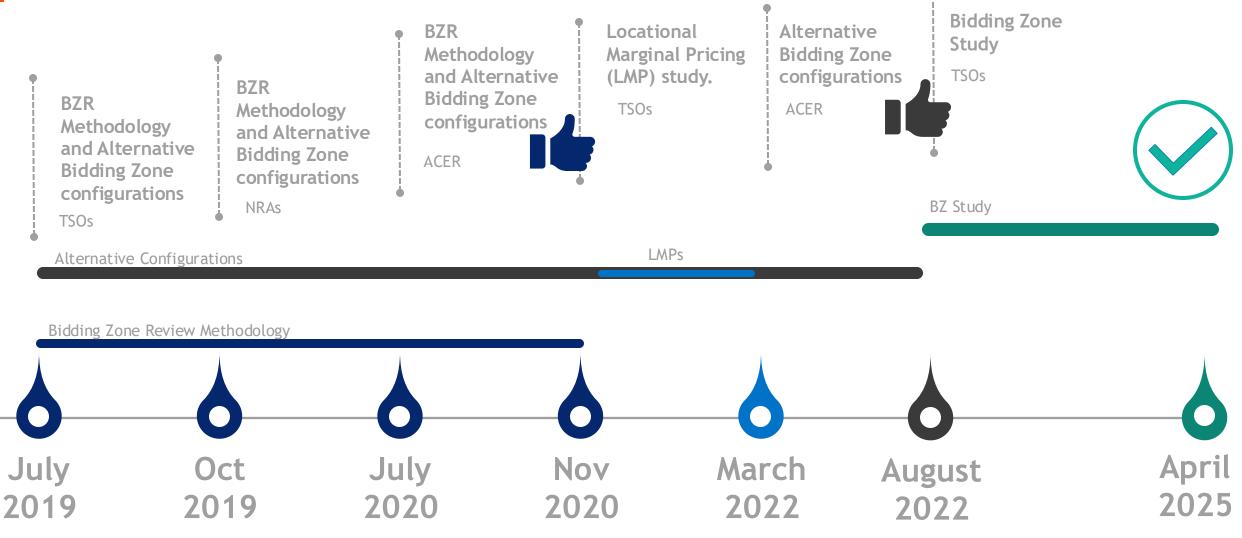
Updates on TSOs Projects According to CACM – Redesign of CCRs, Gate Closure Time, Scheduled Exchanges, CID

Determination of the CCRs (Art. 15)	 A request to amend the Determination of CCRs accordingly has been sent by ACER in January 2025. All TSOs are performing the required steps to deliver the amendment by the set deadline. Final submission is expected by 31 July 2025.
Intraday gate cross-zonal gate opening and intraday cross-zonal gate closure time methodology (IDCZGOCT) (Art. 59)	 As required by the EMD Regulation, from 1 January 2026, the intraday cross-zonal gate closure time (IDCZGCT) shall not be more than 30 minutes ahead of real time. All TSOs are performing the required steps to submit the proposal for amending the IDCZGOCT methodology to ACER. The draft proposal mainly focuses on the time change to 30 minutes. The final submission is expected by 2 July 2025.
Congestion Income Distribution (CID) (Art. 73)	 TSOs are implementing the methodology in coordination with JAO. JAO has been designated to develop an integrated tool for calculation, distribution, and invoicing of CID for TSOs affected by allocation mechanisms with cross-CCR impact. The tool is planned to be ready by March 2026. For the period until March 2026, TSOs will perform the congestion income calculation and redistribution manually.

Updates on NEMOs' and Joint NEMO-TSOs' Projects According to CACM

Joint NEMO-TSO deliverables	CACM annual report (Annex I to the ACER Decision 04/2020)	 On 19 September 2024, the All NEMO Committee organised its second Annual Conference. Part of this conference was dedicated to the key findings from the 'CACM Annual Report 2023' that was delivered on 13 September 2024. The report focused on demonstrating the safe navigation of an energy crisis, showcasing the effectiveness of market coupling during difficult times.
	SDAC and SIDC costs (Art. 80)	• 2023 CACM cost report was published on 24 July 2024.
NEMO deliverables	Algorithm methodology methodology (Art. 37)	 An amendment considering the requirements submitted by the TSOs for the co-optimisation of the balancing Energy was submitted by the NEMOs to ACER on 24 November 2023. ACER made revisions to the NEMOs' initial proposal and published its decision on the amended methodology on 23 September 2024.
	Single day-ahead coupling product methodology (Art. 40)	 ACER issued its decision on SDAC products on 25 September 2024. The amendment, following NEMOs' proposal, focuses on: (1) enabling the implementation of 15-min MTU products in SDAC, (2) removing entry barriers for market participants trading 15-min MTU products, (3) allowing them to buy and sell electricity for each 15-minute period, enhancing market flexibility.
	Single intraday coupling product methodology (Art. 53(4))	 ACER issued its decision on SIDC products on 27 March 2025. The amendment, following NEMOs' proposal, focuses on: (1) 15-min MTU product adoption, (2) IDA activation, (3) the introduction of scalable complex orders.

