

Balancing Platforms Stakeholders' Workshop

28 October 2026



1. Welcome

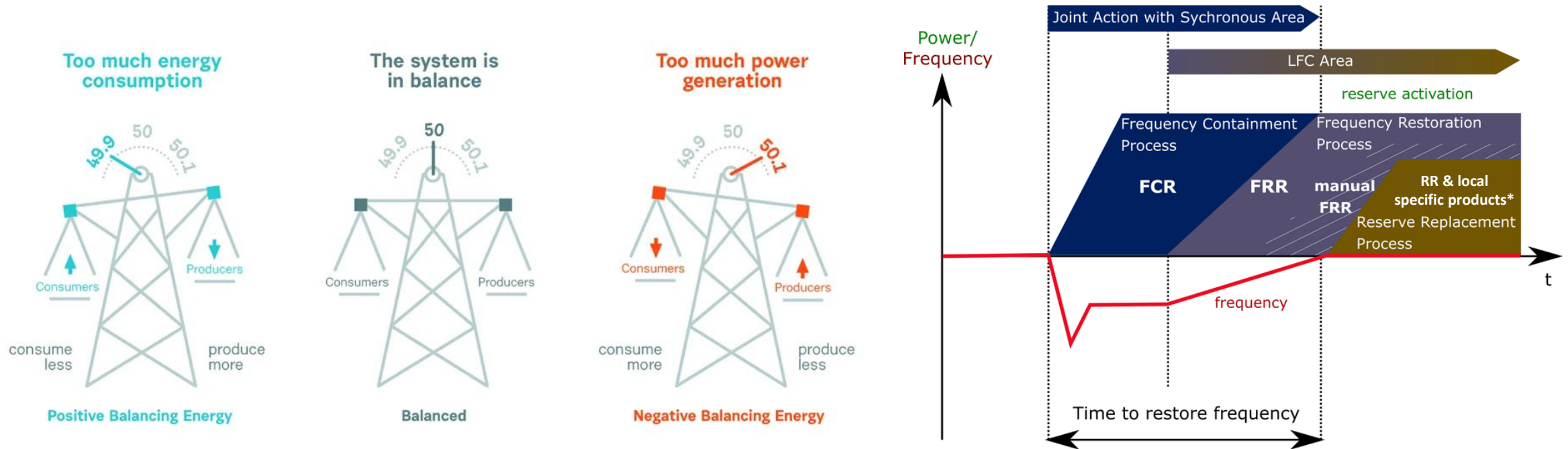
Agenda

No	Subject	Time	Who
1.	Welcome and practicalities	10:00-10:10	Daniel Costa
2.	Balancing energy platforms – introduction	10:10-10:20	Kasper From-Nielsen
3.	MARI - Project overview and outlook - Operational experiences, KPIs	10:20-10:55	Michael Bonda
4.	PICASSO & IGCC - Project overview and outlook - Operational experiences, KPIs	10:55-11:30	Kasper From-Nielsen / Dominik Schlipf
5.	Q&A & closure of the workshop	11:30-12:00	TSOs

2. Balancing energy platforms – introduction

What is Balancing?

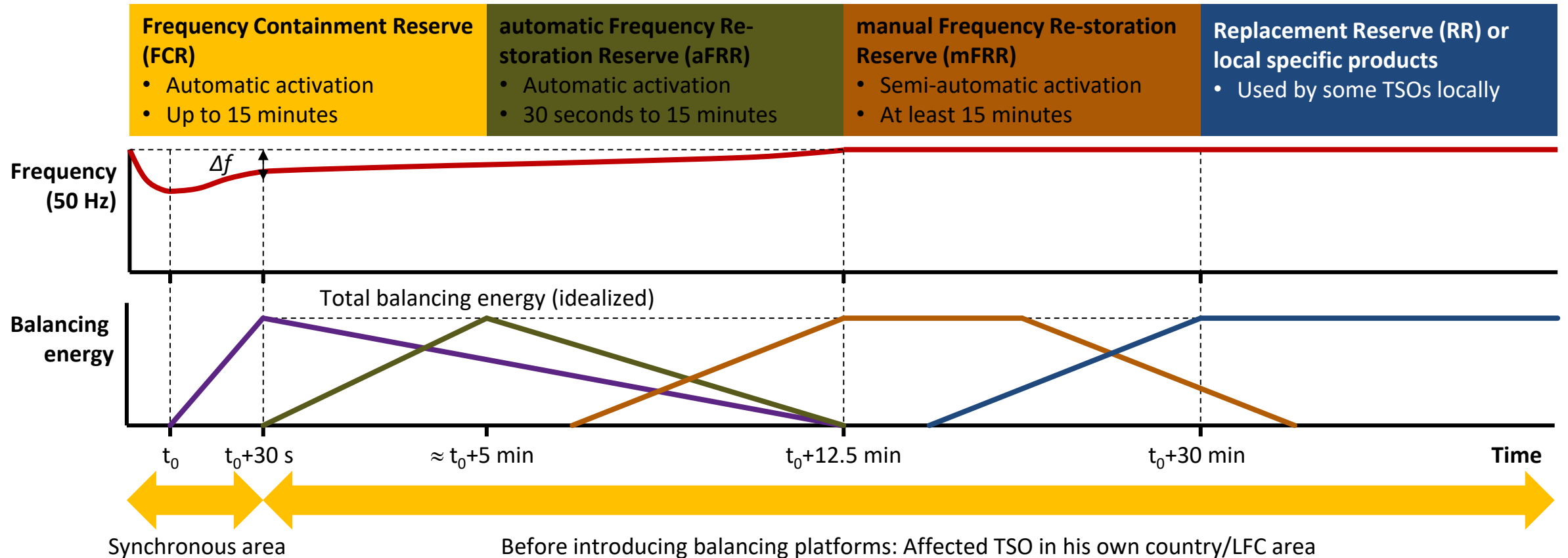
- For a good and reliable power system, generation of electricity and use (load) of electricity **must always be equal**.
- In practice, it is **impossible to exactly predict what we all consume**. Hence **TSOs perform power balancing by activating so called reserves**.
- TSOs make sure that at any time they can perform **power balancing**. As a result, they have processes and markets in place where TSOs can ask market participants to change real-time their power generation or consumption.



* Used by some TSOs locally.

Why are there different Balancing Services?

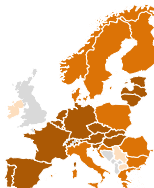
Balancing services according to activation time (without imbalance netting, IN)

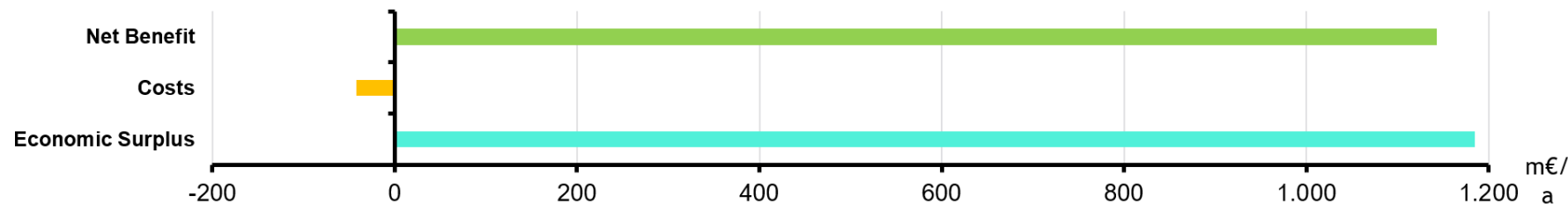


- Different balancing services allow TSOs to cover imbalances in different time frames (from few seconds to various quarter hours) and areas (from LFC areas to synchronous areas).

Establishment of European Balancing Platforms

- In December 2017, the **Electricity Balancing (EB) Regulation** (2017/2195) entered into force. It defines the mandatory development of European markets for balancing energy by building European platforms and introduces harmonised rules for voluntary cooperations.
- TSOs have made many efforts to **harmonise standard balancing products** and **integrate balancing platforms** over the years.
- Many European **TSOs are already connected**, and others are making efforts **to connect soon** to the European platforms.
- **The balancing platforms use available Cross-Zonal Capacity (CZC)** after the wholesale trading markets like the day-ahead market coupling (SDAC) and intraday coupling (SIDC).

Project / Balancing service	IGCC / IN	PICASSO / aFRR	MARI / mFRR	TERRE / RR
Participants				
Economic surplus for 2025	301 m€	464 m€	104 m€	316 m€



➤ **2025: All platforms together achieved an economic surplus of ~1.185 bn€ with total project cost* of ~42 m€**

Harmonized maximum and minimum balancing energy price

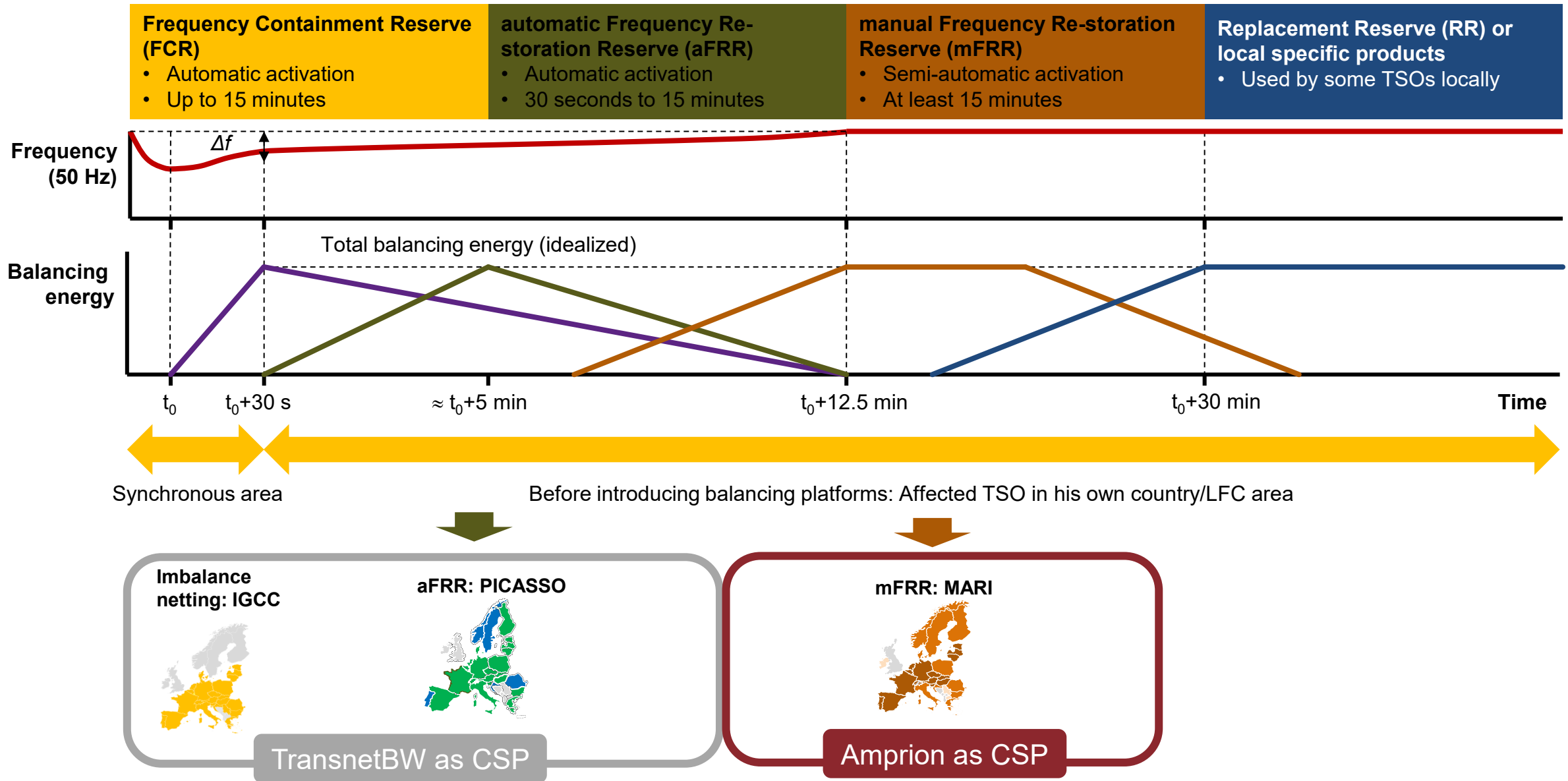
- Since 24. July 2026, the harmonized maximum and minimum balancing energy price (HMMBEP) is applied in the balancing platform. This price is at the moment +/-15.000 €/MWh for positive and negative balancing energy.
- In Article 10 of ACER 09/2024 (Methodology for pricing balancing energy and cross-zonal capacity used for the exchange of balancing energy or operating the imbalance netting process), rules to adjust the HMMBEP are defined, the HMMBEP shall be increased by 500 €/MWh if the following triggering conditions are met twice within 28 days within one uncongested area*:
 - The mFRR CBMP (from MARI) in the affected imbalance settlement period exceeded 70% of the harmonised maximum balancing price
 - The volume weighted average of the aFRR CBMP (from PICASSO) in the affected imbalance settlement period exceeded 70% of the harmonised maximum balancing price
 - the sum of the balancing border capacity limits on import to that bidding zone in MARI is at least equal to the sum of the volume of bids offered in the mFRR-Platform and aFRR-Platform in that bidding zone by its largest BSP in the positive direction;
- The trigger criteria are evaluated on a daily basis by the balancing platforms.
- In the event that the harmonised minimum clearing price for the single intraday coupling in accordance with Article 54(1) of Commission Regulation (EU) 2015/1222 decreases, the harmonised minimum balancing energy price shall automatically decrease by the same amount.
- **In case an adjustment is triggered, the TSOs of the balancing platforms will verify the results and inform ACER and the market (via ENTSO-E) until 7 days after the occurrence of the second event. BSPs will be informed via national processes.**

*in the follow, only the case for positive balancing energy is shown, this applies with other signs also for negative balancing energy

3. MARI

Agenda

- | | | |
|----------|--------------------------------------|---------------|
| 1 | Project overview and outlook | 10:20 – 10:30 |
| 2 | Operational experiences, KPIs | 10:30 – 10:55 |



- MARI has been set up already in 2017 to provide the basis for a European mFRR platform.
- Currently, 29 TSOs from 26 countries have joined the project (Creos as a non-operational member only).
- Start of dry-run on 2022/07/18, technical go-live on 2022/09/15
- 2026 accession expectation to come:
 - 11/2026: Terna (IT)
 - 12/2026: PSE (PL)
- For further accessions, see the accession roadmap published mid-October [here](#).

Member TSO operational

Technical readiness to participate operationally*

Member TSO non-operational

Technical readiness**

MARI observer

* As of 18 Feb 2026, ESO (BG) is operating in island mode. While no bids or demands are submitted to MARI, ESO has the technical readiness to participate operationally.

** The technical readiness of Swissgrid has been acknowledged. The participation of Switzerland in the mFRR-Platform is regulated based on article 1.6 and 1.7 of the EB Regulation and is currently the subject of litigation by Swissgrid at the Court of Justice of the European Union.

