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# ACER webinar: amendments to the electricity balancing platforms

8 April 2024

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# Agenda

| Indicative time | Webinar items | Speakers |
|---|---|---|
| 13:45 - 14:00 | Webinar open for log-in | |
| 14:00 - 14:05 | **Introductory remarks** | Mathieu FRANSEN, ACER |
| 14:05 - 14:10 | **Background and process leading to the ACER decision** | Gilles BERTRAND, ACER |
| 14:10 - 14:20 | **Automatic frequency restoration reserve (aFRR) elastic demand: functioning and impact (topic 1)** | Gilles BERTRAND, ACER |
| 14:20 - 14:25 | **Alternative way to compute the cross-border marginal price (topic 2)** | Gilles BERTRAND, ACER |
| 14:25 - 14:35 | **Q&A** | |
| 14:35 - 14:40 | **Technical and transitional price limits (topic 3)** | Gilles BERTRAND, ACER |
| 14:40 - 14:45 | **Adjustment mechanism to the harmonized maximum and minimum prices for balancing energy (topic 4)** | Gilles BERTRAND, ACER |
| 14:45 - 14:55 | **Q&A** | |
| 14:55 - 15:00 | **Closing remarks** | Mathieu FRANSEN, ACER |

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# Housekeeping rules

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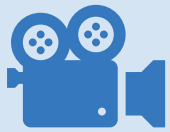

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Questions from other participants can be ‘liked’ to increase their visibility

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Substance-related questions will be addressed during the relevant Q&A session; although they can be posed at any point

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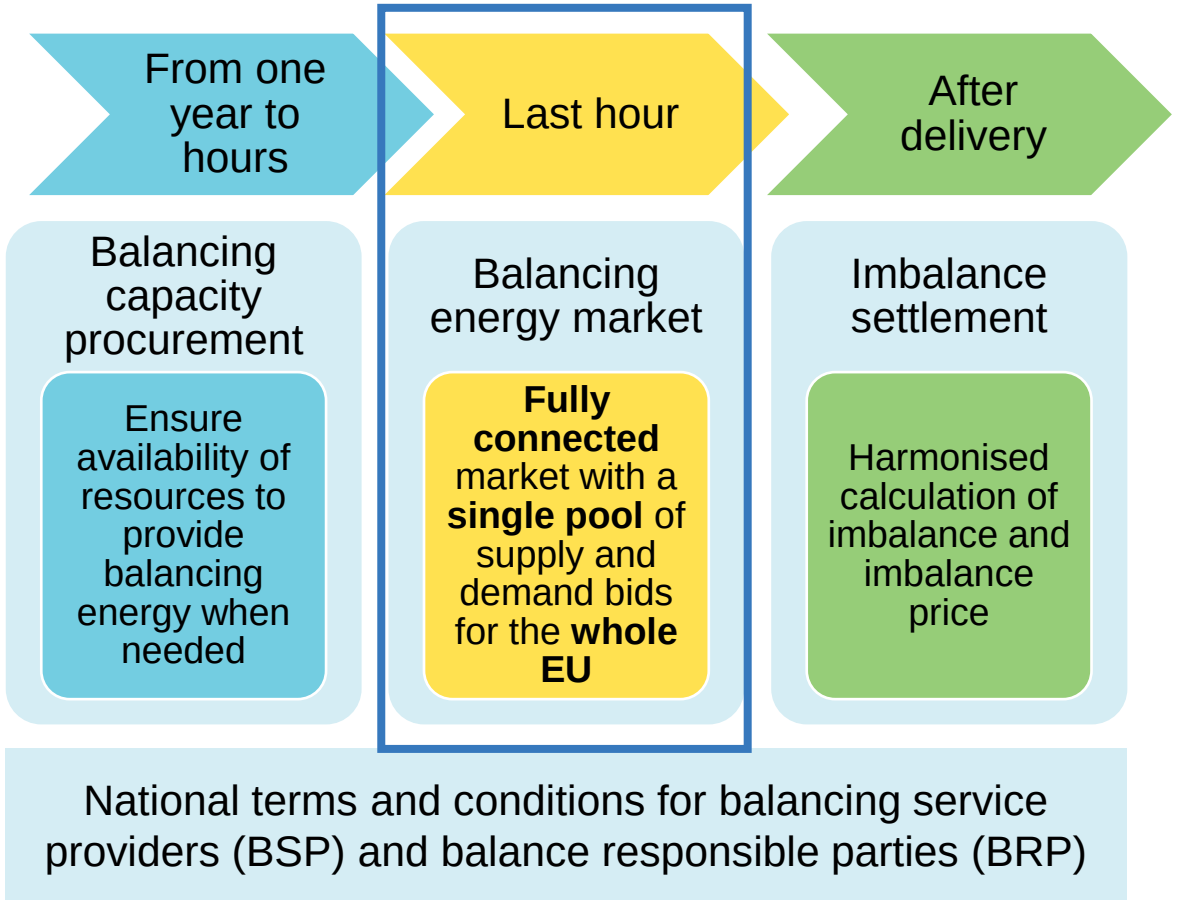
# Introductory remarks

Mathieu FRANSEN, Team Leader Market Codes – Electricity Department, ACER

# EB Regulation – main elements




- European platforms for the exchange of Balancing Energy (BE) and for the imbalance netting process:
  - Balancing energy pricing (ACER Decision 01/2020) + 1st AM (03/2022)
  - aFRR Implementation Framework (ACER Decision 02/2020) + 1st AM (15/2022)
  - mFRR Implementation Framework (ACER Decision 03/2020) + 1st AM (14/2022)
  - IN Implementation Framework (ACER Decision 13/2020) + 1st AM (16/2022)
  - Activation purposes (ACER Decision 16/2020)
  - TSO-TSO settlement for intended exchanges (ACER Decision 17/2020)

# Balancing Energy markets

Last hour

Balancing energy market

- TSO demand for BE based on SO Regulation
- Contracted BSPs have to bid, but also free bids
- Bidding up to one hour before delivery
- Selected bids are expected to delivering real time based on the products characteristics

Integrated balancing energy markets through European balancing platforms for the exchange of balancing energy from different type of reserves (automatic & manual FRR, RR) and the imbalance netting process.