Bidding Zones Review milestone: TSOs deliver the BZ Study target year 2025

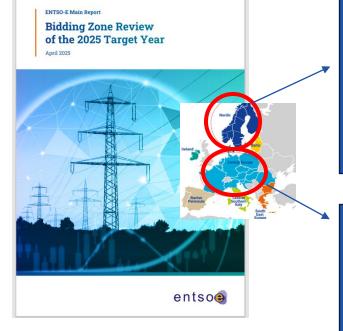


Next step: Decision making at Member state level

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BZ Review of the 2025 Target Year:



Nordic proposal



The Nordic TSOs propose to maintain the current BZ configuration in Sweden as the report result shows a negative monetised benefit for all analysed Nordic configurations compared to the status quo.

CE proposal



The Central Europe TSOs proposal stresses that this result stems from the BZR methodology defined by ACER and does not take important additional aspects into account and therefore should not be seen in isolation, but rather in combination with certain considerations, which should be thoroughly assessed prior to the eventual decision of the relevant member state(s) affected by a split on the future BZ configuration, as they could have a considerable impact on the interpretation and the outcomes of the BZ Study performed by the TSOs.

Latest Developments Regarding EB Methodologies

CZC Allocation: Implementation of the Harmonised Methodology (HCZCAM)

- ACER approval of HCZCAM in July 2023
- Submission of TSOs' amendments of HCZCAM in July 2024 further detailing the governance structure of balancing capacity platforms
- January 2024: start of the implementation project to develop the harmonized market-based CZCAOF including 13 European TSOs (COBRA project)
- ACER decision on TSOs amendments in January 2025

Co-Optimisation

- In September 2024, ACER issued its decision on amendments to the price coupling algorithm and the continuous trading matching algorithm, including the common sets of requirements.
- In April 2025, TSOs and NEMOs submitted the first draft report (RO) covering R&D on bidding products, bidding formats and price.
- Launch of public consultation of RO report and assessment by NEMOs in May June 2025.

High Balancing Energy Price Mitigation Measures

- ACER's decision on the proposed measures was received in July 2024.
- On voluntary price elastic aFRR demand, ACER mainly followed All TSOs' proposal but introduced limitations on the application of elastic aFRR demand.
- ACER approved a permanent price limit of ±15,000 EUR/MWh and established a price adjustment mechanism with the requirement for TSOs to implement an automated process to stepwise adjust the maximum price.

Imbalance Settlement Harmonisation

All TSOs have already implemented the imbalance settlement harmonisation.

Imbalance Settlement Harmonisation – Granular Trading Periods to Support the Market Integration of Intermittent and Flexible Assets

The EB Regulation and recast Electricity Regulation establish a **15-minute Imbalance Settlement Period (ISP)** for which Balancing Responsible Parties' (BRPs') imbalances have to be calculated. It also sets the minimum time interval for NEMOs, by which they shall provide market participants with the **opportunity to trade in energy**, for both day-ahead and intraday markets.

ACER decided on the ISH Methodology in July 2020 to further specify and harmonise imbalance settlement elements, to be implemented nationally at the latest by **January 2022**.

After the implementation of this methodology, each connecting TSO shall calculate, in each imbalance area for each ISP, **one single final position** for each BRP, as equal to the sum of scheduling unit's external and internal commercial trade schedules.

Was the 15-minute ISP implemented by 1 January 2025?	Implemented: Exemption:	26 TSOs 4 TSOs*
Has your TSO made use of additional components following ISH Methodology Art. 9(6) as of 1 January 2025?	Yes: No:	26 TSOs 7 TSOs
Has your TSO made use of dual pricing as of 1 January 2025?	Yes: No:	5 TSOs 26 TSOs

*The last 4 TSOs (Sweden, Denmark, Norway, Portugal) implemented the 15-minutes ISP in Q1 2025.