50Hertz,
Amprion,
ČEPS,
TenneT DE,
TransnetBW

APG

REN
Elering
AST
Litgrid

SEPS

RE

Elia

ESO

TTN

ELES

RTE

MAVIR

2022

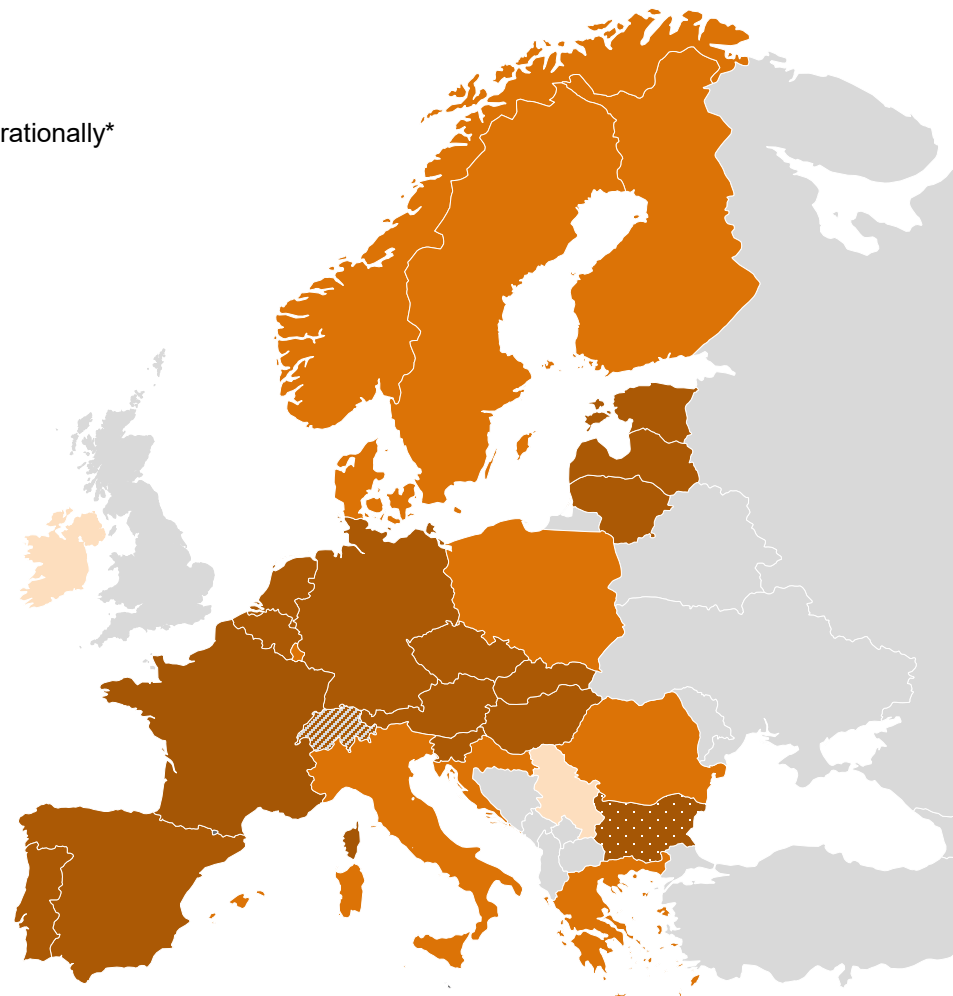
2023

2024

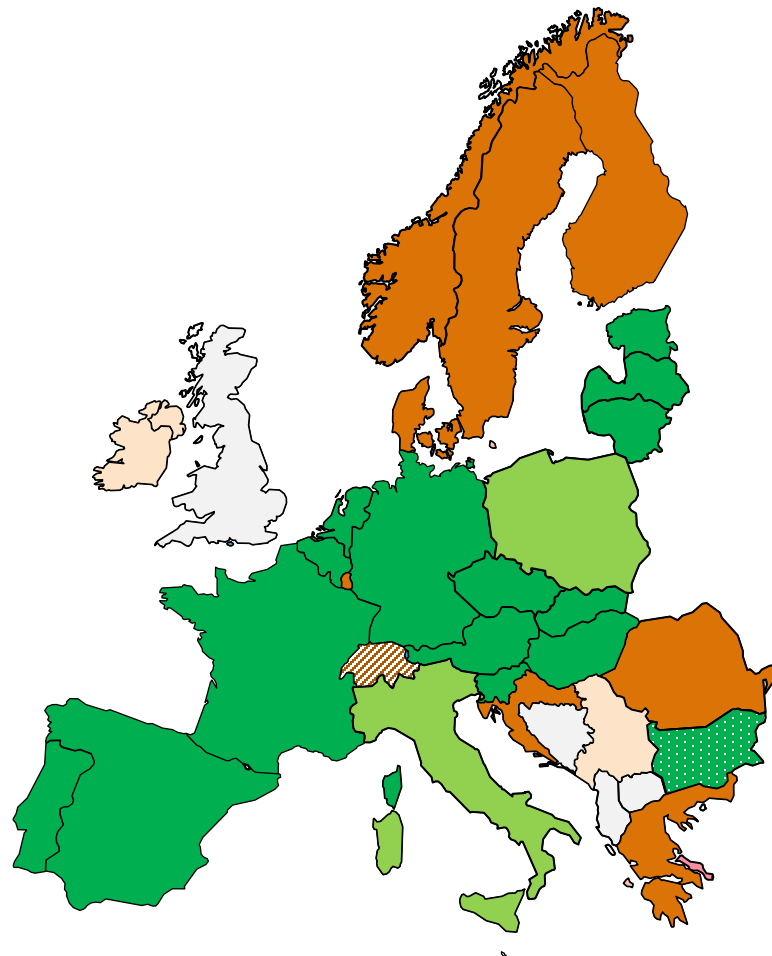
2025

2026

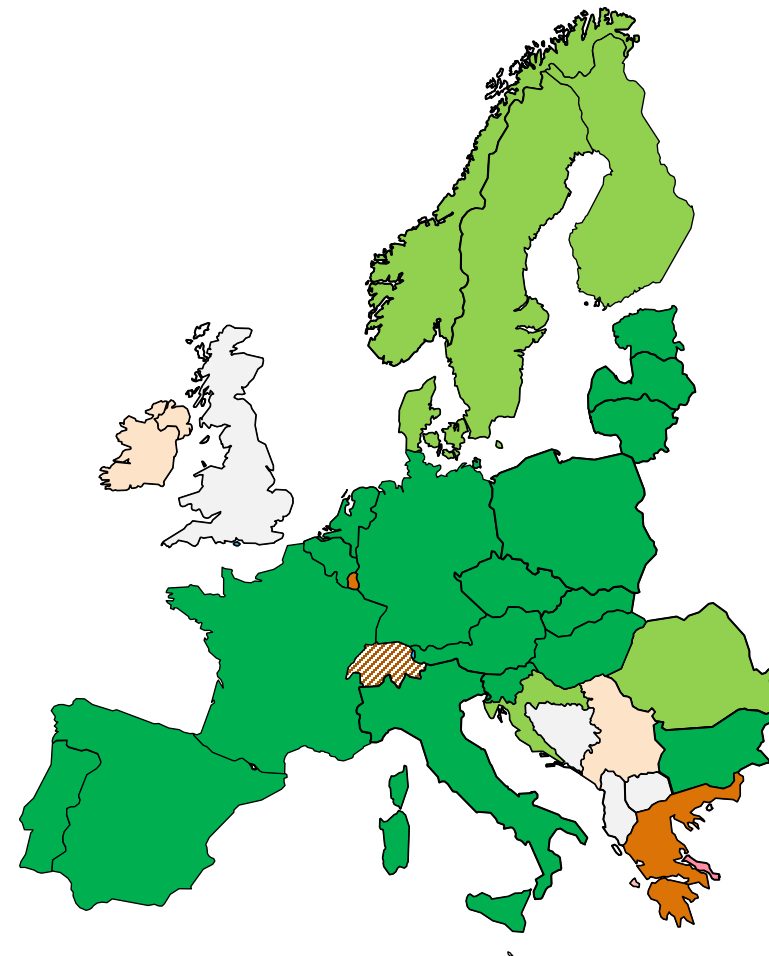
Accession



End 2026



End 2027

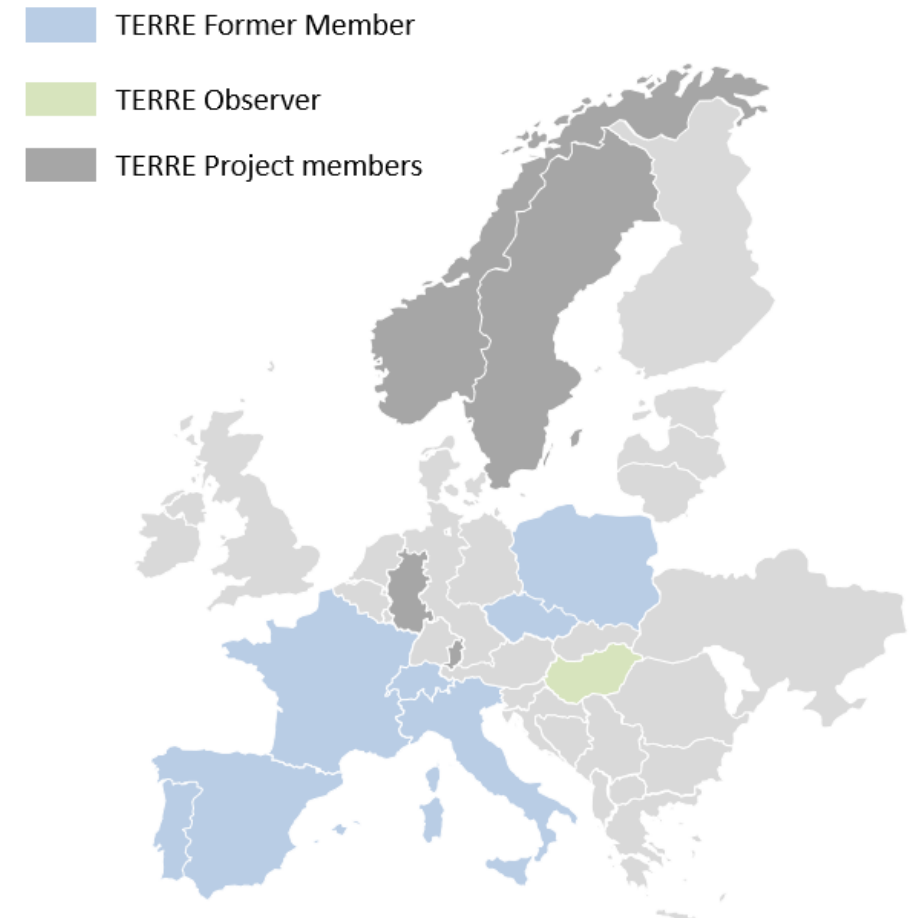


- Member TSO operational
- Technical readiness to participate operationally*
- Go-live foreseen by end of year
- Member TSO non-operational
- Technical readiness**
- MARI observer

* As of 18 Feb 2026, ESO (BG) is operating in island mode. While no bids or demands are submitted to MARI, ESO has the technical readiness to participate operationally.

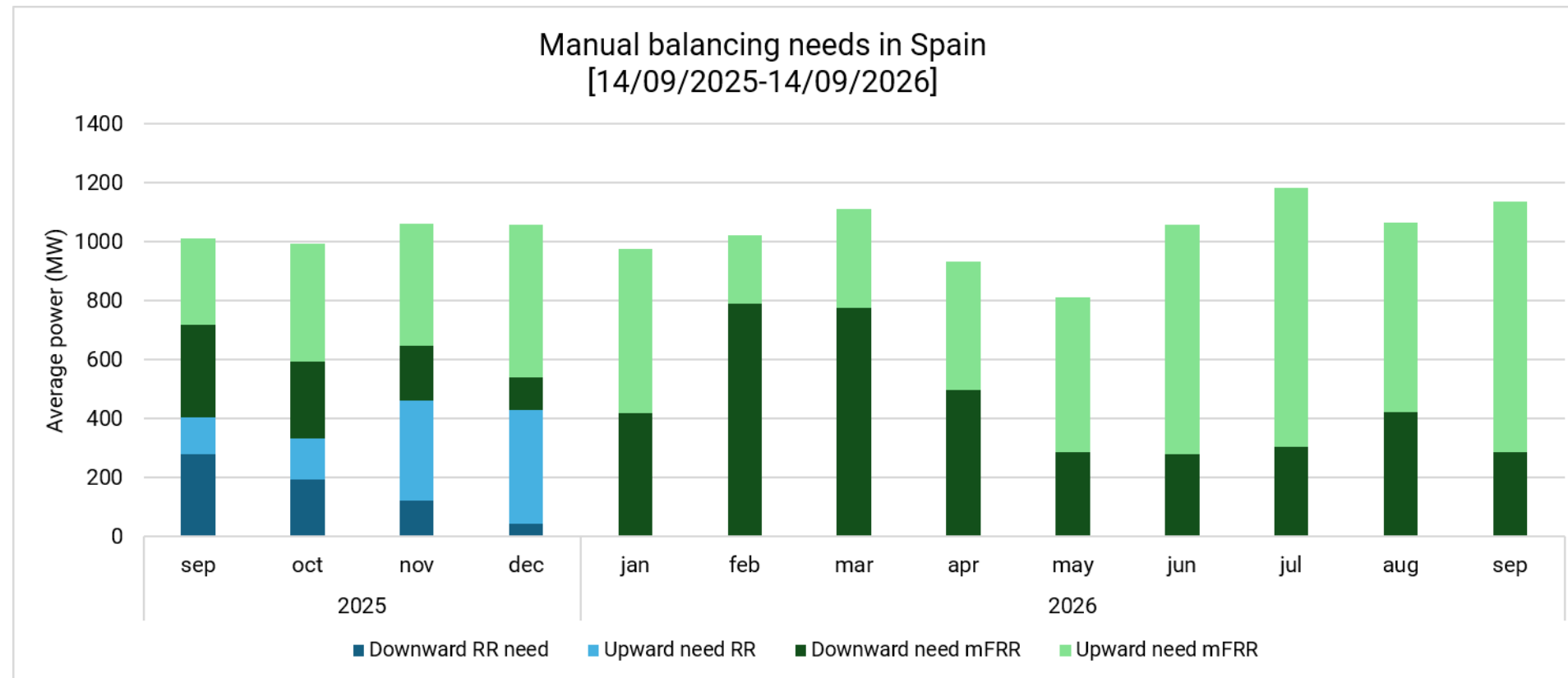
** The technical readiness of Swissgrid has been acknowledged. The participation of Switzerland in the mFRR-Platform is regulated based on article 1.6 and 1.7 of the EB Regulation and is currently the subject of litigation by Swissgrid at the Court of Justice of the European Union.

- In the last EBSG meeting question was asked whether the TERRE phase-out had any impact on the operation (bids/activation) in MARI.
- The following TSOs were TERRE former member, but not operational:
 - CEPS (CZ; disconnected on 01/07/24), PSE (PL; no go-live), and Terna (IT; disconnected on 01/01/25).
- During this period, the following TSOs were connected and operational in TERRE until end of 2025:
 - Red Eléctrica (ES), REN (PT), RTE (FR), Swissgrid (CH).
- 4 TSOs that were still operational in the platform have been disconnected in a coordinated way:
 - RTE and Swissgrid disconnected from the platform on the 17/12/25 respectively at 10am and 12am.
 - Red Electrica and REN disconnected from the platform on the 30/12/25 both at 10am.
- **For MARI, impact is limited to the operational TSOs Red Eléctrica and REN connected to both, MARI and TERRE**
 - RTE accessed to MARI in April 2026 (and Terna intends to access to MARI in November 2026).



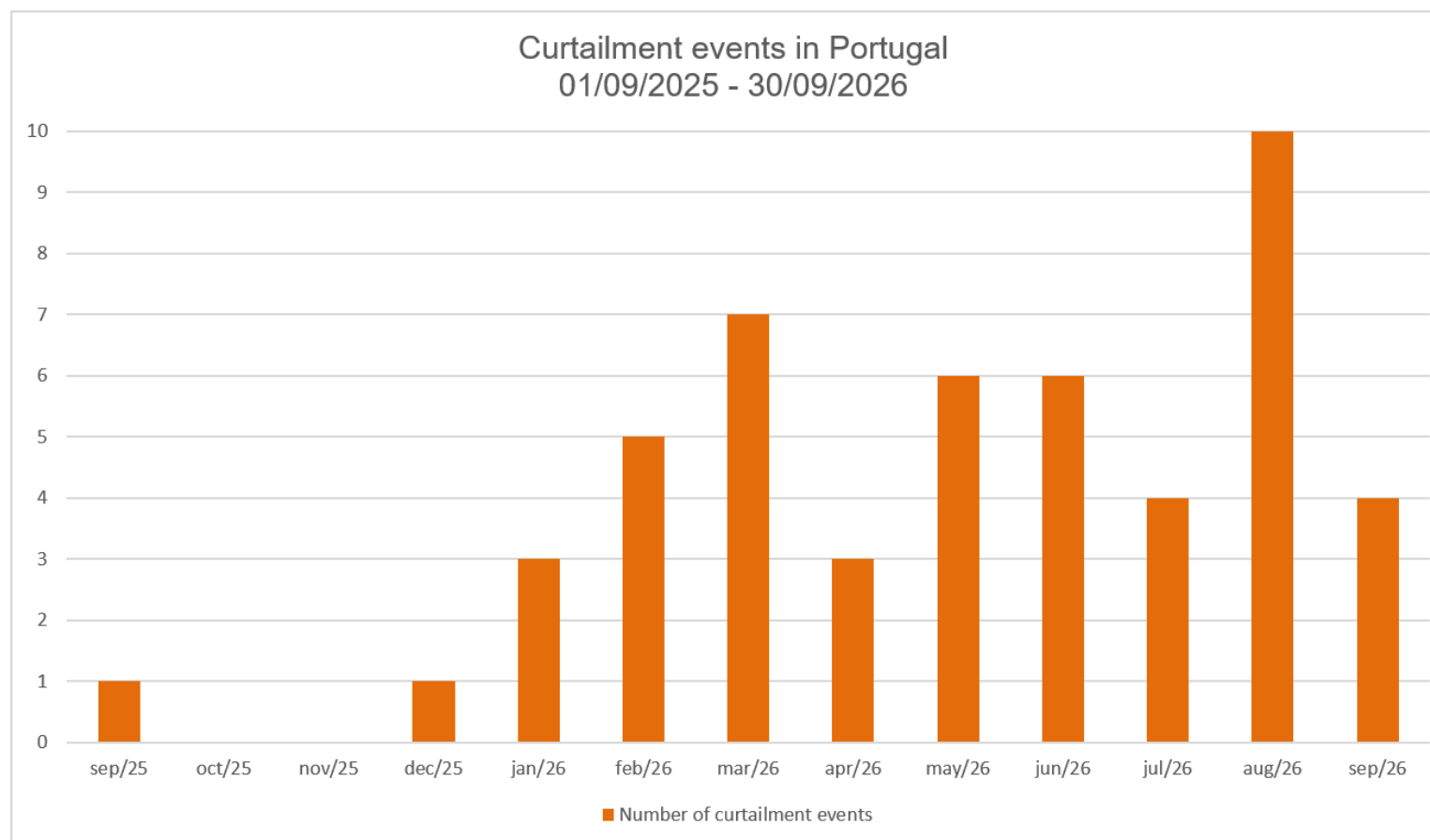
TERRE Phase out and impact on MARI

MARI relevance after TERRE decommissioning: example of Red Eléctrica /Spain



- The average imbalance that was solved through manual products TERRE+MARI is maintained independently of the end of TERRE.
- **Following the decommissioning of TERRE, manual balancing demands in Spain have shifted to MARI, resulting in higher activation volumes and increasing the relevance of the MARI process for balancing the system in near real time.**

- **Following the end of TERRE, renewable curtailment in Portugal has increased**, particularly during periods of high renewable generation.
- Reduced access to cross-border balancing capacity has limited the system's ability to accommodate renewable surpluses, increasing the need for curtailment.