Imbalance netting: avoiding the simultaneous activation of FRR in opposite directions.

**Main principles for exchange of Balancing:**

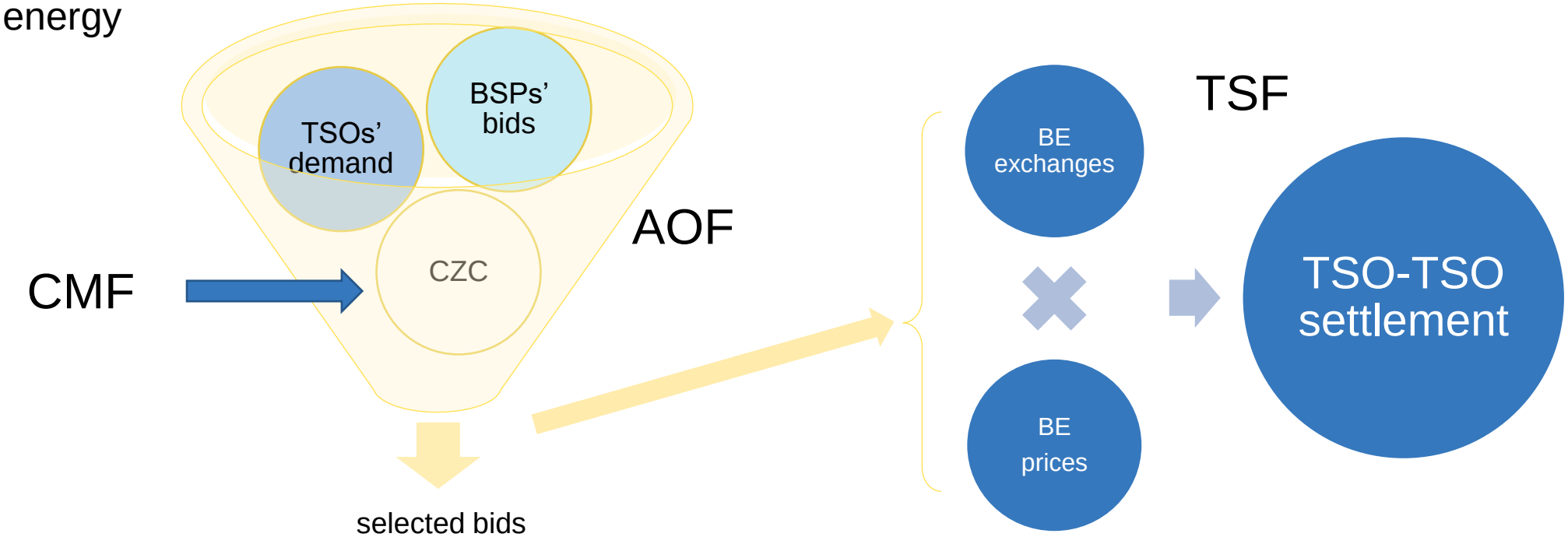
- TSO-TSO model
- Common merit order lists for BE standard products bids
- Marginal pricing

Independently of the balancing process the principles and functions of the platforms are the same.

# EU Platform functions

Functions performed by the entity/ies operating the platform:

- Activation Optimisation Function (AOF): optimisation of activation of balancing energy bids (common merit order list, CMOL)
- Capacity Management Function (CMF): updates the available cross-zonal capacity
- TSO-TSO Settlement Function (TSF): settlement between the TSOs for the exchange of balancing energy



# Main observations from the 2023 market integration report

Percentage of OCs with a price incidents in 2022

| | Germany | Austria | Czech Republic |
|---|---|---|---|
| **Percentage of price incidents (price more extreme than +- 7500 Eur/MWh)** | 0.02% | 0.17% | 0.03% |

**Observation 1:** price incidents may be short but are (often) part of a longer lasting process.

**Recommendation 1: This indicates that it might be efficient to activate slower reserve such as mFRR.**

**Observation 2:** During price incidents, large price differences can be observed between bidding zones (other bidding zones have balancing resources available); and

**Observation 3:** During price incidents, few cross-border exchanges take place;

**Recommendation 2: Increasing the amount of cross-border capacity available in balancing would be a very efficient way to reduce the impact of price incidents on consumers.**

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# Background and process leading to the ACER decision

Gilles BERTRAND, Policy Officer Market Codes – Electricity Department, ACER

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# TSO submission

- ENTSO-E submitted on 7 February 2024 All TSOs proposal for:
  - The second Amendment to the aFRR implementation framework
  - The second Amendment to the balancing pricing methodology