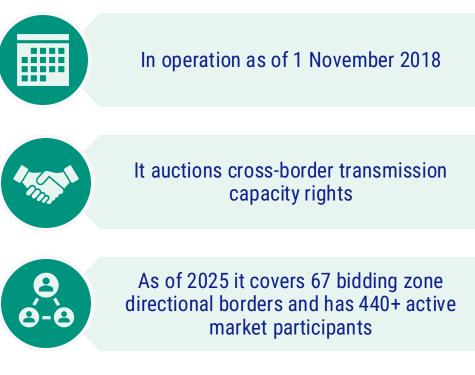
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FCA – Long-Term Markets

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Long-Term Markets – JAO a Cross-Timeframe Service Provider

The Joint Allocation Office (JAO) acts as the single allocation platform (SAP) operator for FCA

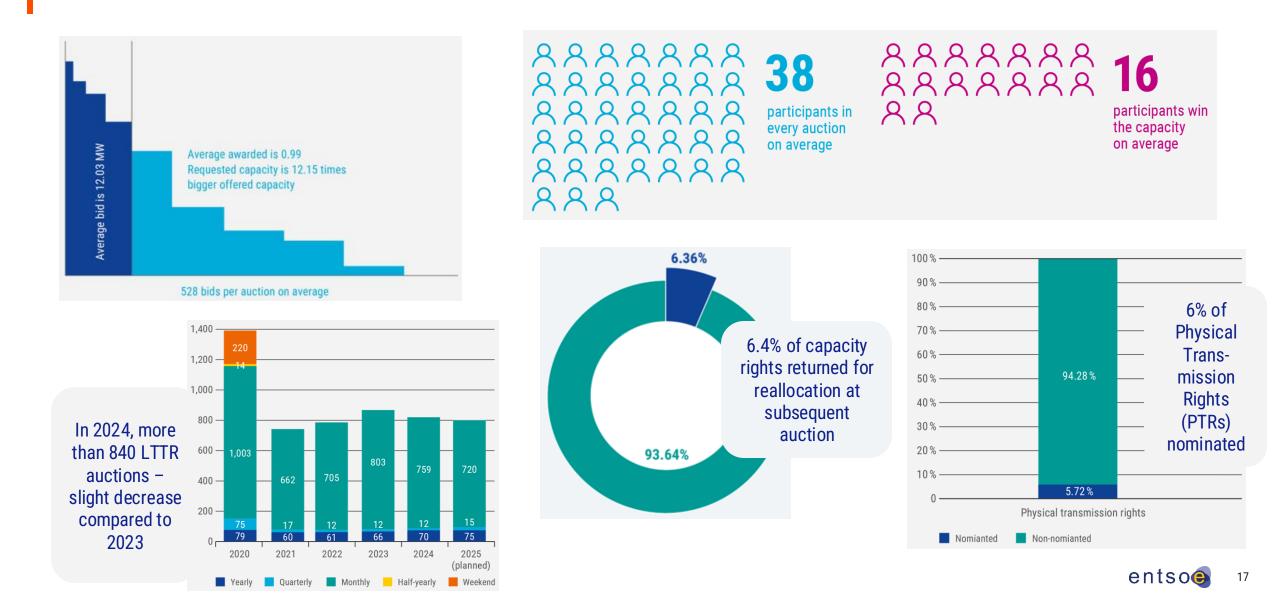




More than 6 500 auctions have taken place since SAP operations began



Long-Term Market - In 2024 Demand of LTTRs Exceeds Supply



Long-Term Markets – Single Allocation Platform (SAP) is Constantly Developed Further

Operations – Introduction of 15-Minute Products

• SAP tools and processes will be adapted to 15-minute day-ahead market products.

Regulation – Harmonised Allocation Rules (HAR) and Forward Capacity Allocation (FCA) Guideline

- HAR amendments submitted to ACER on 27 March 2025 according to the biennial update and decision expected until end-September. Amendments are of formal nature concerning MTUs, registration, publication, and financials.
- In August 2024, the EC launched a consultation to revise the electricity guideline on FCA, to which ENTSO-E submitted a response. The impact
 assessment will be completed by January 2026 and will result in the amendment of the FCA Regulation.
 The amended FCA Regulation will enter into force 6 months later, in July 2026.

Implementation – Long-Term Flow-Based Allocation (LTFBA)

- The LTFBA go-live is planned for the end of 2026 for the long-term yearly and monthly products for 2027 in the Core and Nordic CCRs.
- TSOs are fully committed to implementing LTFBA by November 2026 and are working intensively in cooperation with NRAs and ACER to achieve this goal.