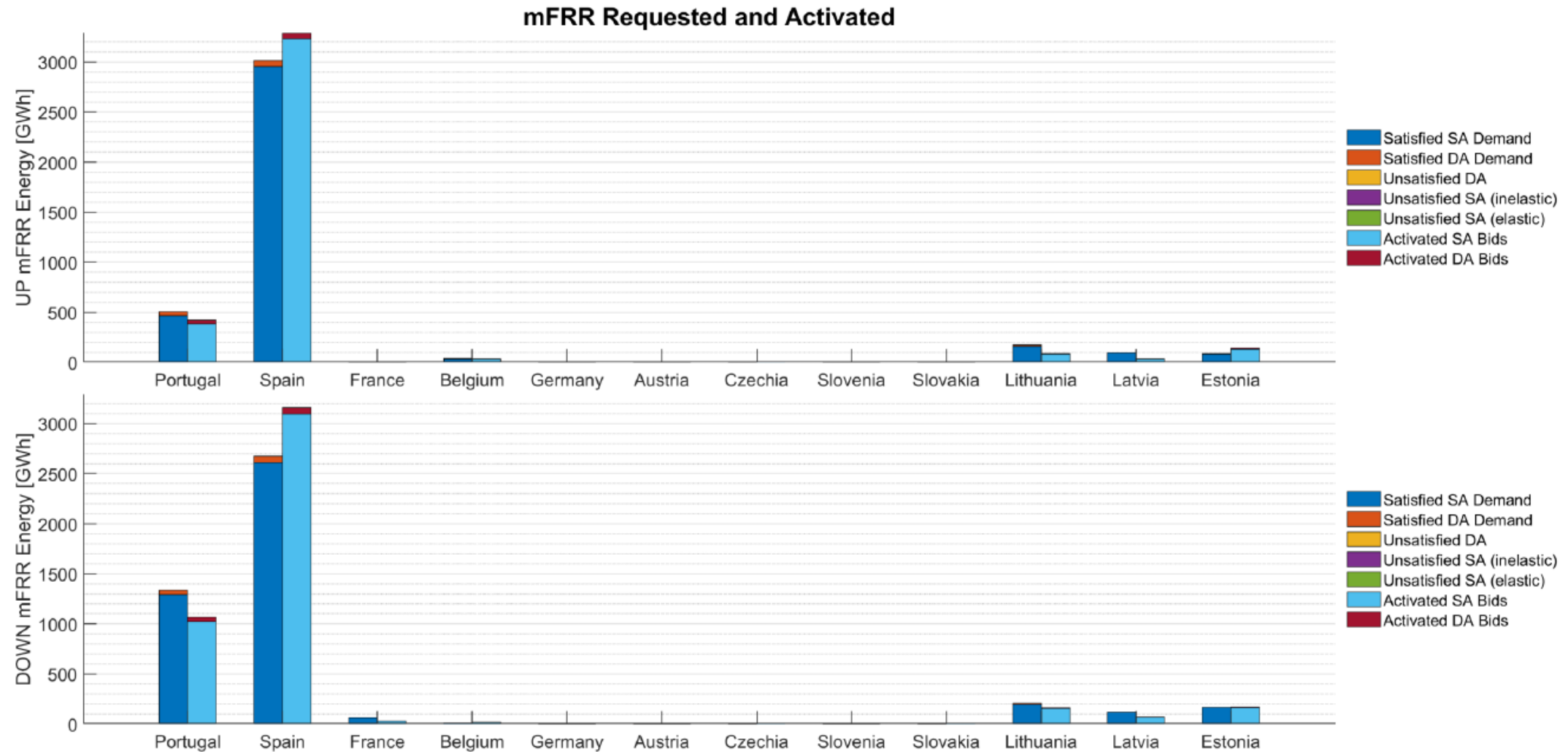


Agenda

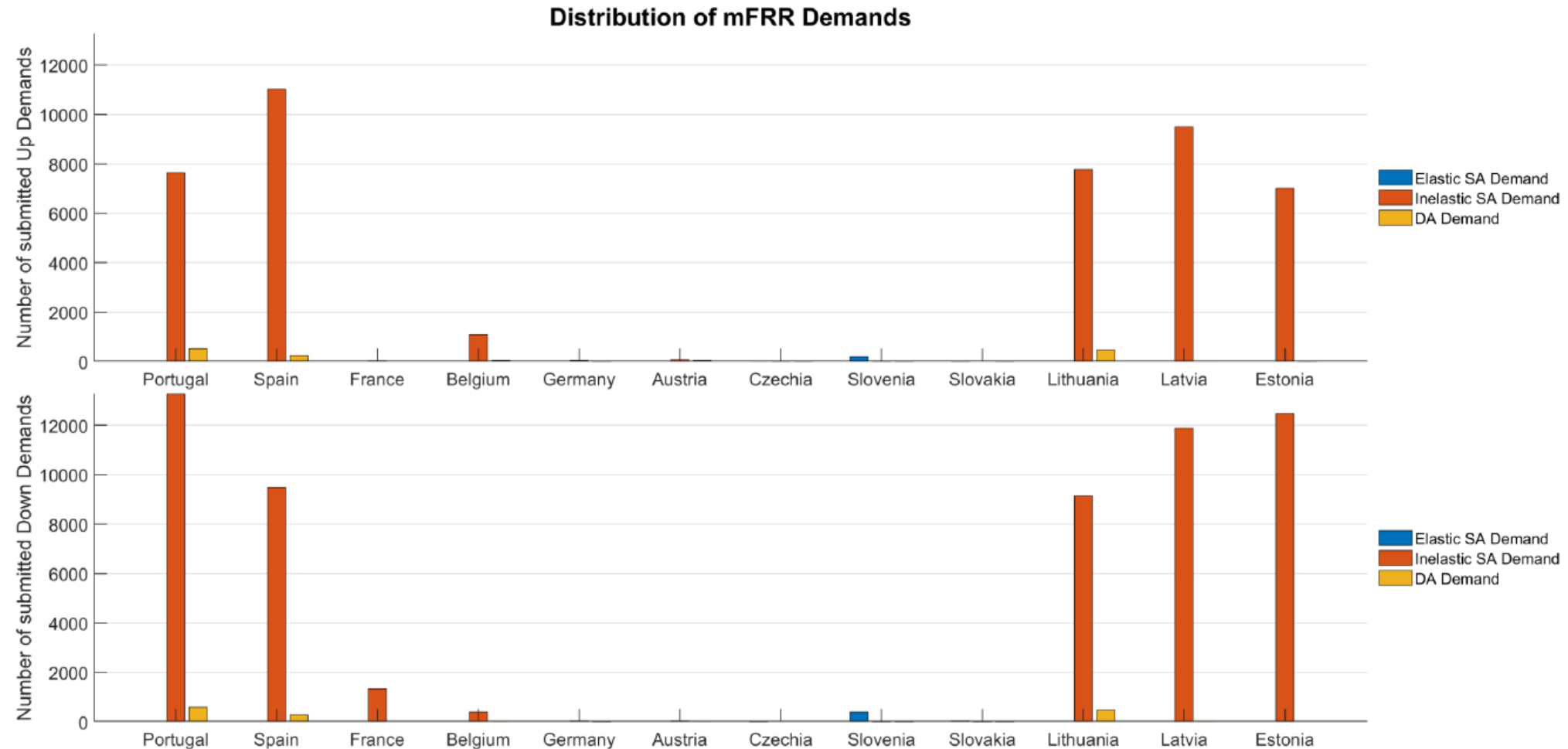
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|----------|--------------------------------------|---------------|
| 1 | Project overview and outlook | 10:20 – 10:30 |
| 2 | Operational experiences, KPIs | 10:30 – 10:55 |

Featured analysis

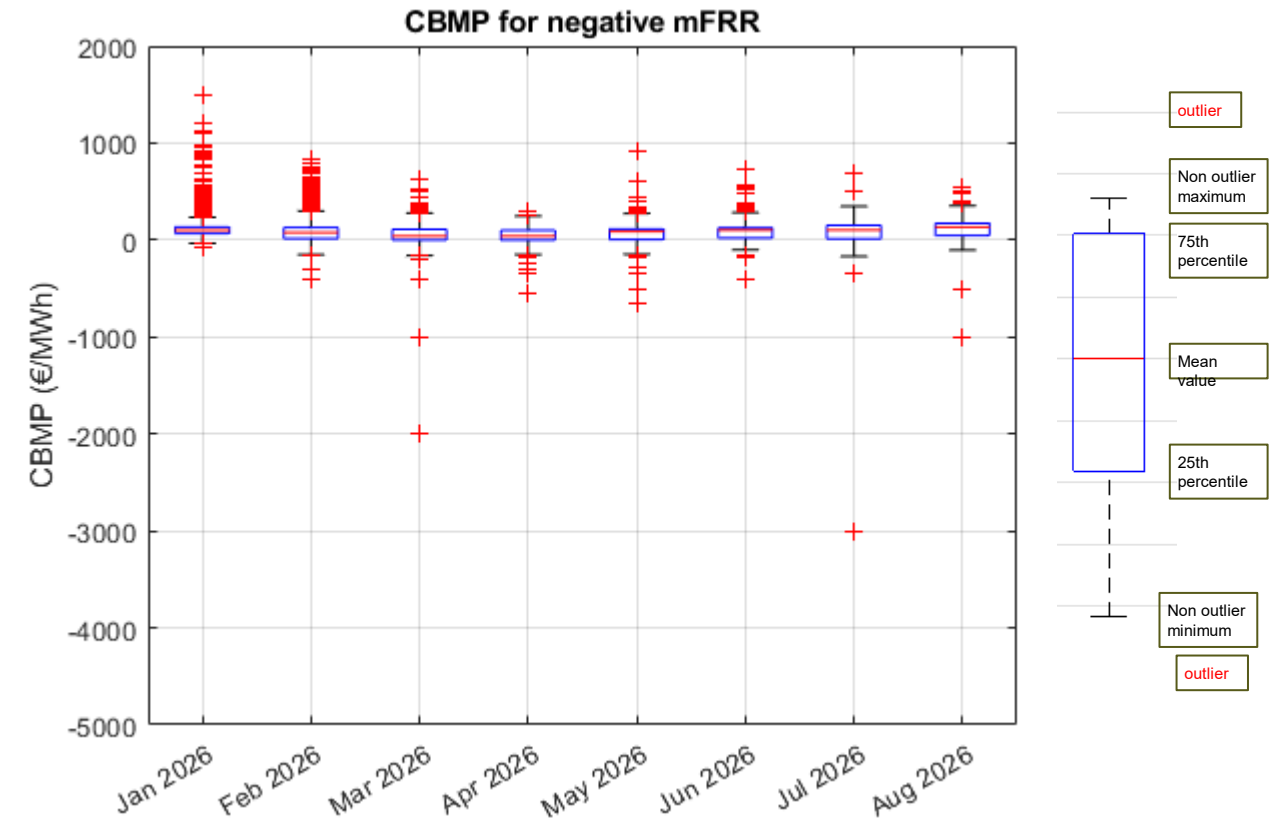
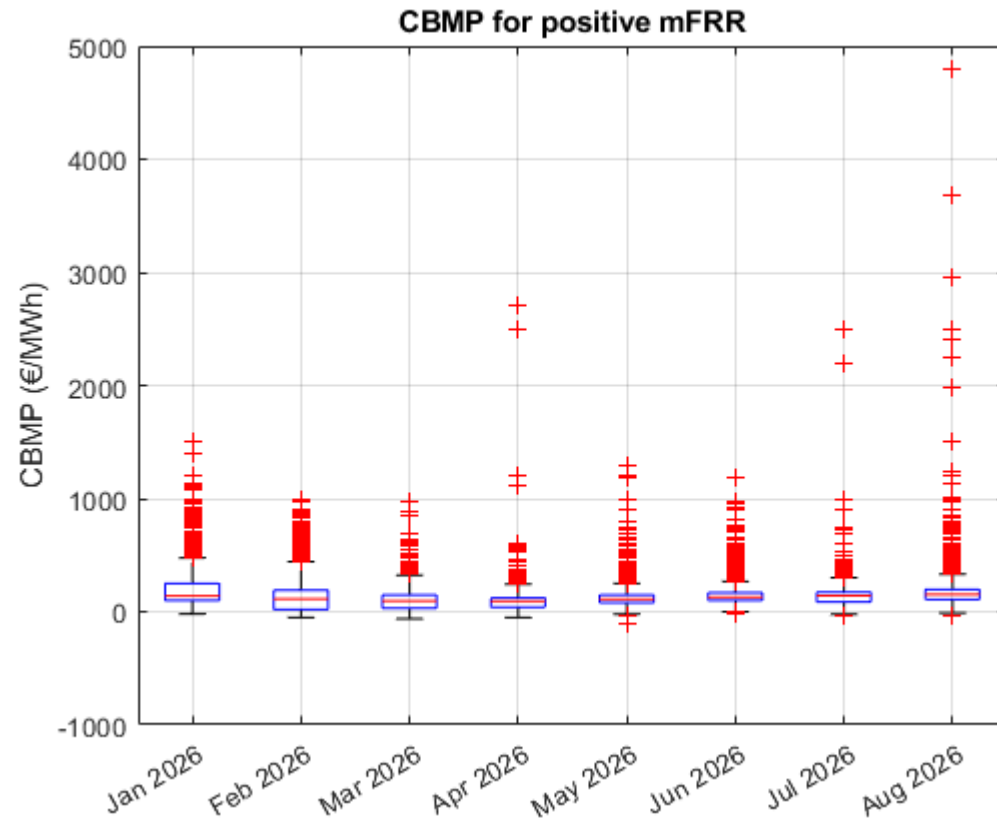
- mFRR requested and activated via MARI
 - Which country requests and which country activated mFRR?
 - Are there changes after the recent accessions?
- mFRR demand per country
 - To which extent are direct and scheduled activations used?
 - Are there changes after the recent accessions?
- mFRR prices
 - What prices result from the activation?
- Submitted/selected mFRR bid volumes and prices
 - How much bids are offered at which price level?
- MARI economic surplus
 - Economic benefits resulting from MARI