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# Decision Process

**Feb**
- Proposal submission by all TSOs to ACER on 7 February

**March**
- Interactions with NRAs/TSOs

**April**
- Interactions with NRAs/TSOs
- **Public consultation:** 26 Mar - 23 Apr (**public workshop** on 8 Apr)

**May**
- Last interactions with TSOs
- Finalization of the methodology

**Jun**
- BoR for opinion

**Jul**

**Aug**
- Legal deadline 7 August

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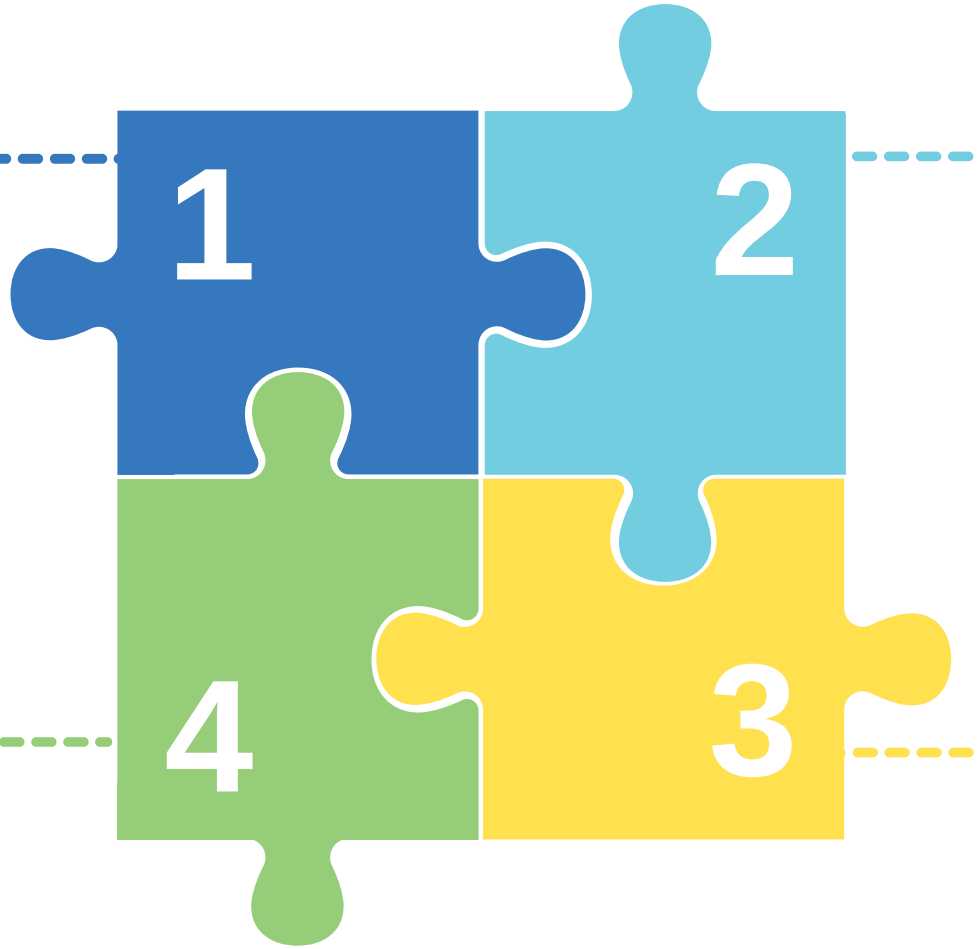
# What we are consulting on

Topic 1: Possibility for TSOs to use an elastic demand for aFRR.

Topic 2: Alternative way to compute the CBMP.




Topic 4: Adjustment mechanism to the harmonized maximum and minimum prices for balancing energy.

Topic 3: Transitional and Technical price limits.

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# Automatic frequency restoration reserve (aFRR) elastic demand: functioning and impact