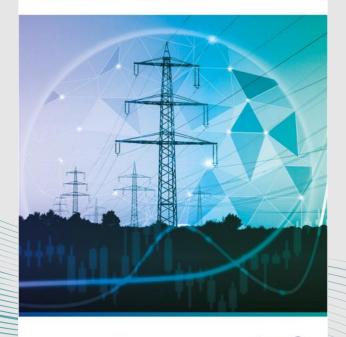
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CACM – Market Coupling in Short-Term Markets

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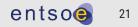


- The Joint Market Coupling Steering Committee (MCSC) was created in January 2022. Its governance includes mirrored Working Groups for both SDAC and SIDC to improve efficiency and foster collaboration between the projects.
- During the reporting period, the TSO MCSC approved and signed the TSO Cooperation Agreement for Market Coupling (TCMC), which merges the former Intraday (TCID) and Day-Ahead (TCDA) TSO cooperation agreements into a single framework. As a result, the TSO MCSC now operates under a unified agreement, streamlining governance by replacing the previous dual-contract model. → View the agreement
- MCSC also granted observer status to SEEPEX (Serbian NEMO), BELEN (Montenegrin NEMO), and CGES (Montenegrin TSO) for both SIDC and SDAC.
- ➤ The Market Coupling Consultative Group (MCCG), established in June 2022 to engage market participants, has remained active, with nine successful sessions held to date. → Session details available here
- With the upcoming CACM 2.0 in sight, the Governance Task Force has been reactivated.



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Market Coupling – Day-Ahead Market



Short-Term Markets – One Common DA Allocation for all EU Countries Single Day-Ahead Coupling (SDAC)



The **EUPHEMIA algorithm** is used for day-ahead market coupling, calculating electricity prices across Europe while implicitly allocating auction-based cross-border capacity.



In 2024, BRM became an operational NEMO, while ETPA continued as a non-operational observer. SDAC covers **26 countries**, **32 TSOs** and **18 NEMOs**.



Since 29 October 2024, the **Nordic region** uses **flow-based market coupling**, complemented by several regional improvements.



On 9 February 2025, the **Baltic states synchronized with the Continental EU electricity system via SDAC**, boosting resilience and security. This involved disconnecting from Russia and Belarus and converting the LitPol interconnector from DC to AC.



Since 2014, SDAC has run reliably with **no full decoupling**. After two partial decouplings in 2024, improvements were quickly made to improve operational communication, incident management and reporting.



Short-Term Markets – SDAC Continues to Optimize, Expand and Innovate

Technological Updates: PMB & EUPHEMIA

- In September 2024, PMB (v13.0) and EUPHEMIA (v11.3) were deployed, introducing key product-related changes and new IDA functionalities.
- The latest update (PMB 13.1 and EUPHEMIA 11.4) went live in Q2 2025, focusing on future enhancements for the 15-Minute Market Time Unit (MTU).

Accomplished Milestones

Upcoming Milestones

Future Algorithm Improvements

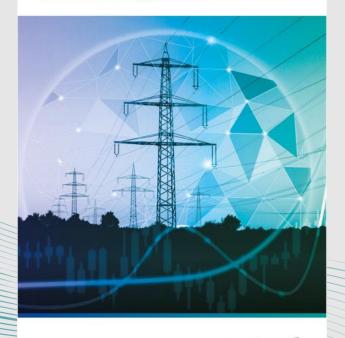
- 15-Minute Market Time Unit (MTU): All bidding zones (BZs) and bidding zone borders (BZBs) will switch to the 15-minute MTU setup by trading day 30 September 2025, after thorough member testing completed by May 2025.
- **Multiple NEMO Areas (MNA)**: Including multiple NEMOs within and between bidding zones is desirable to foster competition. The Baltic CCR expects to operationalize this soon.
- Advanced Hybrid Coupling (AHC): Good progress has been made in the Core CCR to implement advanced hybrid coupling.
- **Central Europe CCR**: Good progress is underway to make possible the Central European CCR (merge of Core CCR and Italy North CCR).
- **EUPHEMIA Lab Program**: Continuous enhancements and modifications to the algorithm, together with the introduction of new capabilities are constantly taking place. The goal is always adapting to evolving market needs.

R0 Co-Optimisation Report

• The first mandatory report covering R&D on the bidding products, bid design, and pricing has been submitted to ACER, fulfilling a key regulatory requirement.

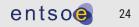
Change Control Procedures

 The MCSC finalized improvements in the change control process, ensuring more effective handling of change requests related to SDAC operations and systems.