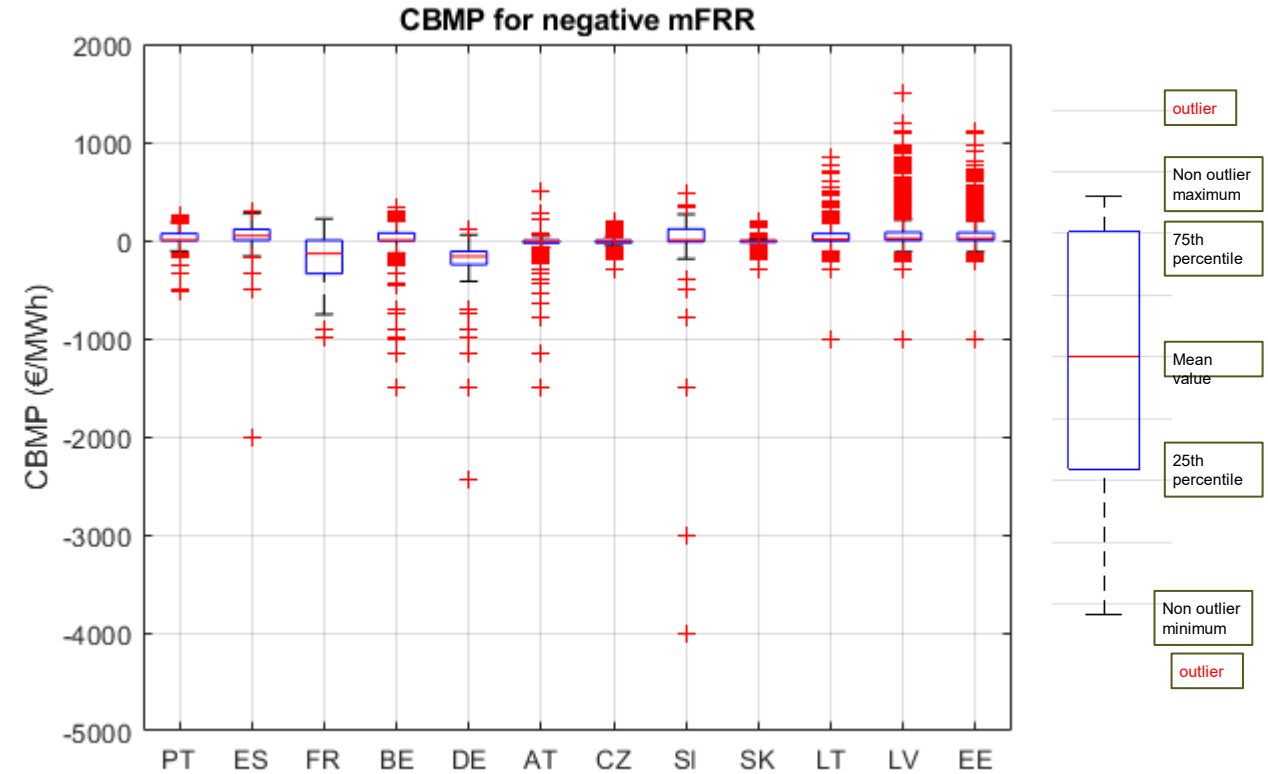
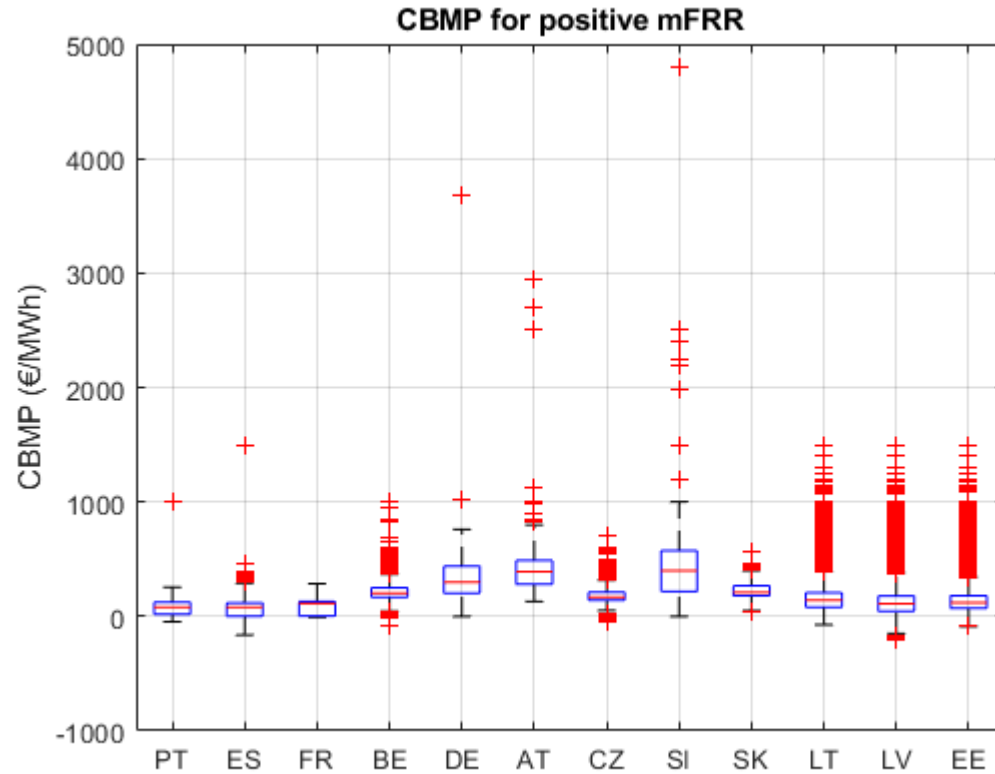
- Spain and Portugal activate by far the most mFRR.
- Spain and Portugal is followed by the Baltic countries. All other countries activate significantly less



- Frequent activations in Spain, Portugal, Estonia, Latvia and Lithuania.
- mFRR activation in those countries is almost continuous, 10,000 submitted demands correspond to 36 % of the MTUs.
- France and Slovenia have a considerable number of activations, considering that they only joined during 2026.



- For a better visibility of the majority of the prices, the y-axis is limited to $\pm 5,000$ €/MWh.
- Majority of the result in prices is smaller than 250 €/MWh
- Average prices for negative mFRR are larger than 0 €/MWh, i. e. only in rare situation TSOs have to pay for negative mFRR activation.
- The prices in 2026 have stabilized compared to 2025, i.e. there are fewer extreme prices



- For a better visibility of the majority of the prices, the y-axis is limited to $\pm 5,000$ €/MWh.
- Distribution of prices varies significantly between countries
- Average prices for both positive and negative mFRR are higher for central Europe compared to Baltics, Spain and Portugal
- Prices in the Baltic region show the most outliers

Considerations on mFRR submitted bid volumes:

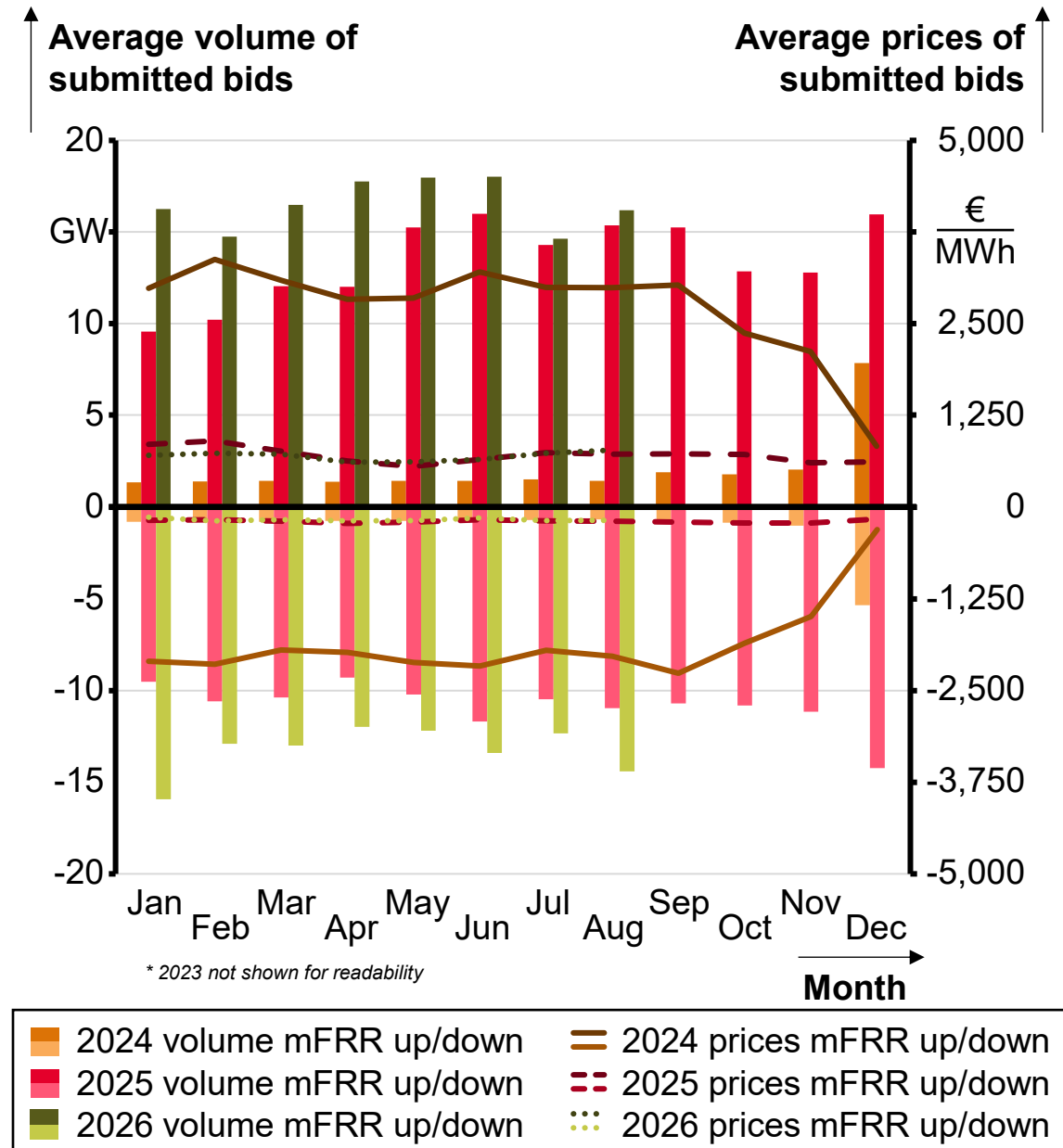
- Bid volume increased significantly with the accession of Red Eléctrica (ES) and REN (PT) in Dec 2024.
- ELIA (BE) go-live in May 2025 is visible in the amount of mFRR UP.
- The additional increase in liquidity in 2026 is not directly connected to additional accessions to MARI.

Considerations on mFRR UP submitted prices:

- Average bid prices were rather constant until Sep 2024. From then, the accession of the Baltic TSOs, REN and Red Eléctrica lead to a decrease of prices (higher activation probability).
- The average price of submitted bids stabilizes between 600 and 700 €/MWh.

Considerations on mFRR DOWN submitted prices:

- Prices for negative mFRR were very negative beginning of 2024. At the end of 2024, the accession of Baltic TSOs and later Red Eléctrica /REN decreased prices.
- Since then, average prices of submitted bids are at appr. -200 €/MWh and remain stable with further accessions.

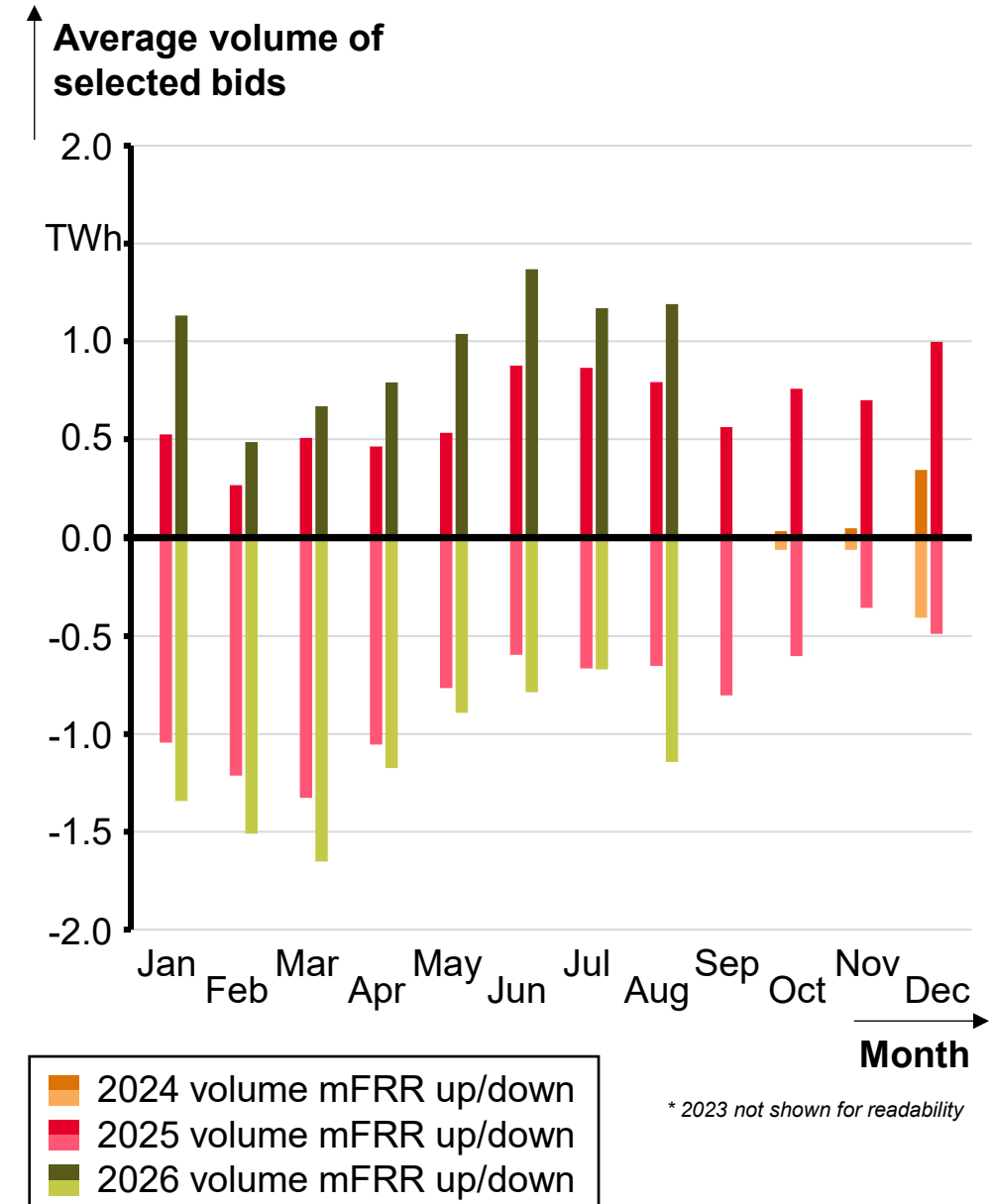


Considerations on mFRR UP selected bids:

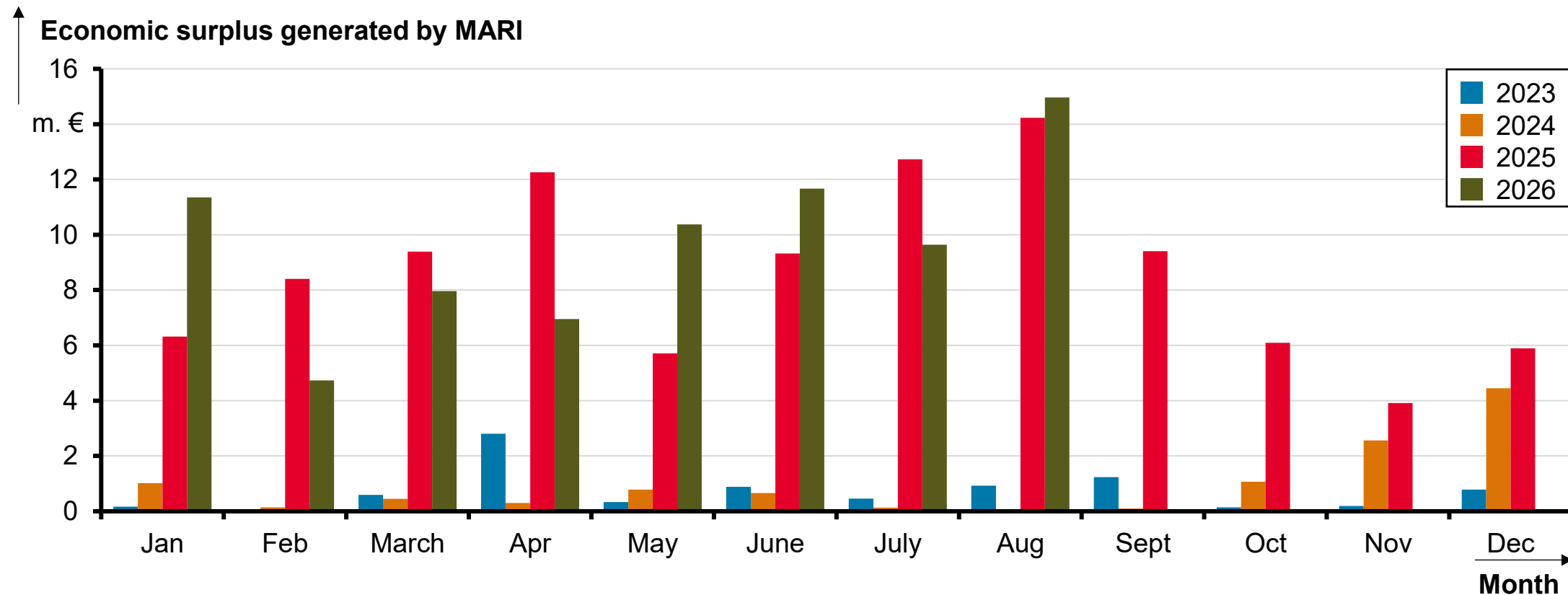
- Until September 2024, only TSOs reactively activating mFRR were connected to the platform. Therefore, the volume of selected was comparably low.
- With the connection of Baltics, selected volumes increased by a factor of approximately 20 (2 GWh → 40 GWh).
- With the connection of RE and REN, selected volumes again increased by a factor of 12 (40 GWh → 500 GWh).
- With the connection of further TSOs that actively use mFRR (ELIA and RTE) the volumes again increased with monthly selected volumes reaching more than 1 TWh.

Considerations on mFRR DOWN selected bids:

- Until September 2024, only TSOs reactively activating mFRR were connected to the platform.
- Therefore, the volume of selected was comparably low.
- With the connection of Baltics, selected volumes increased by a factor of approximately 50 (1 GWh → 50 GWh).
- With the connection of RE and REN, selected volumes again increased by a factor of 20 (50 GWh → 1000 GWh).
- With the connection of further TSOs that actively use mFRR (ELIA and RTE) the volumes again increased with monthly selected volumes reaching more than 1.5 TWh. The volume now stabilizes between 0.5 and 1.5 TWh.