Gilles BERTRAND, Policy Officer Market Codes – Electricity Department, ACER

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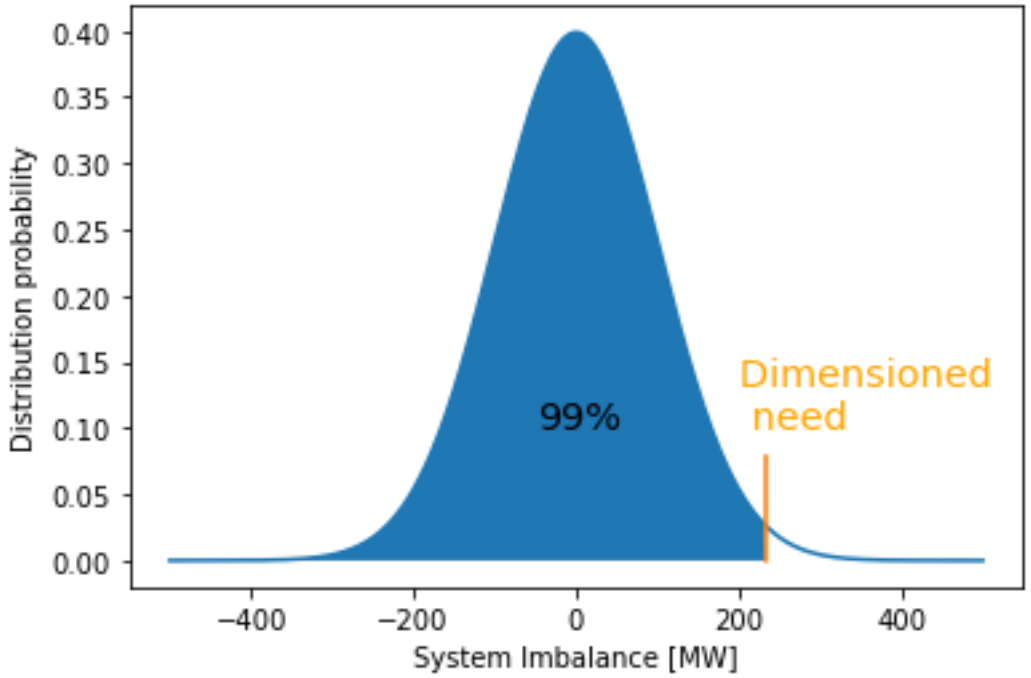
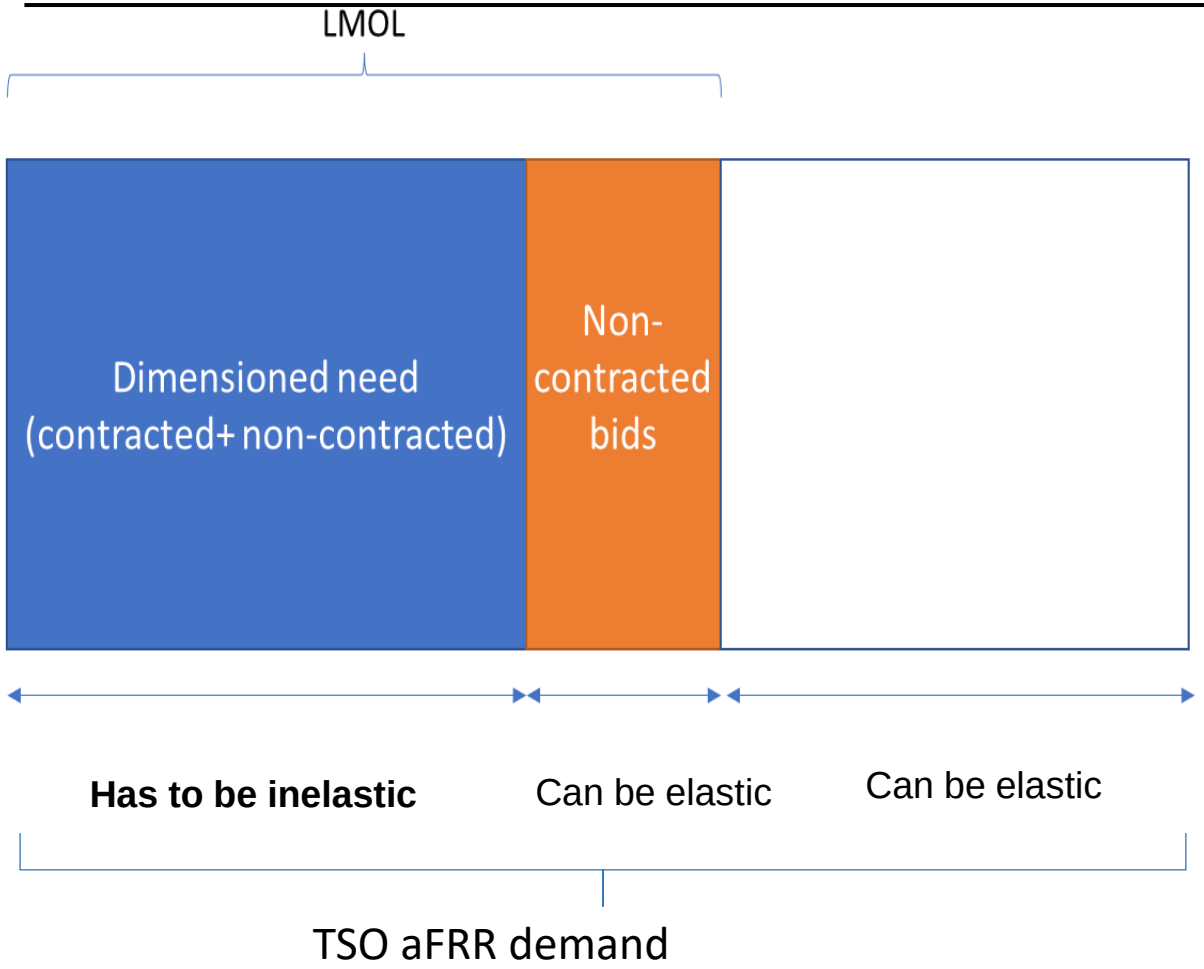
# Balancing capacity procurement




- TSOs need balancing capacity in order to balance the system in real-time.
- The FRR dimensioning rules (Article 157 of SOGL) requires TSOs to have enough balancing capacity to cover imbalances for at least 99% of the time.
- This amount of balancing capacity guarantees a sufficient frequency quality even though a TSO does not access the merit order of other TSOs.
- Connecting to PICASSO improves frequency quality by accessing the merit order of other TSOs. However, there shall not be an obligation to improve the frequency quality at any cost.