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Market Coupling – Intraday Markets



Short-Term Markets – SIDC Handles 2 Systems: Continuous Trading & IDAs Single Intraday Coupling (SIDC)



SIDC enables **continuous cross-border trading across Europe**. It is based on a common IT system (XBID) with a shared order book, a single capacity management module and a shipping module.



In 2024, BRM became an operational NEMO. SIDC covers **26** countries, **30 TSOs**, and **17 NEMOs**.



Intraday Auctions (IDAs) have been implemented since June 2024.



The **15-Minute Market Time Unit (MTU)** is available across all BZs and BZBs, except for the GR-BG BZB and the GR BZ which will switch to the 15-Minute MTU in September, aligned with the SDAC go-live.

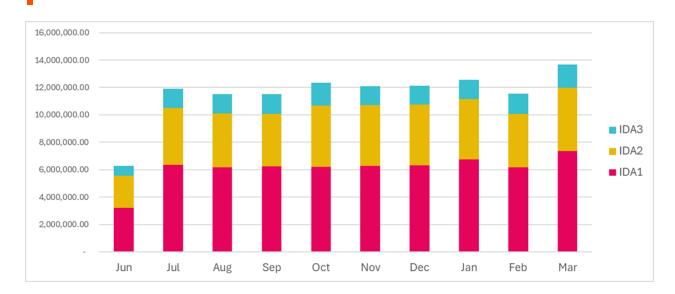


More than **580 million trades** have been executed within SIDC since its inception in June 2018 and until December 2024. The steady growth of trade has continued in 2025.



Short-Term Markets – SIDC Continues to Optimize, Expand and Innovate

Upcoming Milestones



European Intraday Auctions (IDAs)

- IDAs went live on 13 June 2024, introducing three implicit auctions that enable a more efficient allocation of Cross Zonal Capacity (CZC).
- Out of 875 auctions conducted, 861 were successfully completed.

15-Minute Market Time Unit (MTU)

- The 15-minute MTU is available across nearly all BZs and BZBs.
- A centrally coordinated transition, including testing for both continuous trading and IDAs, supported the rollout. It was conducted through the past months.

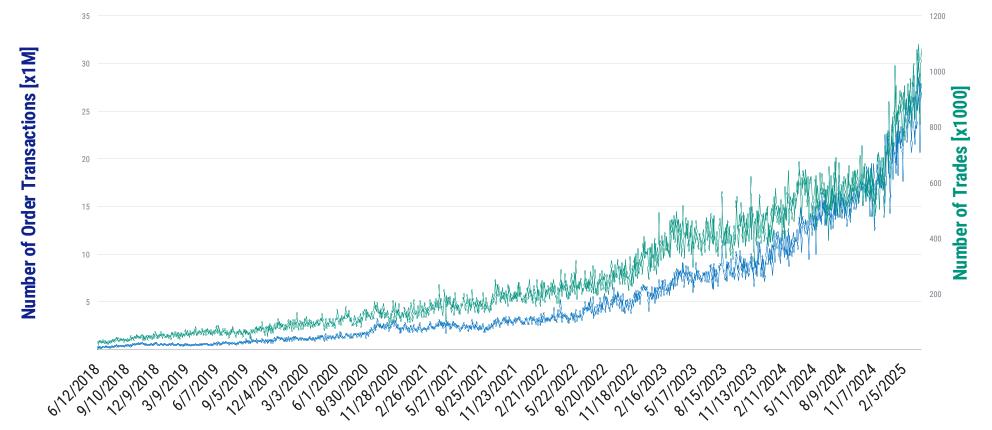
Technological Update of XBID-Systems

• XBID 4.0. and XBID 4.1. were deployed in May 2024 and January 2025 to support the subsequent introduction of IDAs.

Future XBID-Systems' Enhancements

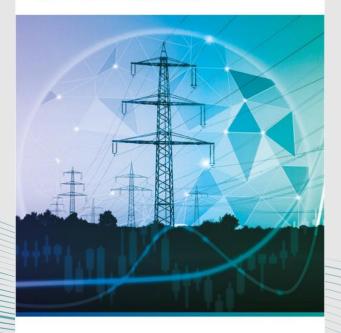
- Upcoming **XBID Releases 4.1.5 and 5.0 along 2025** will bring further performance improvements.
- A key focus is **implementing Flow-Based (FB) capacity allocation, first in IDAs and later in continuous trading**. While FB is expected to make more capacity available and enable more complex trades, the complexity requires further R&D and expertise. An interim step prioritizes FB in IDAs as a first stage.

Short-Term Markets: SIDC Continues Its Strong and Steady Growth



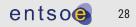
Order Transactions/Trades

Steady growth of number of order transactions and trades since 2018 continued!