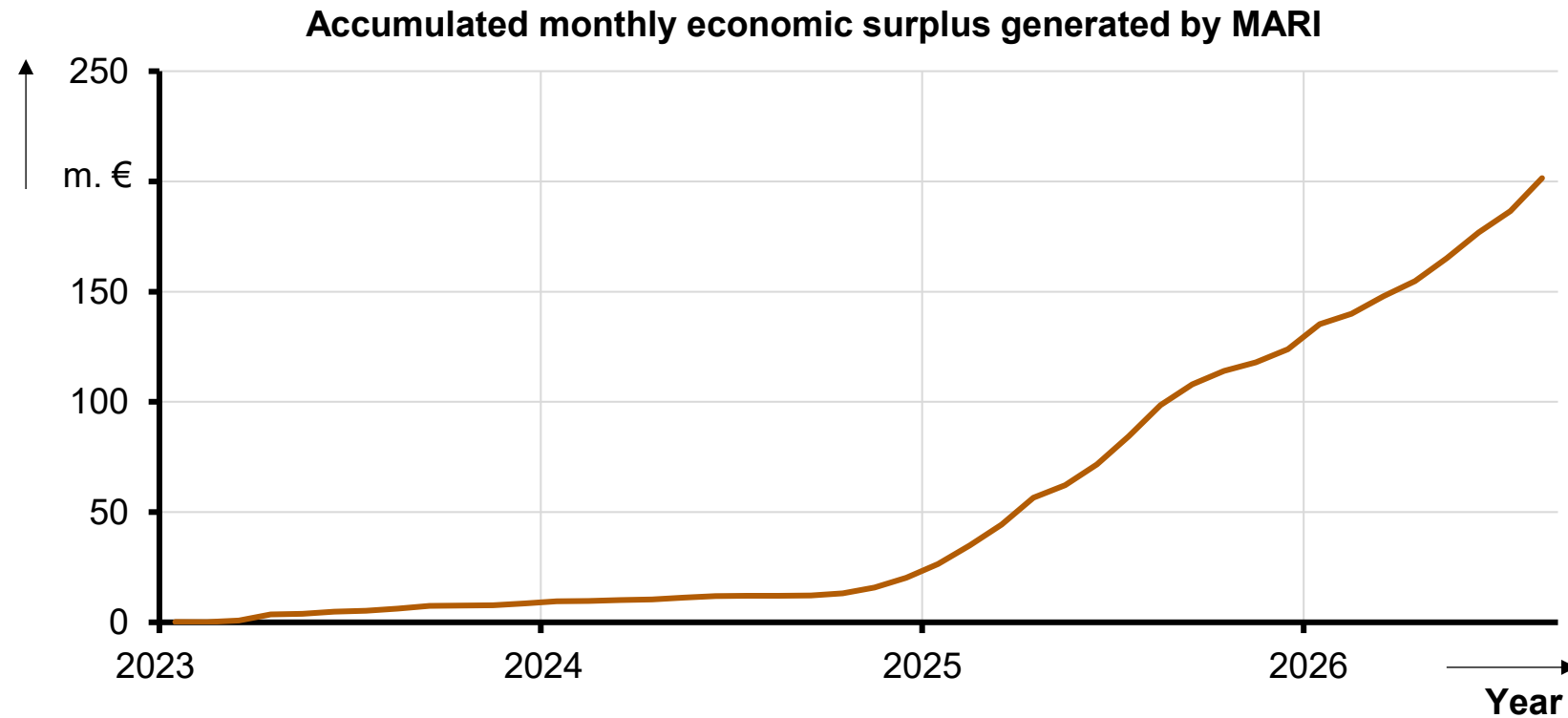


Calculation of economic surplus as comparison between actual mFRR activation with a reference scenario (same bids, demands and market design) but without exchange of balancing energy



- The economic surplus gained in 2025 (~104 m€) exceeds that of 2023 and 2024 combined by far.
- The economic surplus in 2026 remains on a similar level as 2025. So far, the economic surplus in 2026 amounts to 78 m€.

Alternative visualization of (accumulated) economic surplus generated by MARI since go-live



➤ Since go-live, MARI has generated an economic surplus of 201 m€.

4. PICASSO & IGCC



1. Project overview and progress

10:55 - 11:00 CET

2. Business Processes

11:00 - 11:20 CET

3. Operational Reporting

11:20 - 11:30 CET

Project overview and progress

PICASSO

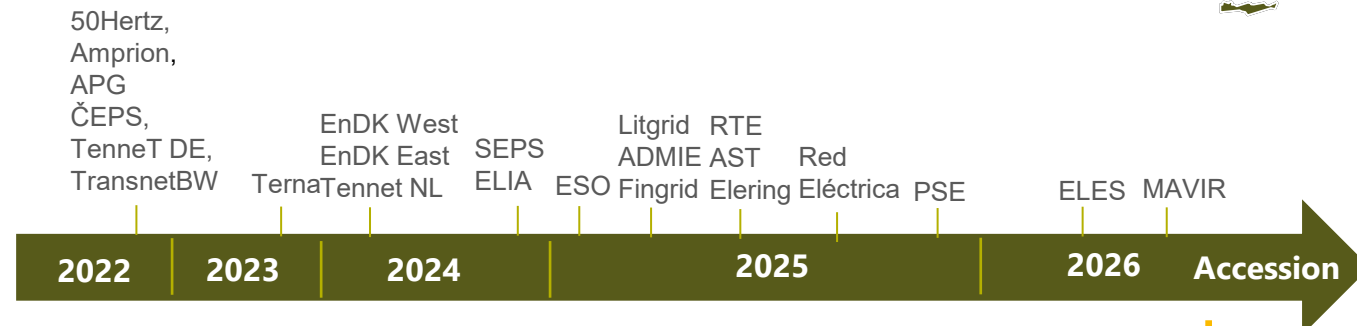
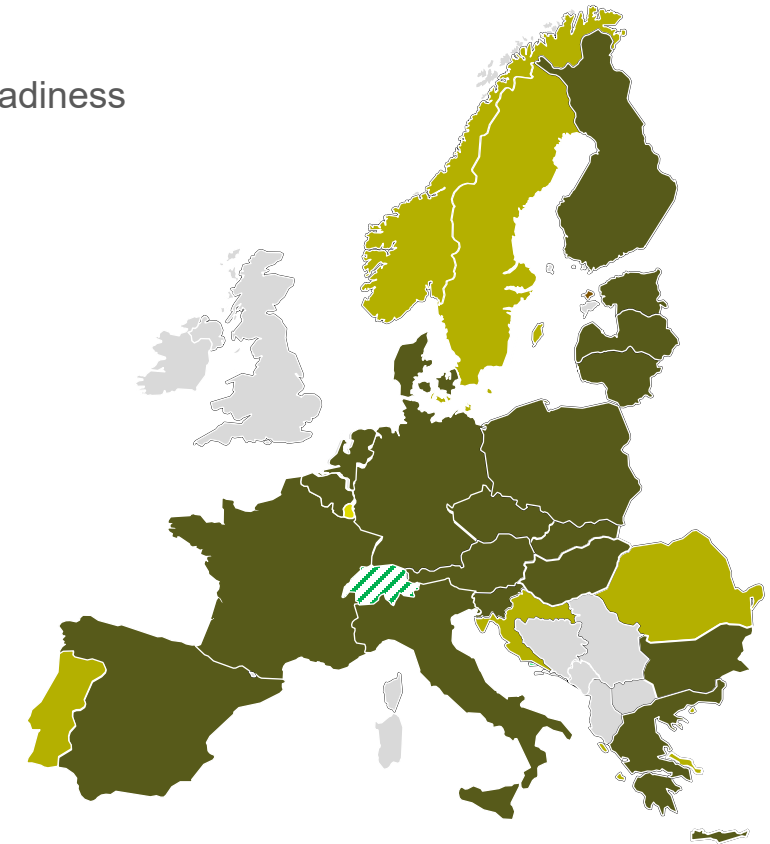


- The “Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation” (PICASSO) has been endorsed by all TSOs in 2017 as implementation project for the European aFRR platform pursuant to GL EB.
- Currently, 26 TSOs from 23 countries have joined the project.
- Successful go-live on June 1st, 2022 with CEPS (Czech Republic) as first operational member, earlier than required by the regulation
- First exchange of energy on June 22nd, 2022, after APG (Austria) and the 4 German TSOs joined the platform, on 19th July Terna (Italy) joined.
- On 15th March, Terna suspended its operation.
- In 2025, ESO (Bulgaria), Litgrid (Lithuania), ADMIE (Greece), Fingrid (Finland), RTE (France), AST (Latvia), Elering (Estonia), Red Eléctrica (Spain) and PSE (Poland) joined
- In November 2025, Terna came back in operation
- In July 2026, ELES (Slovenia) and in October 2026 MAVIR (Hungary) joined
- The remaining Member TSOs will gradually join the platform

Relevant Features

- The PICASSO Platform establishes a European domestic energy market for aFRR energy, based on a common standard product.
- PICASSO fosters operational stability by coordinating the activation of aFRR.
- Using a market time unit of 4 seconds. The PICASSO optimizer has more than 7.8 Mio. market clearings per.
- The PICASSO IT solution is also used for the International Grid Control Cooperation (IGCC), which is closely interacting with the PICASSO Optimization to maximize the economic surplus while ensuring that the netting potential of all IGCC TSOs is used.

- In operation
- Technical readiness
- Plan to join



*The technical readiness of Swissgrid has been acknowledged. The participation of Switzerland in the aFRR-Platform is regulated based on article 1.6 and 1.7 of the EB Regulation and currently the subject of litigation by Swissgrid at the Court of Justice of the European Union.

Project overview and progress

Accession Roadmap (last publication on 15th October 2026)



- The accession of member TSOs to aFRR-Platform (PICASSO) is planned in accordance with the following accession roadmap.
- PICASSO member TSOs and ENTSO-E share this accession roadmap for informative purposes only and it does not, in any case, represent a firm, binding or definitive position of PICASSO on the content.
- The content is subject to change as the implementation progresses, and new information becomes available.
- In particular, the feasibility of the present accession roadmap may depend on final detailed accession planning and possible operational and/or technical constraints that would result in the number of parallel accessions.

aFRR-Platform Accession Roadmap

Last updated on 15th October 2026 based on latest information available.

Country	Last published accession date	New accession date	TSO	2026												2027			
				4	5	6	7	8	9	10	11	12	Q1	Q2	Q3	Q4			
Romania ¹	Apr-27		Transelectrica																
Croatia	Q2-27		HOPS																
Portugal	Q3-26	Oct-27	REN																
Sweden ²	Q4-27		SVK																
EEA																			
Norway ³	Q1-28		Statnett																
Non-EU Member																			
Switzerland ⁴	Not available		Swissgrid																
	5.4.(b)(i)																		
	5.4.(b)(ii)																		
	5.4.(b)(iii)																		
	5.4.(b)(v)																		
Country/TSO				TSO connection to aFRR-platform / Go-live updated															

'The following TSOs — ČEPS, APG, 50Hz, AMP, TNG, TTG, TenneT BV, Energinet, SEPS, Elia, ESO, Litgrid, ADMIE, Fingrid, Elering, AST, RTE, REE, PSE, Terna, ELES and MAVIR — are connected to PICASSO.



- All TSOs with the obligation to connect as a result of the EB Regulation are connected to IGCC*.
- IGCC is the first Balancing Platform to achieve this objective.
- IGCC has 26 operational members
- With the go-live of ESO in March 2023, all EU-TSOs with a legal obligation are connected and can net their imbalances.
- In 2025, Baltic TSOs (Litgrid, AST and Elering) joined. With the three Baltic TSO, all EU-TSOs of the regional Central Europe are connected to PICASSO
- Start 4s settlement period in January 2025
- Historical evolution (starting in 2010 until 2024):