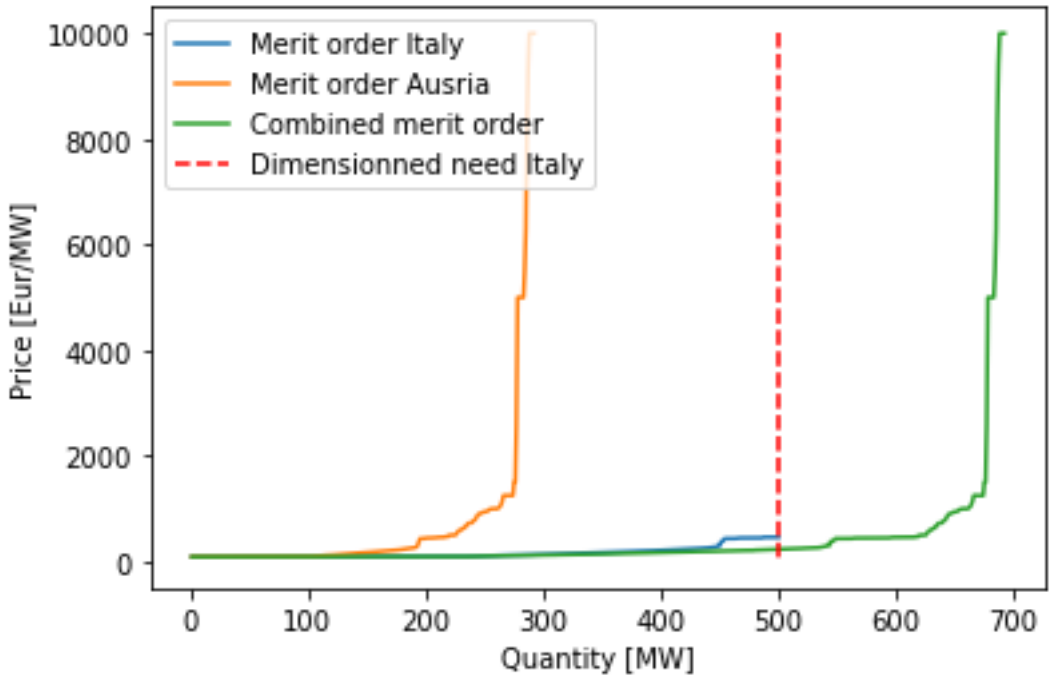
# Price elastic aFRR demand




Graph presented by TSOs at Market European Stakeholder Committee on 7 December 2023

- **Proposal:** introduces the possibility for TSOs to use an elastic demand for the aFRR: TSOs may have a price for part of their aFRR demand with some limitations
- **Reasoning:** Activating the dimensioned need part (blue) guarantees sufficient frequency quality.
- **Initial assessment**: The possibility for TSOs to use an elastic demand would allow them to better reflect the trade-off between extra cost and better frequency quality; and would therefore improve system efficiency.

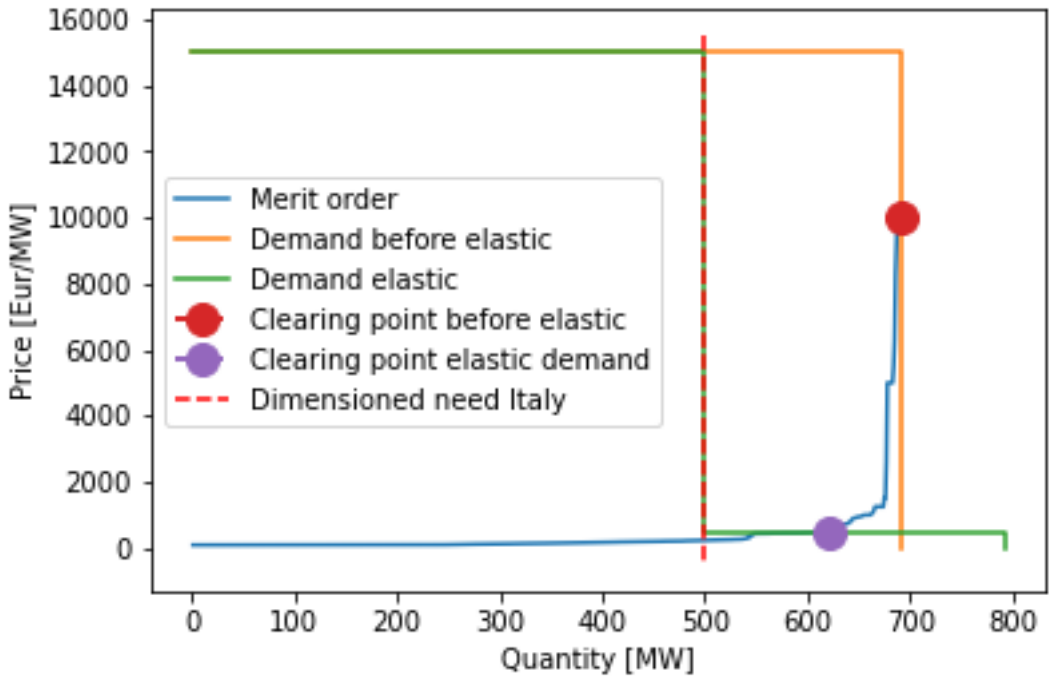
# Example of the impact of elastic demand for Italy




Example combined merit order observed from Italy

- In this example, we consider price incidents that took place in Italy. Often, these price incidents comes from a situation in which Terna exhausts its merit order and also activates expensive bids from Austria.
- In this graph, we represent in blue the Italian merit order, in orange the Austrian merit order; and in green the combined merit order if there are ATCs available.

# Example of the impact of elastic demand for Italy




Impact of the use of an elastic demand for Italy

- The price incidents in Italy mainly takes place when they exhaust their merit order and the Austrian one (red dot).
- The use of an elastic demand would allow TERNA to put a price on the volume exceeding the dimensioning need (vertical red dashed segment).
- The price of the elastic part is decided by the TSO (lower horizontal segment of the green curve).
- The use of an elastic demand would allow TERNA not to activate the most expensive bids from Austria (purple dot) if they do not really need them.
- This is expected to prevent a large portion of price incidents in Italy.