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EB - Balancing



Background & Overview – Latest Developments in European Balancing



Highlight: European Balancing Energy and Reserve Platforms

- Balancing energy platforms: meeting each country's upward/downward balancing demand through netting of needs and activating the most efficient bids in Europe.
- *Balancing reserve platforms:* regional sharing/exchange market driven platforms
- Both types of platforms aim at considering operational security constraints & increasing the security of supply in Europe



The balancing chapter covers the period from **June 2024 to May 2025**, and associated Performance Indicators chapter (PI's covering the calendar year 2024), jointly with respective individual TSO's executive summaries.

The balancing chapter describes the **design and implementation of balancing markets** at pan-European, regional and national levels, emphasizing on:

- development and harmonisation of methodologies → ACER decision on cross-zonal capacity allocation methodology, aFRR IF and pricing methodology
- further development of and accessions to **balancing energy platforms**
- balancing reserve platforms: implementation of a harmonized market-based CZCAOF (COBRA project)

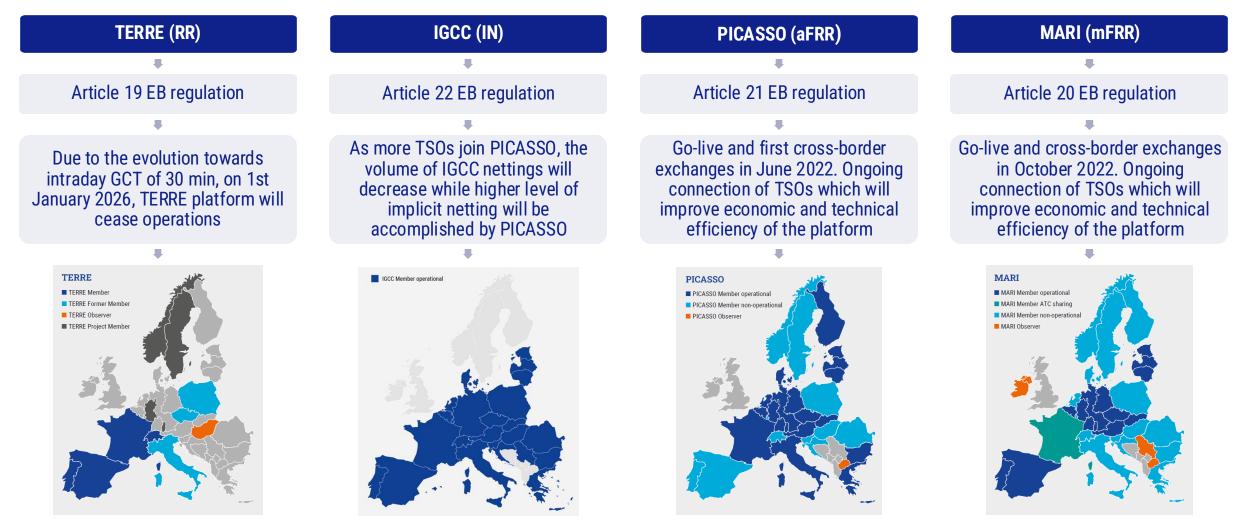


To comply with the obligations of the Article 59 **EB Regulation**¹, ENTSO-E publishes, on a yearly basis, a **European report on integration of balancing markets.**