- Member TSO operational
- Member TSO non-operational





1. Project overview and progress

10:55 - 11:00 CET

2. Business Processes

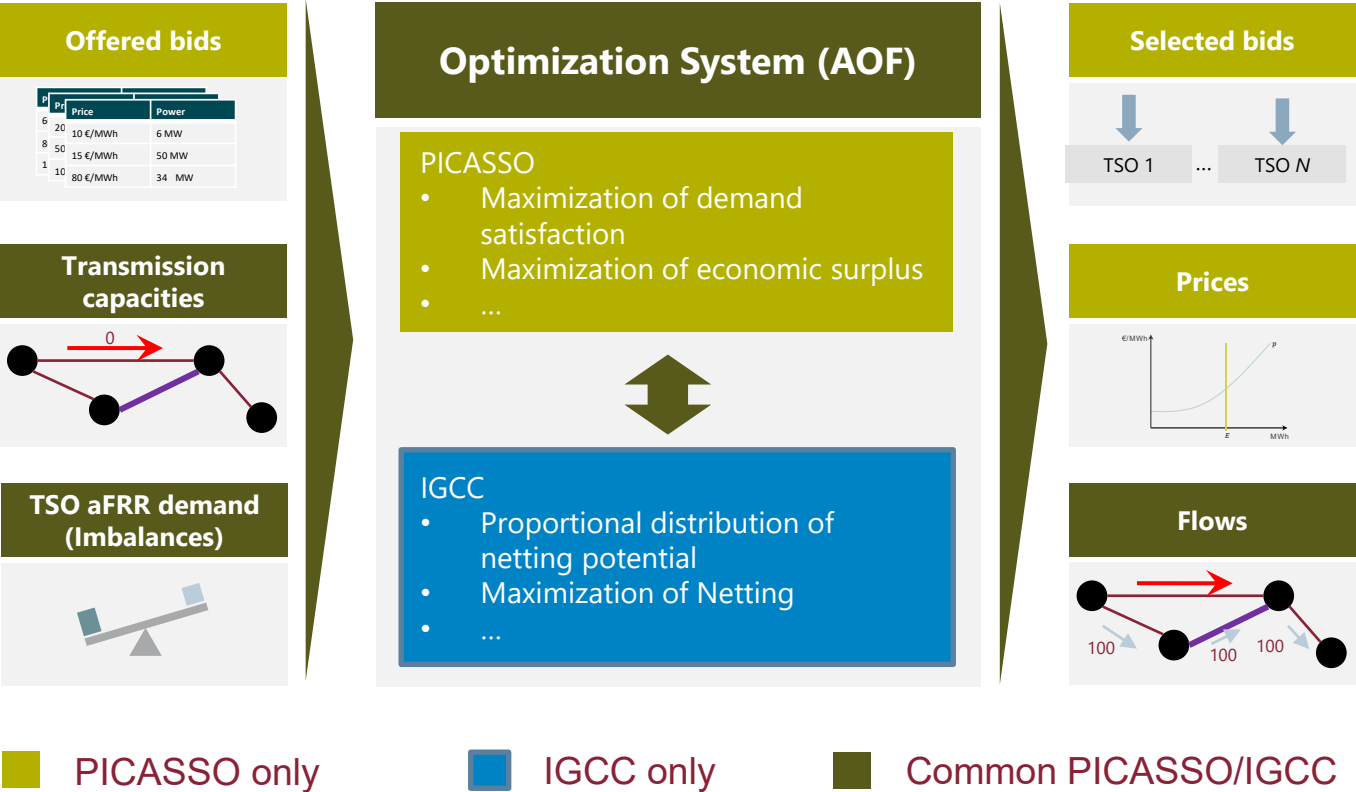
11:00 - 11:20 CET

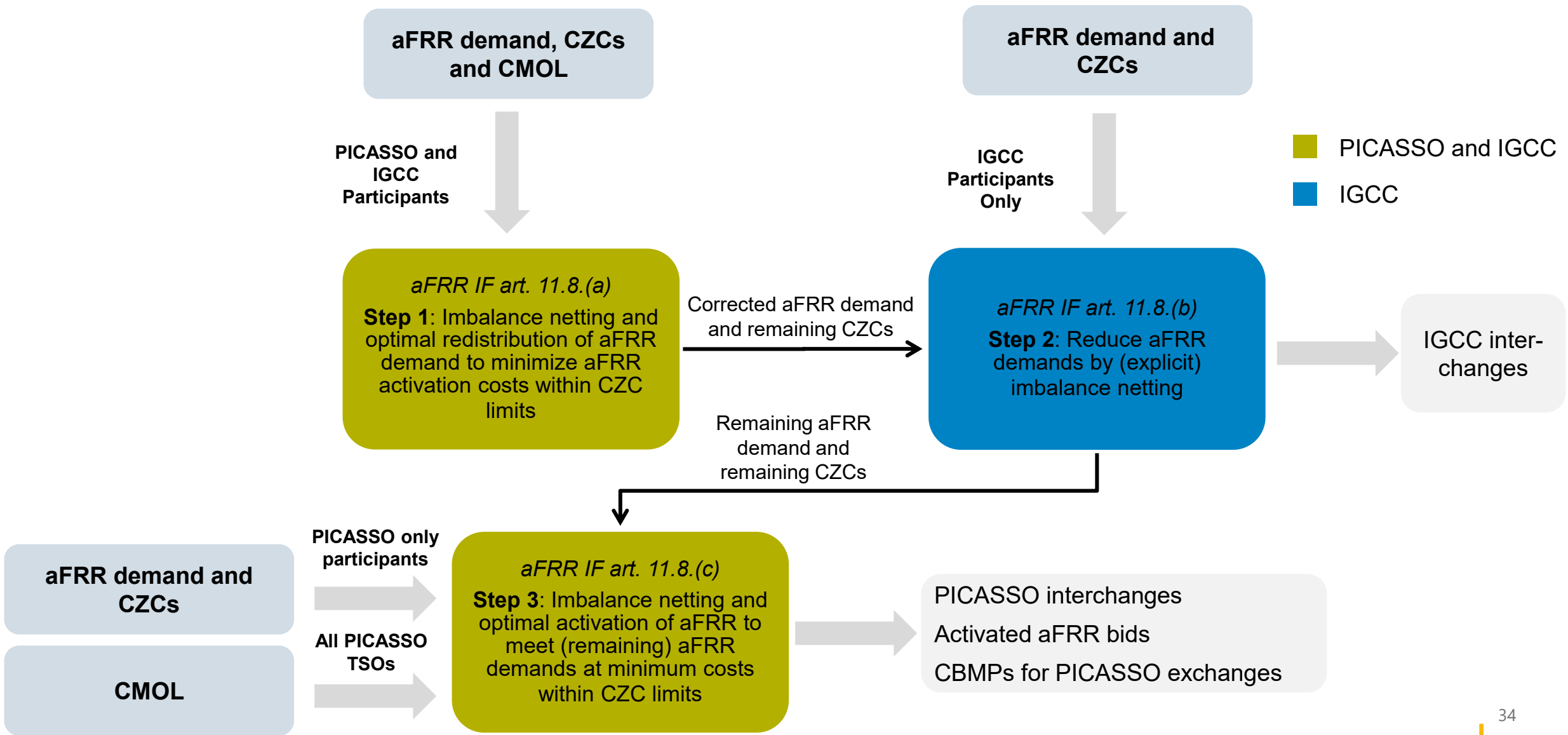
3. Operational Reporting

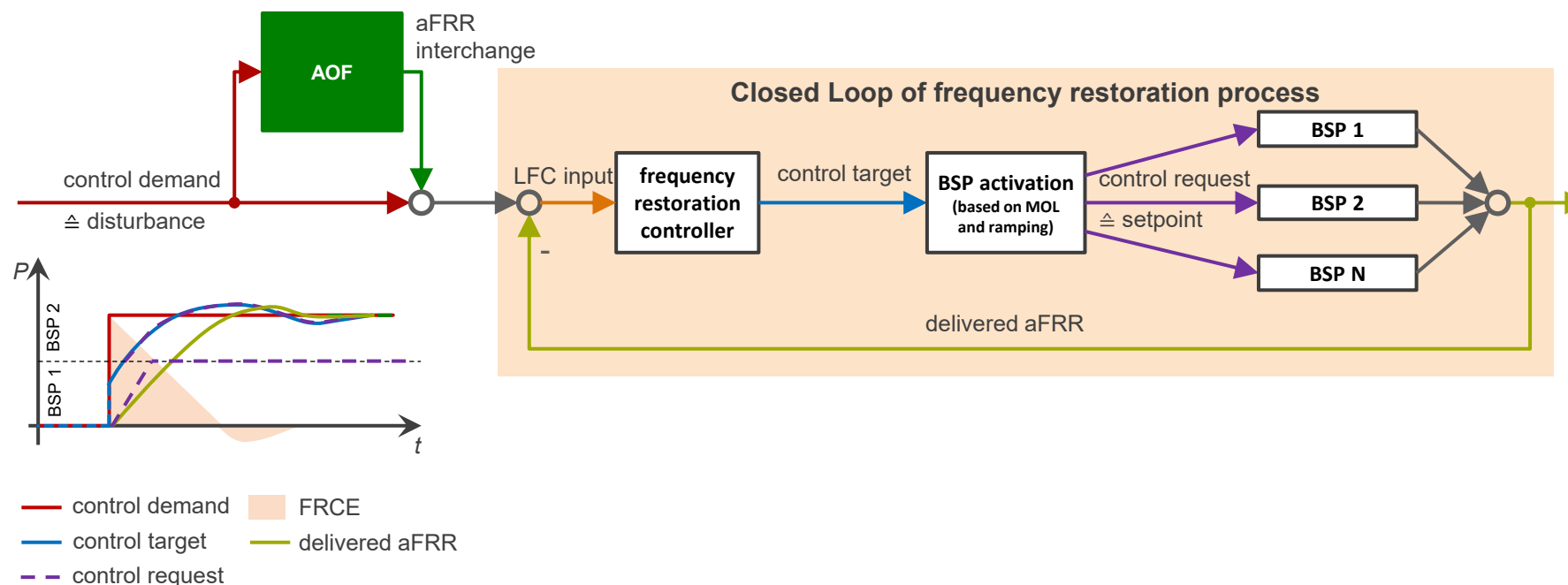
11:20 - 11:30 CET



High level design of Optimization







Frequency Restoration control

- Objective: Regulate LFC input (difference between disturbance and activated aFRR) to zero and by this restore frequency deviations
- The control target (LFC output) follows the control demand with a certain delay, depending on the controller settings that are adjusted to the expected dynamic BSP behavior

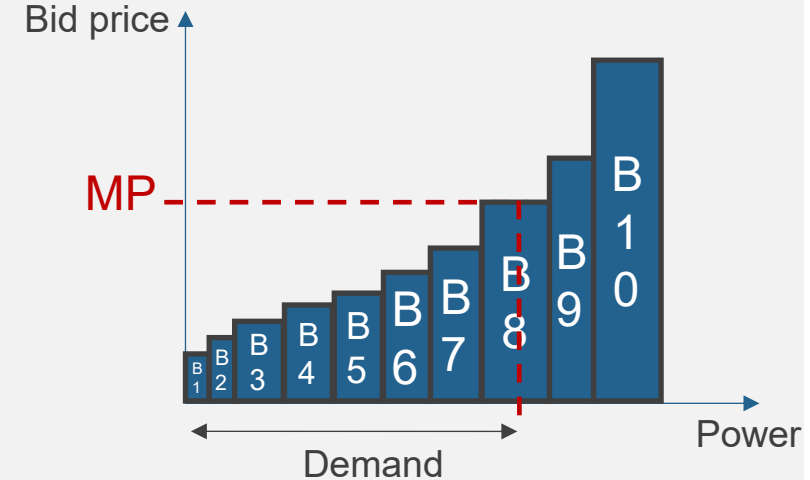
Control Demand model

- Each TSO calculates in each control cycle the demand, which resembles the imbalance before any aFRR activation and provides it to the AOF
- The AOF determines the aFRR interchange based on the CMOL, without considering any ramping constraints



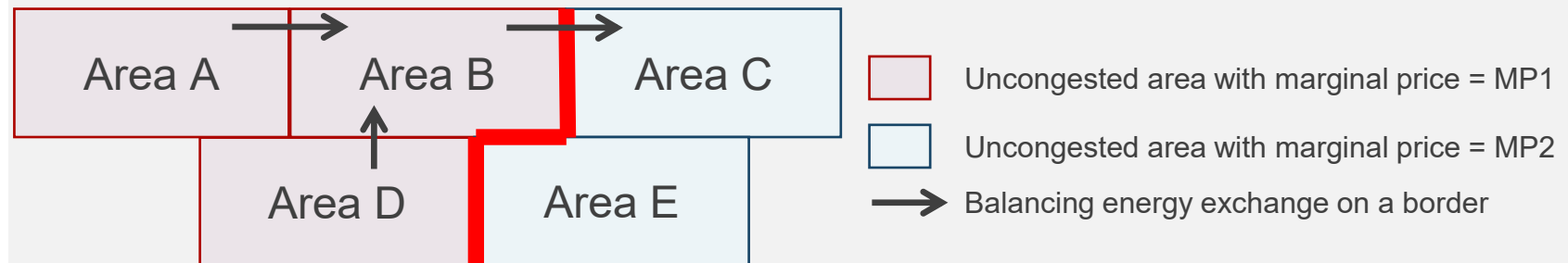
Marginal pricing principles

- According to EBGL, pricing for balancing energy shall be based on marginal pricing
- The Marginal Price (MP) represents the price of the highest price bid of a standard product which has been either selected or locally requested (see next slide) to cover the energy need for balancing purposes within a specified area.
- The PICASSO AOF will compute the cross-border marginal price (CBMP) per LFC area and optimization cycle



Cross-Border Marginal Pricing

- In case there is no congestion between adjacent LFC areas (-> uncongested area) the Cross-Border Marginal Price (CBMP) will be the same in these areas
- In case there is a congestion, there will be a price split and congestion rent will be allocated to the respective TSOs (c.f. day-ahead or intraday markets)

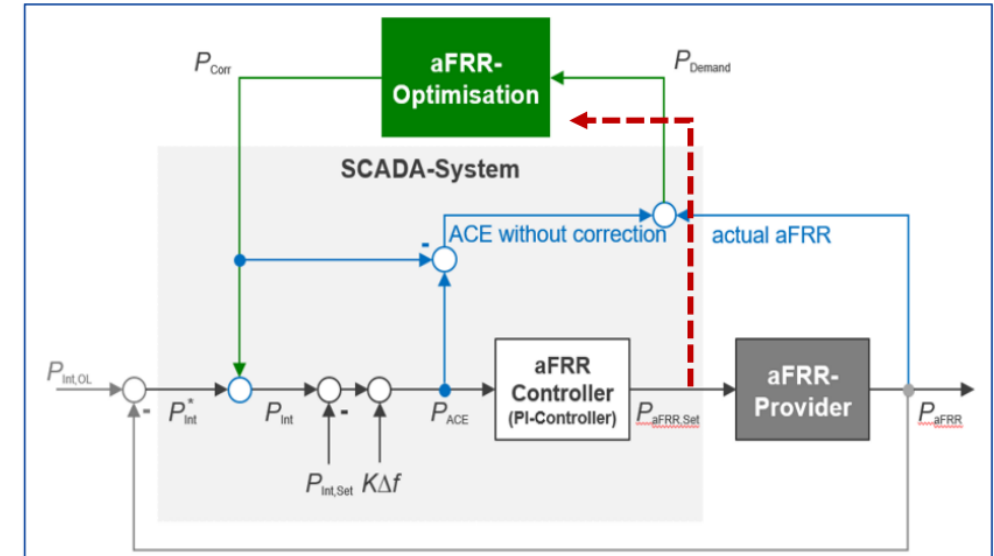




Connecting the actual local LFC output with the central selected

- To take also into account the dynamics of the local controllers, the setpoint for automatic FRR activation (LFC output) has to be taken into account in the MP determination
- Therefore, the sum of all LFC outputs of each local aFRR Controller is submitted to the AOF

The PICASSO AOF will compute the CBMP per LFC area and optimization cycle based on the two values (aFRR selected by the AOF and the LFC output)



Defining the CMBP

The CBMP in an uncongested area is the minimum of:

- Maximum local marginal price
Intersection of LMOL and LFC output determined by PICASSO platform
- and the aFRR-CBMP determined according to the results of the
Intersection of CMOL and sum of aFRR requirements (LFC input) determined by PICASSO platform.

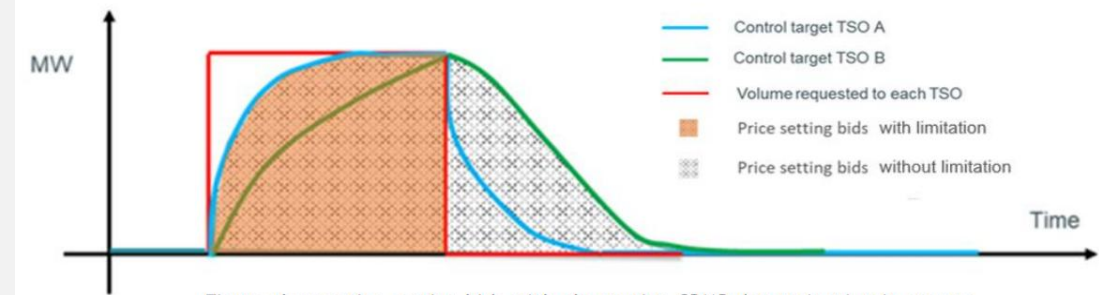


Figure shows price setting bids with alternative CBMP determination in orange

If in an uncongested area, no aFRR is requested (by the AOF or by the controllers), the price for perfect netting is applied.

This also applies for situation where the LFC output of all controllers of the uncongested area differs from the sign of the selection of the AOF.



Standard aFRR bid

With the standard aFRR bid, BSPs can submit either positive or negative balancing energy bids. The submitted price follows the pricing definition of the electricity balancing guideline (see on the right)

In PICASSO, the resulting merged MOL (“common MOL”) is sorted based on this principle.

- for negative balancing energy, the bid with the highest positive price is selected first.
- for positive balancing energy, the bid with the highest positive price is selected last.

Table 1
Payment for balancing energy

	Balancing energy price positive	Balancing energy price negative
Positive balancing energy	Payment from TSO to BSP	Payment from BSP to TSO
Negative balancing energy	Payment from BSP to TSO	Payment from TSO to BSP

Effects of bids on the market

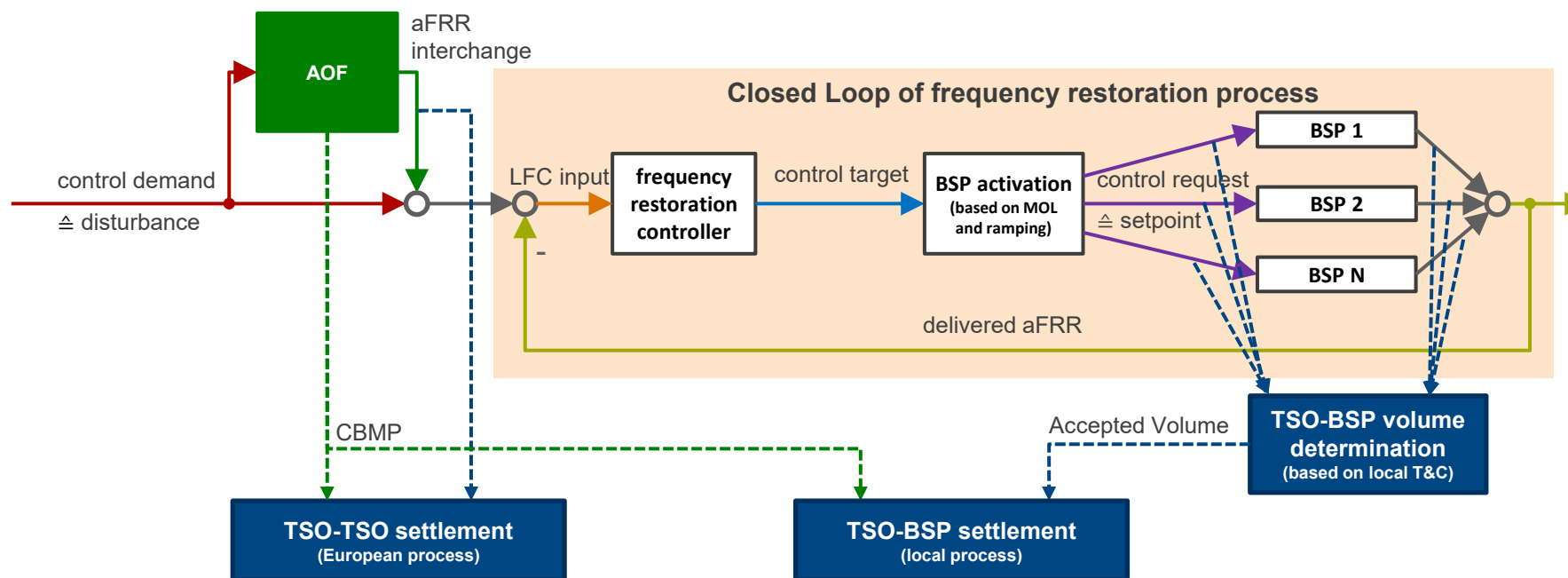
Even though PICASSO correctly reflects the market behavior, wrongly submitted bids can impact the market, as well as BSP and BRP settlement.

Bids for negative balancing energy with a high positive value have several effects on the market (see also table on the right with a bid with price 6858.86 €/MWh):

- (1) This bid is the first to be selected and activated in the connected LFC area
- (2) If the bid is the last selected on in an uncongested area, it sets the **negative CBMP**
- (3) As the CBMP in case of a price indeterminacy is the mid point between the first bids in the MOL for positive and negative energy, this price is also affected
- (4) Even if the CBMP is lower than the submitted bid price, the bid is still activated

PICASSO is working on an alternative method for (3) to reduce the impact of such extreme bid prices.