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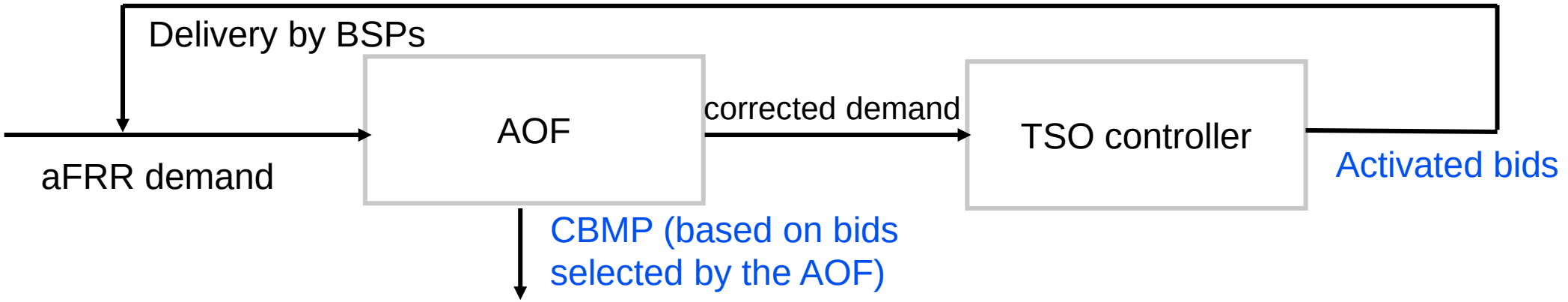
# Alternative way to compute the cross-border marginal price

Gilles BERTRAND, Policy Officer Market Codes – Electricity Department, ACER

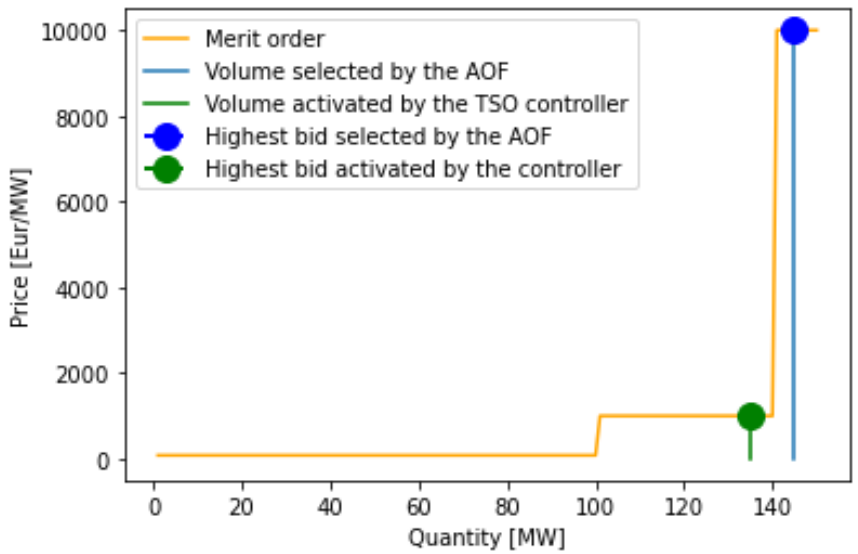
# Load frequency control model

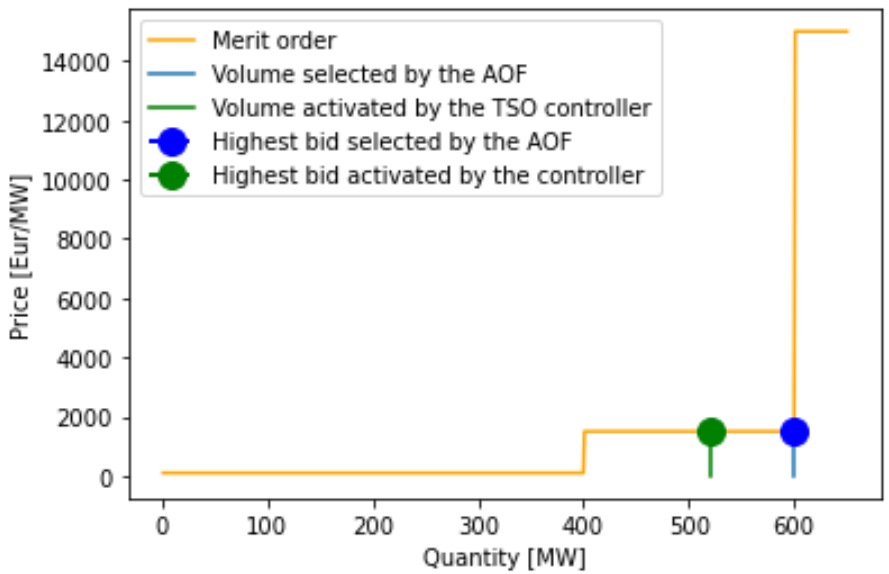
- The AOF rearranges the demand between the different TSOs to minimize the costs. It also computes the CBMP based on the selected bids.
- As a cruise control brings back the speed of a car to the required level, the TSO controller activates BSP bids in order to bring back the power imbalance to zero.




- In the current settings, there might be discrepancies between the bids “selected” by the AOF, which set the cross-border marginal price and the BSPs bids really activated due to the delay of the TSO controller.
- This option can create issues because the price can be set by a bid that is not even activated (in case a bid is selected by the AOF but not activated by the TSO controller).
- This is what happens for short price incidents where the expensive bid is often not activated by the TSO controller (and thus also not delivered by the BSP).

# Example illustrating the TSO proposal




- In the current situation, the CBMP is set at the highest bid selected by the AOF in the uncongested area:
- Max(10,000,1500) = 10,000 Eur/MWh.
- As explained before, this bid might not even activated by the TSO controller.

- With the TSO proposal, the CBMP would be set at the maximum on all LFC areas of the minimum between the highest bid selected by the AOF and the highest bid activated by the TSO controller.
- This gives: max(min(10,000,1000),min(1500,1500)) = 1500 €/MWh.
- This approach can be interpreted as setting the CBMP at the highest bid that is both selected by the AOF and activated by the TSO controller.