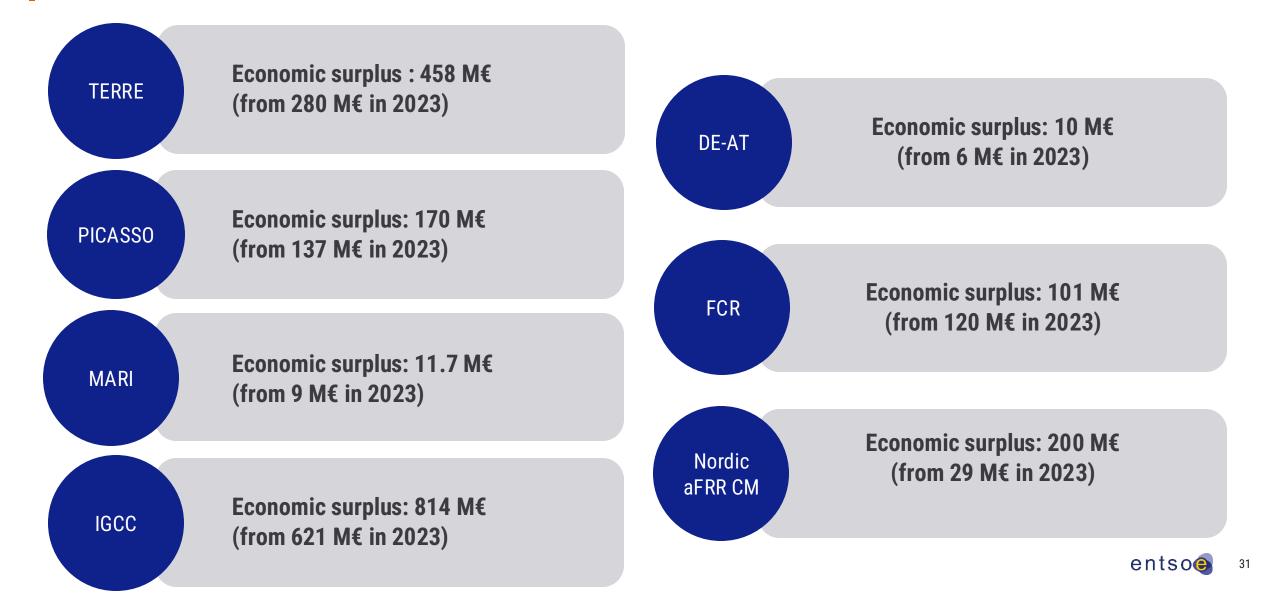
In 2025, ENTSO-E publishes this report as chapter of the Market Report 2025.



Balancing Markets – EU Balancing Platforms to Increase Security of Supply and Economic Efficiency of Balancing Activities in Europe



Balancing Cooperations lead to Significant Economic Surplus in 2024





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Compliance with CEP70 requirements

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What is the CEP 70 requirement about?

- Article 16(8) of the EU Electricity Regulation: ٠ requires European TSOs to make at least 70 % of the transmission capacity (respecting operational security limits) available for cross-zonal electricity trading.
- To be implemented **by end of 2025 at the latest**: ٠
 - > TSOs can request **temporary derogations**, also beyond 2025 provided technical justification and analysis that ensuring 70% would endanger operational security
 - Member states can invoke an **action plan** in case of structural congestion
 - **Last resort measure:** reductions following validation step in capacity calculation \geq i.e. if the potential of available remedial actions is not sufficient to secure the grid



Hence, those MSs with derogation or Action Plans apply a less ambitious target for a given year or a transition period



Min. 70 %



Who monitors the fulfilment?

Assessment of compliance (based on TSOs contributions) subject to NRA approval



Why do several monitoring reports exist?

- Individual assessments by national regulatory authorities •
- ENTSO-E market report as easily accessible overview of these individual national • assessments
- ACER publishes an independent assessment as part of its annual market monitoring under application of a uniform methodology. ACER's approach is not identical to the approaches of individual NRAs when approving the TSO's contributions.



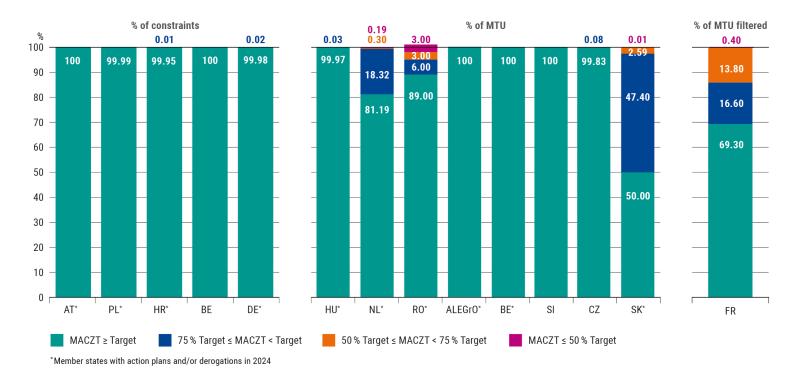
Day-ahead vs. Intraday

- Results presented focus on Day-ahead timeframe
- Ongoing discussion on the application of 70% via virtual capacities in the Intraday timeframe, in particular in the CACM 2.0 context
- ENTSO-E market report summarizes TSOs' main concerns on a strict application of the 70% minimum capacity requirement in the ID time frame as in practise it will be offset to maintain operational security
 - In summary, physical capacity cannot be increased beyond security limits
 - However, provision of sufficient CZC for the ID timeframe is crucial to a well-functioning ID market and the integration of renewable energy resources into Europe's power system.