Zeit (ISO 8601)	CBMP_POS	CBMP_NEG
2026-10-05T13:31:56Z	N/A	91
2026-10-05T13:32:00Z	N/A	91
2026-10-05T13:32:04Z	N/A	232.36
2026-10-05T13:32:08Z	N/A	6858.86
2026-10-05T13:32:12Z	130.22	N/A
2026-10-05T13:32:16Z	3494.67	3494.67
2026-10-05T13:32:20Z	3494.67	3494.67
2026-10-05T13:32:24Z	3494.67	3494.67
2026-10-05T13:32:28Z	3494.67	3494.67
2026-10-05T13:32:32Z	N/A	6858.86
2026-10-05T13:32:36Z	3494.67	3494.67
2026-10-05T13:32:40Z	N/A	6858.86
2026-10-05T13:32:44Z	N/A	232.36
2026-10-05T13:32:48Z	N/A	91
2026-10-05T13:32:52Z	N/A	232.36
2026-10-05T13:32:56Z	3494.67	3494.67
2026-10-05T13:33:00Z	N/A	138.87
2026-10-05T13:33:04Z	N/A	6859
2026-10-05T13:33:08Z	N/A	6859
2026-10-05T13:33:12Z	N/A	6859
2026-10-05T13:33:16Z	3494.67	3494.67
2026-10-05T13:33:20Z	3494.67	3494.67



PICASSO settlement

- TSO-TSO settlement is based on the aFRR interchange calculated by the AOF, multiplied by the CBMP, not taking into account activation delays
- TSO-BSP settlement is based on “accepted volumes” determined by each TSO based on local terms and conditions (e.g. on basis of control request and/or measures/metered physical aFRR delivery)
- Accepted volumes are multiplied with CBMP, centrally determined on basis of the bid selection by the PICASSO AOF



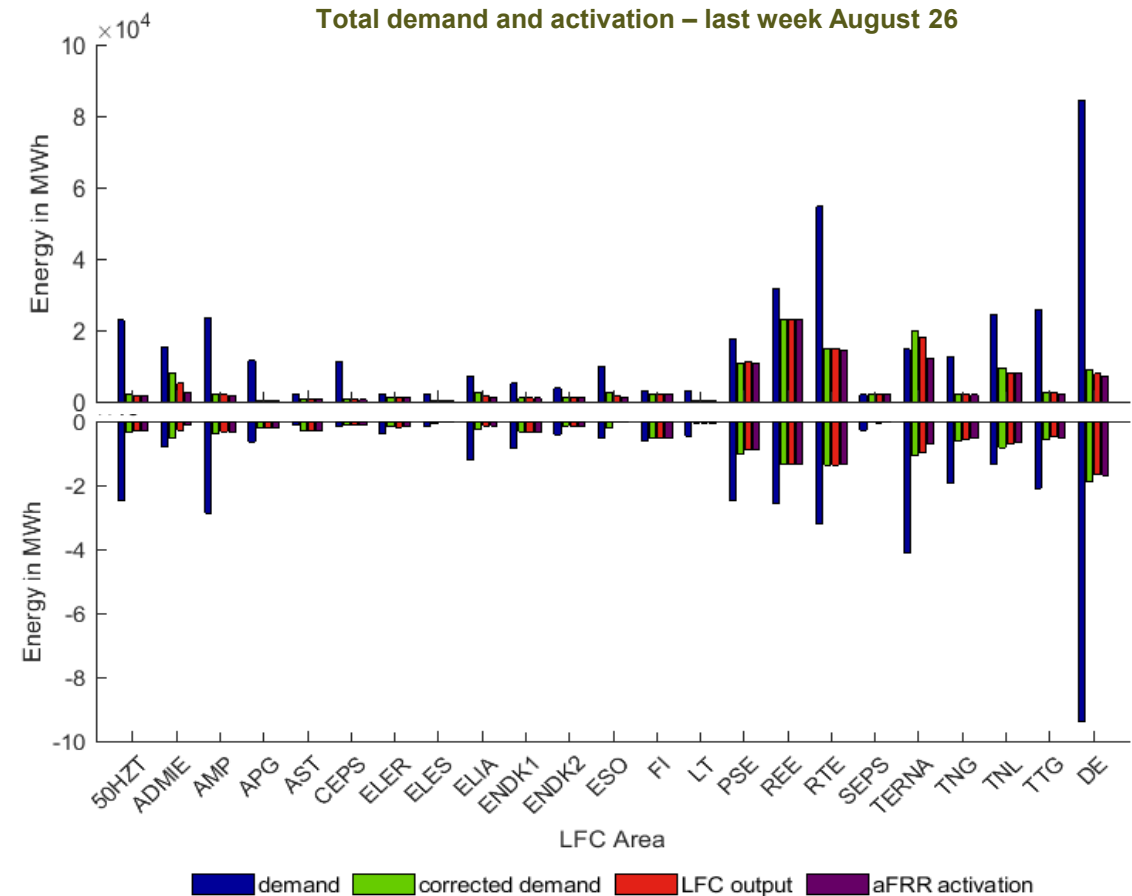
1. Project overview and progress	10:55 - 11:00 CET
2. Business Processes	11:00 - 11:20 CET
3. Operational Reporting	11:20 - 11:30 CET

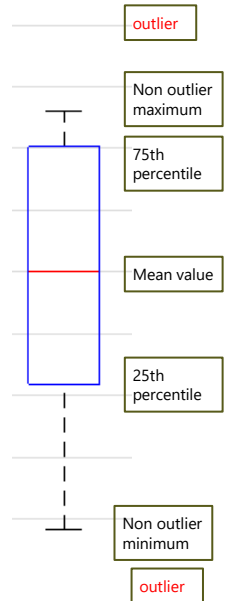
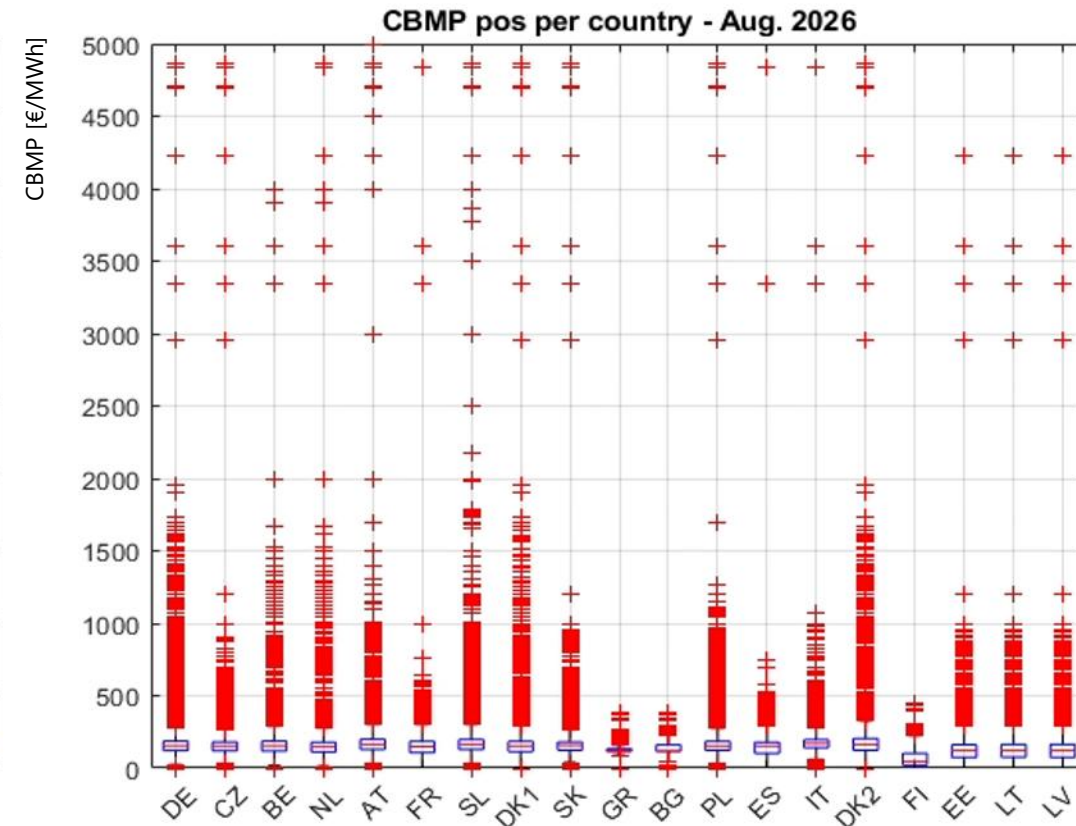
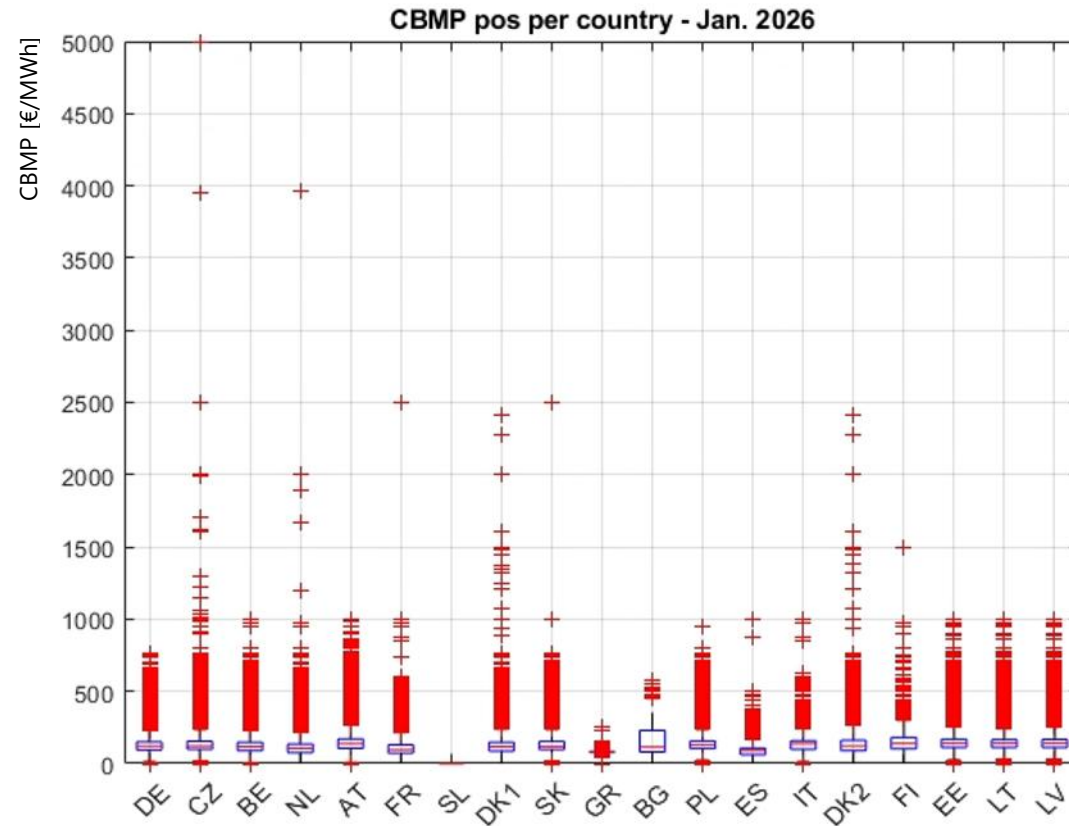
Operational Reporting

Platform operation – Demand and activation

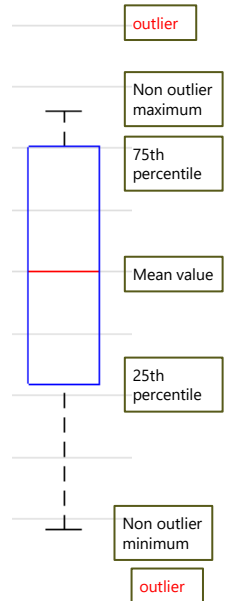
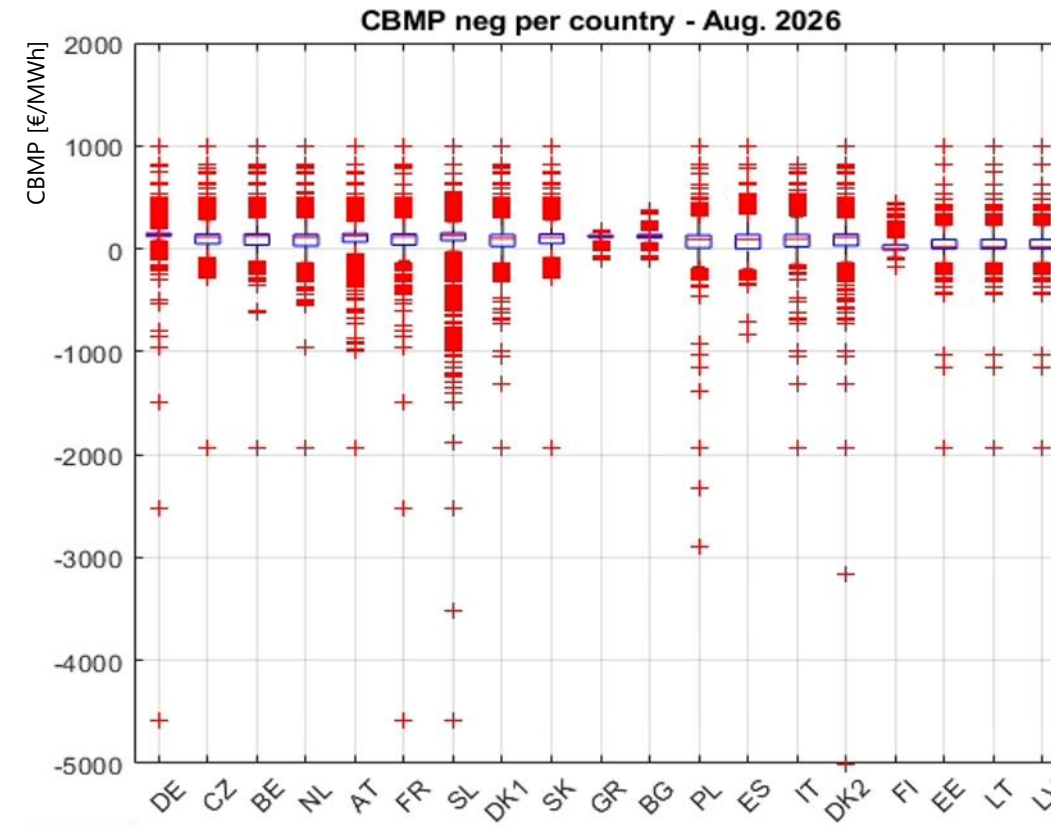
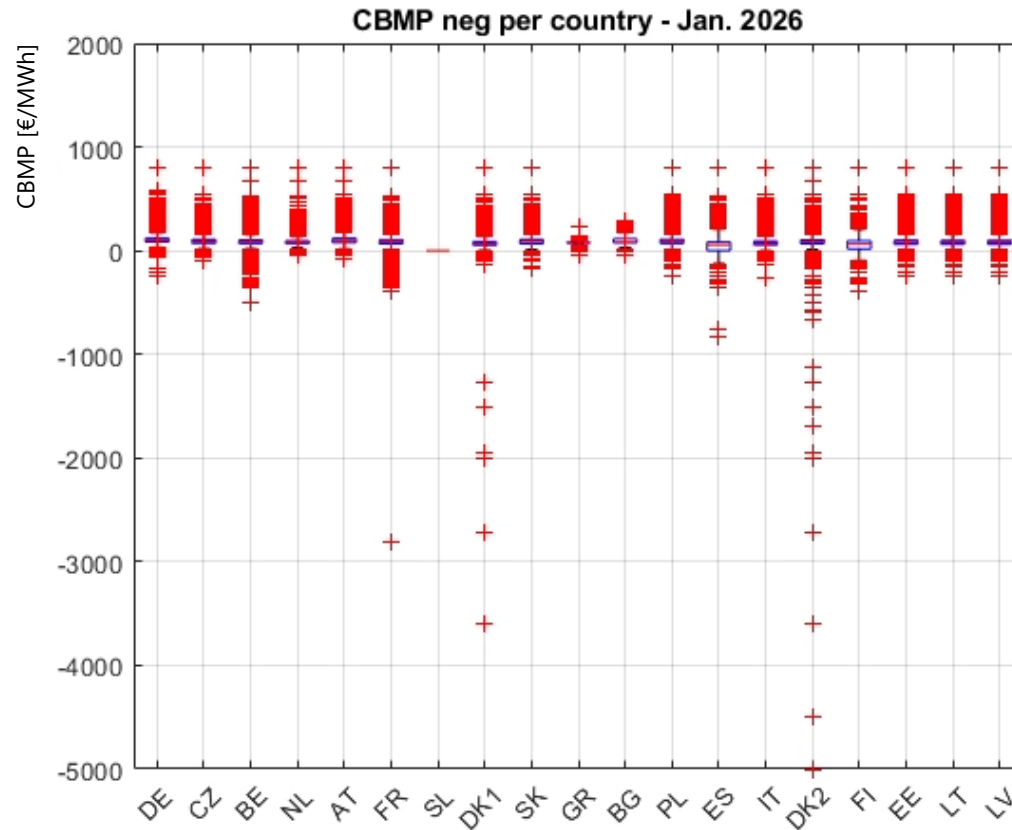


- Graph shows the aggregated energy amounts for the 23 LFC areas and the German LFC-block (as sum) covering a week in August.
- The effect of the optimization steps is clearly visible:
 - The aFRR demand (blue) submitted to the platform is for most of the LFC areas much higher than the corrected demand (green) calculated by the platform (Netting within the PICASSO region and the IGCC)
 - There is in some areas a decrease visible between the corrected demand (output of PICASSO), the local LFC output and the activated aFRR by the BSP due to the dynamic behavior of the involved components.