# Example of the impact of the TSO proposal

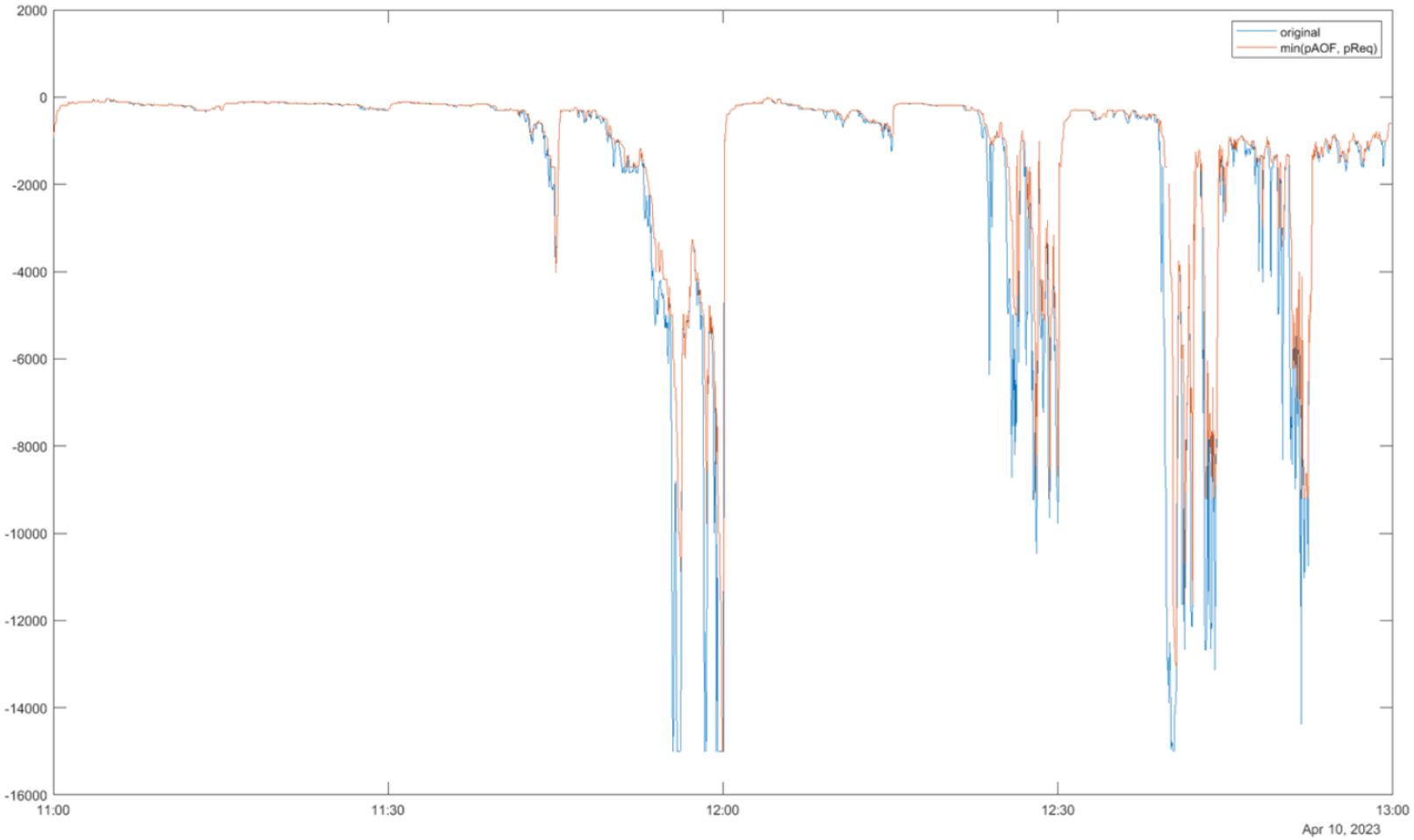



*Figure shows simulation of current CBMP (blue) and alternative CBMP determination (orange)*

- The moments when the orange and blue curve differ correspond to the time where some bids selected by the AOF are not activated by the TSO controller.
- This alternative way to compute the cross-border marginal price would reduce the occurrence of short price incidents but would have limited impact on long price incidents.

Graph presented by TSOs at Market European Stakeholder Committee on 7 December 2023

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# Q&A session

## 14:25 - 14:35

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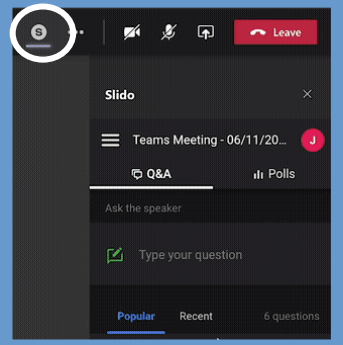