National monitoring results for 2024 for Core

as comparison to the <u>applicable</u> minimum capacity requirements (under consideration of derogations & action plans) [%] in 2024

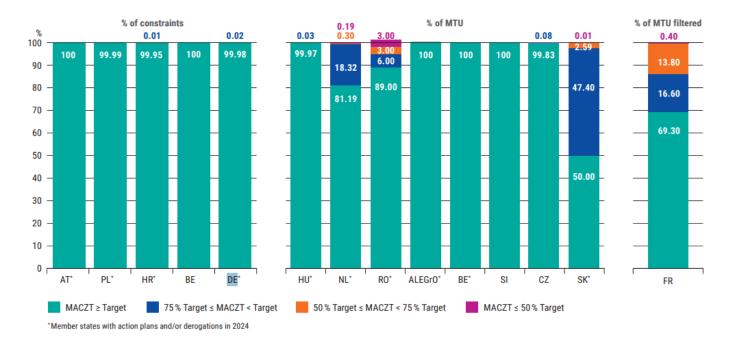


How to read the figure?

- Compliance assessments are national & applied methods can differ
 - Visualized by grouping of methods (% of constraints / of MTU / of MTU filtered)
- Target = applicable value in 2024
- Different colours indicate the percentage of time (with or without consideration of constraints) in 2024 during which a MS reached – or partly reached - its applicable target value

National monitoring results for 2024 for Nordic CCR – for Flow-based period only

as comparison to the <u>applicable</u> minimum capacity requirements (under consideration of derogations & action plans) [%] in 2024 (from October 29 to December 31 -> only Flow-based)



Introduction of Flow-based market coupling in Nordic CCR marks a big milestone achieved

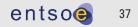
- Compliance assessment considers only Flowbased period
 - Comparison of cNTC and FB CC not considered being useful
- No action plans or derogations in 2024

- > Monitoring results provide a mixed picture for the Nordic CCR
- Yet, considered period is only two months hence, careful interpretation



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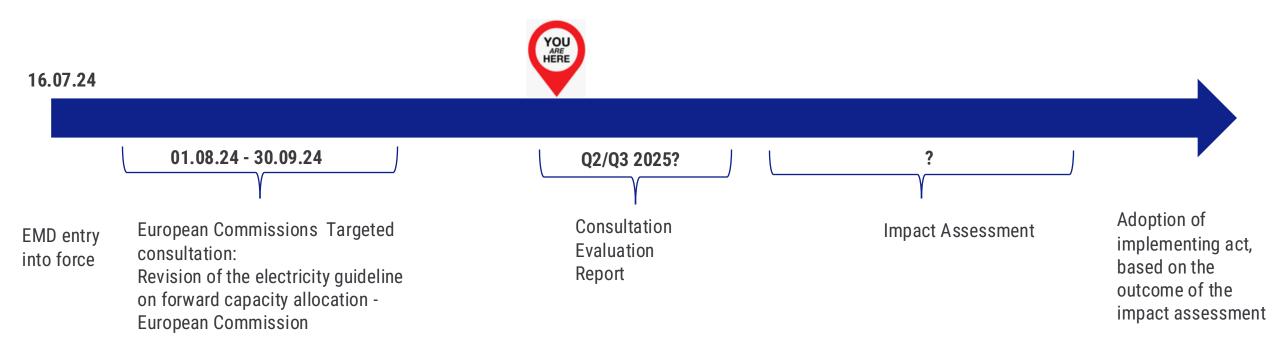
FCA2.0



Forward Capacity Allocation 2.0

Next network code to be updated after CACM

The Forward Capacity Allocation update is expected to be revealed in 2026



Forward Capacity Allocation 2.0 - Extended Impact Assessment Needed

When establishing an updates network code analysis needs to be given time

TSOs see two points that needs to be given extra time before adoption large changes to TSOs involvement in the European forward market

Collaterals in the Forward market

Change to purely financial markets will require TSO to post collaterals

- Potential decrease in grid investment
- Increase cash requirement
- Increase of costs
- Credit rating devaluation risk

Volume Determination

If changing the product type offered by TSOs, the offered volume is of great concern for the TSOs

- Same volume potentially larger risk with different products
- Risk of under coverage with financial contracts
- Statical approach risk of harming grid investments

Holistic impact assessment is performed before decision on TSOs involvement in the European forward electricity market.

Q/A Session





The <u>Slido app</u> must be installed on every computer you're presenting from (i)



How to change com



Any more questions?



If you have any remaining question, please send it to <u>market@entsoe.eu</u>



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to rate the webinar and leave anonymous feedback.



Thank you very much for your attention!