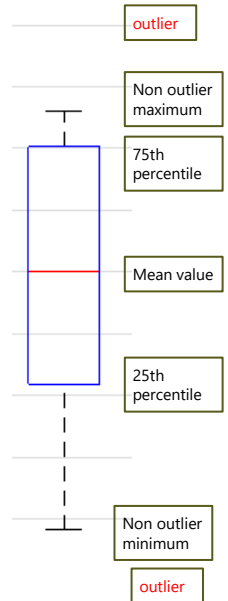
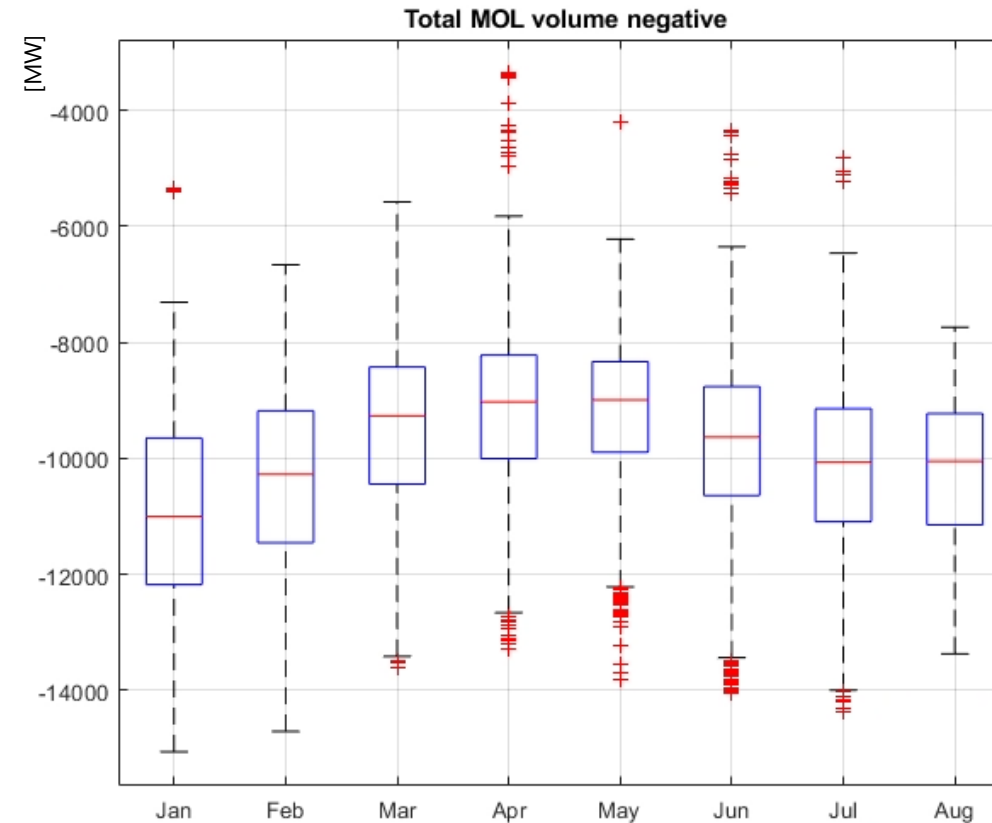
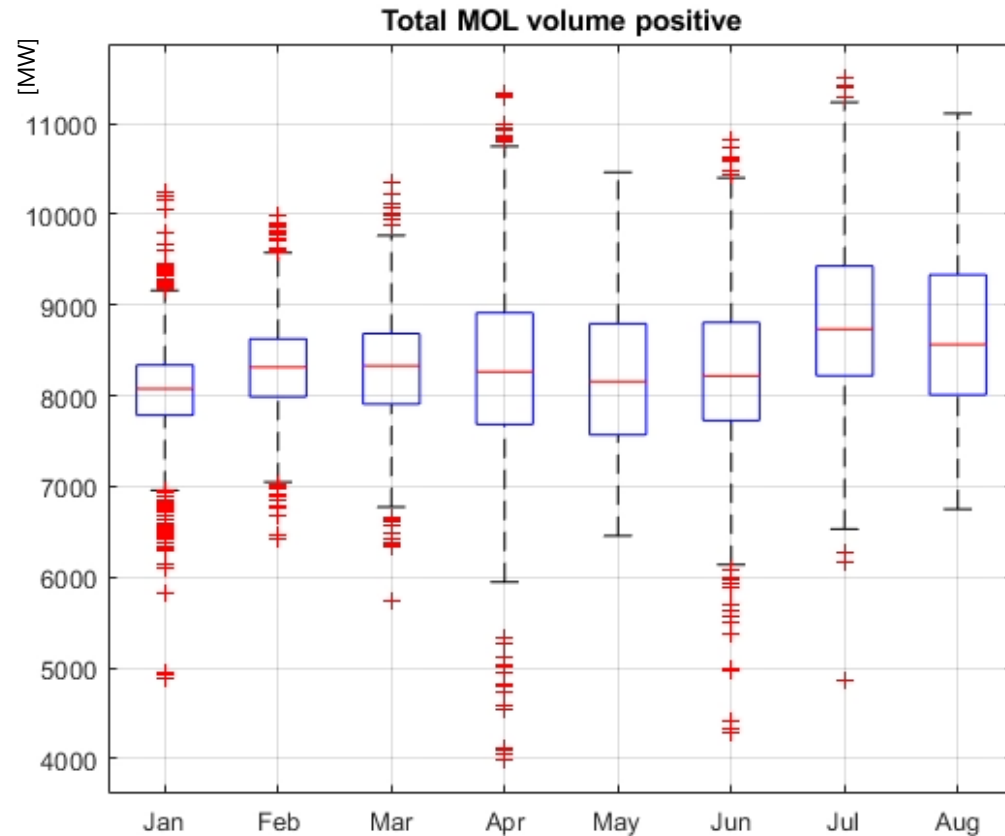




- For better visibility of the majority of the prices, the y-axis is limited to + 5000 €/MWh
- Majority of prices for positive aFRR is below 200 €/MWh, there are outliers in every country
- In August, slightly higher average price levels are visible (except Finland) and a higher volatility (amount of outliers)
- In general, price levels are comparable over the countries



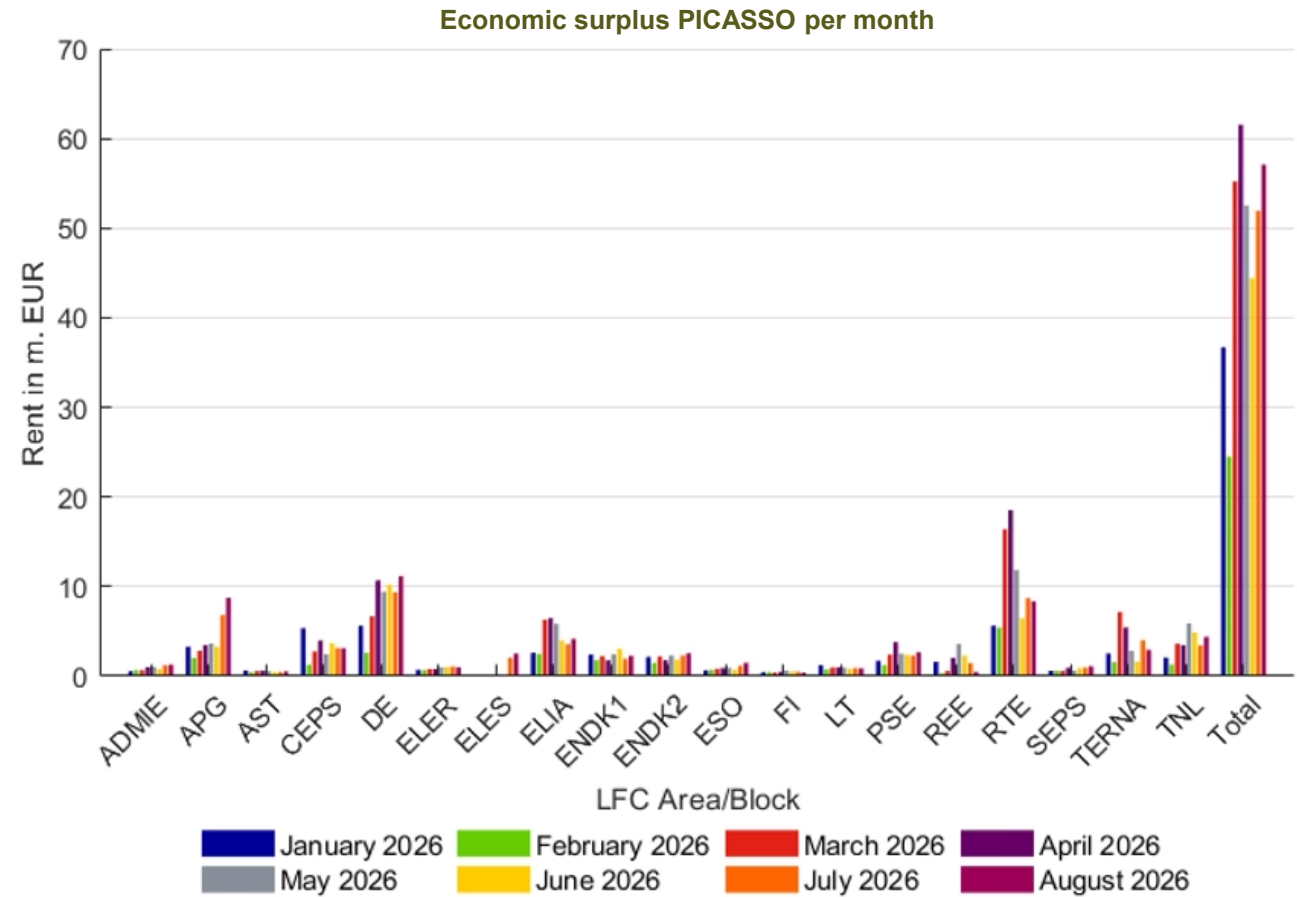
- For better visibility of the majority of the prices, the y-axis is limited to 2000 €/MWh and -5000 €/MWh
- Majority of prices for negative aFRR is above 0 €/MWh, there are outliers until -1000 €/MWh in every country (except Bulgaria and Greece)
- In August, higher volatility is visible (except of Finland, Bulgaria and Greece)
- In general, price levels are comparable over the countries



- In average, around 8.3 GW of aFRR are available at PICASSO for positive aFRR and around 10 GW in negative direction
- There is a seasonal behaviour for negative aFRR visible
- Volatility within a month is mainly driven by daily pattern (e.g. more aFRR during daylight than during night)
- Outliers mark situations with several TSOs not connected to the platform
-

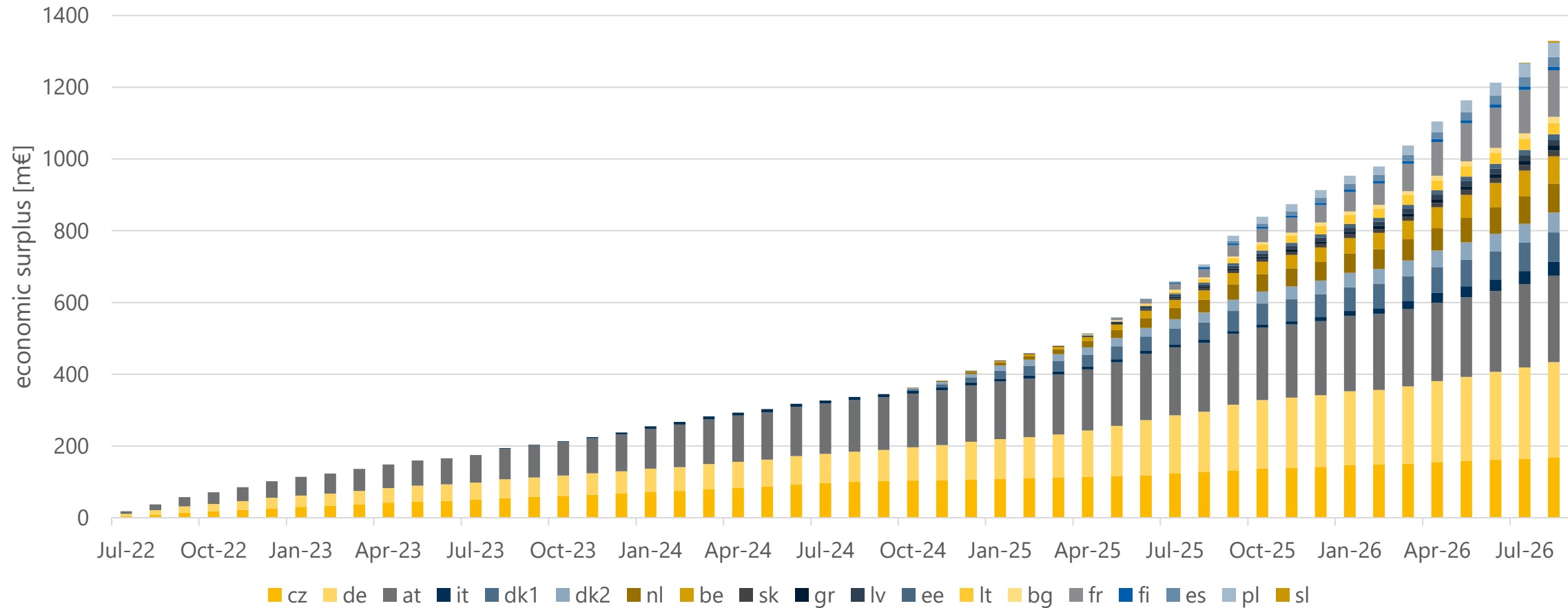


- Economic surplus is calculated by comparing the actual activation of aFRR to a reference scenario with the same bids, demands and market design, but without international interchange.
- Economic surplus in the year 2026 so far (January – August) was around 375 Mio. €, without surplus from additional satisfaction of demand.
- Economic surplus higher for LFC areas that get access to a much larger market via PICASSO.
- Surplus from aFRR interchange within Germany is not included.



Operational Reporting

Economic surplus of PICASSO – since go-live



Since go-live, PICASSO has generated an economic surplus of around 1328 mio.€

5. Q&A and Closure of Workshop

Back-up

Links to further information

- Workshop recording from 2025 explaining amongst other the working of the MARI and PICASSO platforms: [link](#)
- Frequently asked questions about the European Balancing Platforms: [link](#)
- IGCC webpage: [link](#)
- PICASSO webpage: [link](#)
- MARI webpage: [link](#)

TP balancing data publications

Data item name	TP webpage	DDD
EBGL publications		
Terms and Conditions [12.3.G]	Terms and Conditions	Link
Information on conversion into standard products [GL EB 12.3.D]	Information on Conversion into Standard Products	Link
Approved methodologies [GL EB 12.3.J]	Approved Methodologies	Link
Algorithm [GL EB 12.3.K]	Algorithm	Link
Common annual report [GL EB 12.3.L]	Common Annual Report	Link
Balancing Energy Bids [GL EB 12.3.B&C]	Balancing Energy bids	Link
Aggregated balancing energy bids [GL EB 12.3.E]	Aggregated Balancing Energy Bids	Link
Procured balancing capacity [GL EB 12.3.F]	Procured Capacity	Link
Cross-zonal Balancing Capacity [GL EB 12.3.H&I]	Allocation and Use of Cross-zonal Capacity	Link
Current balancing state [GL EB 12.3.A]	Current Balancing State	Link
Transparency Regulation publications		
Prices of Activated Balancing Energy [TR 17.1.F] & [TR 17.2.E]	Prices of Activated Balancing Energy & aFRR CBMPs	Link
Financial Expenses and Income for Balancing [17.1.I]	Financial Expenses and Income	Link
Imbalance Prices [17.1.G]	Imbalance	Link
Total Imbalance Volumes [17.1.H]		
Amount and Prices Paid of Balancing Reserves Under Contract [17.1.B&C]	Volumes and Prices of the Contracted Balancing Reserves	Link
Implementation Frameworks publications		
CBMPs for aFRR Standard Product [aFRR IF 3.16]	Prices of Activated Balancing Energy & aFRR CBMPs	Link
Netted and Exchanged Volumes [IFs IN 3.10, mFRR 3.17, aFRR 3.16]	Exchanged Volumes	Link
Netted and Exchanged Volumes per border [IFs IN 3.10, mFRR 3.17, aFRR 3.16]	Netted and Exchanged Volumes per Border	Link
Elastic Demands [IF mFRR 3.4]	Elastic Demands	Link
Fall-backs [IFs IN 7.2, mFRR 3.11, aFRR 3.10]	Fall-backs	Link
Changes to Bid Availability [IFs mFRR 9.9, aFRR 9.6&9.8]	Changes to Bid Availability	Link
Permanent Allocation Limitations to Cross-border Capacity on HVDC Lines [IFs 4.5]	Permanent Limitations to Cross-border Capacity on HVDC Lines	Link
Balancing Border Capacity Limitations [IFs 4.3&4.4]	Balancing Border Capacity Limitations	Link
SOGL publications		
FCR Total Capacity [SO GL 187.2]	FCR Amount and Shares	Link
Shares of FCR Capacity [SO GL 187.2]		
Sharing of FCR between SAs [SO GL 190.2]	Sharing of FCR between Synchronous Areas	Link
FRR Capacity Outlook [SO GL 188.3]	Actual Capacities and Outlook on FRR and RR	Link
FRR Actual Capacity [SO GL 188.4]		
Outlook of Reserve Capacities on RR [SO GL 189.2]		
RR Actual Capacity [SO GL 189.3]		
Sharing RR and FRR [SO GL 190.1]	Sharing of RR and FRR	Link
Exchanged reserve Capacity [SO GL 190.3]	Exchanged Reserve Capacity	Link
Imbalance Netting [SOGL186.2]	Imbalance Netting	Link