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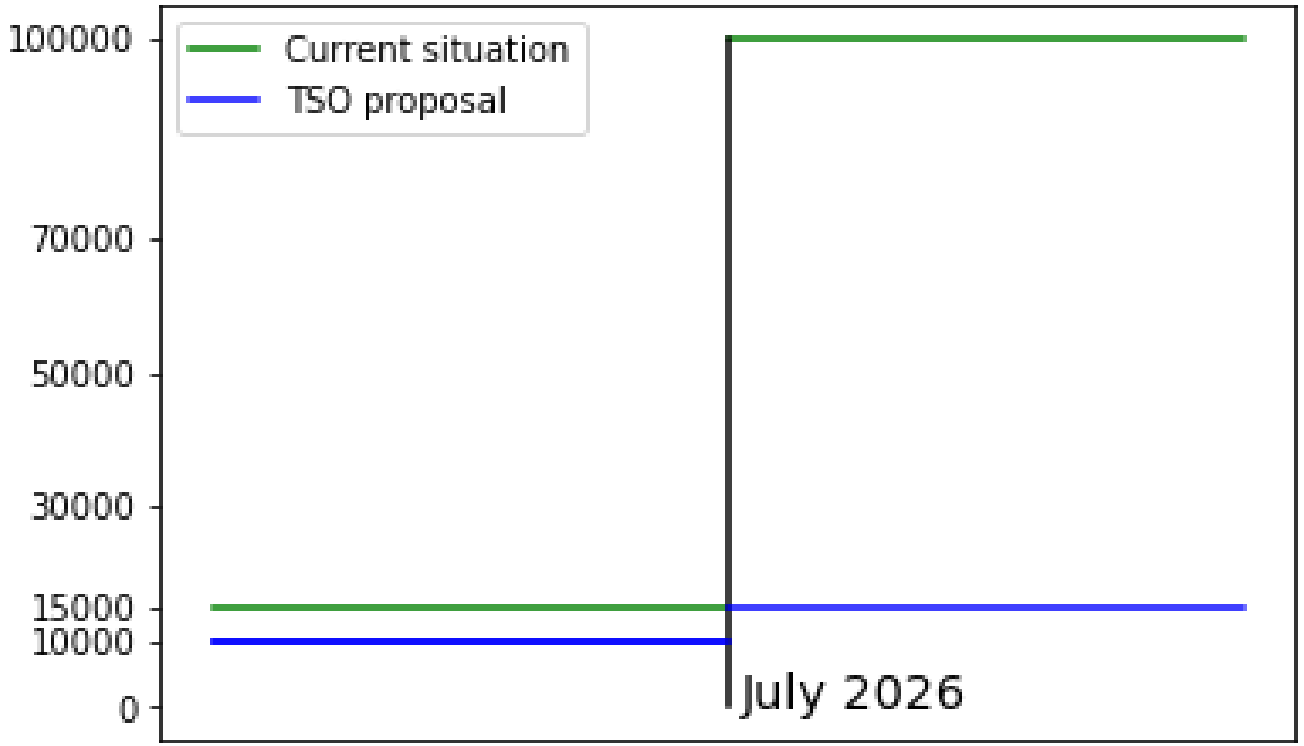
# Transitional and technical price limits

Gilles BERTRAND, Policy Officer Market Codes – Electricity Department, ACER

# TSO proposal




Practical effect of current price limits

- **Transitional price limit:** +/- 10,000 EUR/MWh (from +/- 15,000 EUR/MWh)
- **Technical price limit**: +-15,000 Eur/MWh (from +/- 99,999 EUR/MWh)
- Adjustment mechanism based on evolution of the harmonized maximum/minimum clearing price (HMMCP) for single intraday coupling (SIDC)
- Adjustment mechanism accounting for prices formed at balancing platforms and specificity of balancing markets (that would be proposed in January 2026 by TSOs).

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# Automatic adjustment mechanism linked to balancing energy prices

- **Article 10(1) of the Electricity Regulation** defines that "*There shall be neither a maximum nor a minimum limit to the wholesale electricity price. This provision shall apply, inter alia, to bidding and clearing in all timeframes and shall include balancing energy and imbalance prices* […]".
- **Article 10(2) of the Electricity Regulation** sets the principles for automatic adjustment mechanism for day-ahead and intraday technical price limits: "[…] *NEMOs shall implement a transparent mechanism to adjust automatically the technical bidding limits in due time in the event that the set limits are expected to be reached. The adjusted higher limits shall remain applicable until further increases under that mechanism are required*"
- Pursuant to Article **30(2) of the EB Regulation**, "*in case TSOs identify that technical price limits are needed for efficient functioning of the market, they may jointly develop as part of the proposal pursuant to paragraph 1 a proposal for harmonised maximum and minimum balancing energy prices, including bidding and clearing prices, to be applied in all scheduling areas. In such a case, harmonised maximum and minimum balancing energy prices shall take into account the maximum and minimum clearing price for day-ahead and intraday timeframes pursuant to Regulation (EU) 2015/1222*".
- A harmonized maximum/minimum price for balancing energy with a value lower than the current technical price limit can be introduced in balancing energy markets if an adjustment mechanism is introduced based on a transparent mechanism including some predefined triggering conditions.

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# Adjustment mechanism for the harmonized maximum and minimum prices for balancing energy

Gilles BERTRAND, Policy Officer Market Codes – Electricity Department, ACER

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# Intraday adjustment mechanism

| Description | Parameters value |
|---|---|
| Price spike definition | Clearing price above **70%** in at least one connected bidding zone |
| Trigger conditions | triggers over at least **2 different days** in a rolling **30 days** |
| Transition period | **28 days** |
| Treatment of the transition period | No possibility to trigger the price adjustments |
| Increase steps if the upward threshold is reached [€/MWh] | **+500 €/MWh** |
| Increase steps if the downward threshold is reached [€/MWh] | **- 100€/MWh** |
| Specific conditions of intraday markets | No trigger in the continuous segment of SIDC |

Intraday adjustment mechanism

The basis of the adjustment mechanism for balancing price limit can largely follow the design of the intraday one.

A priori no reason to change the threshold for the spike definition (70%), the trigger conditions, the transition period as well as the step for increase.

However, the specific conditions of balancing markets shall be considered.

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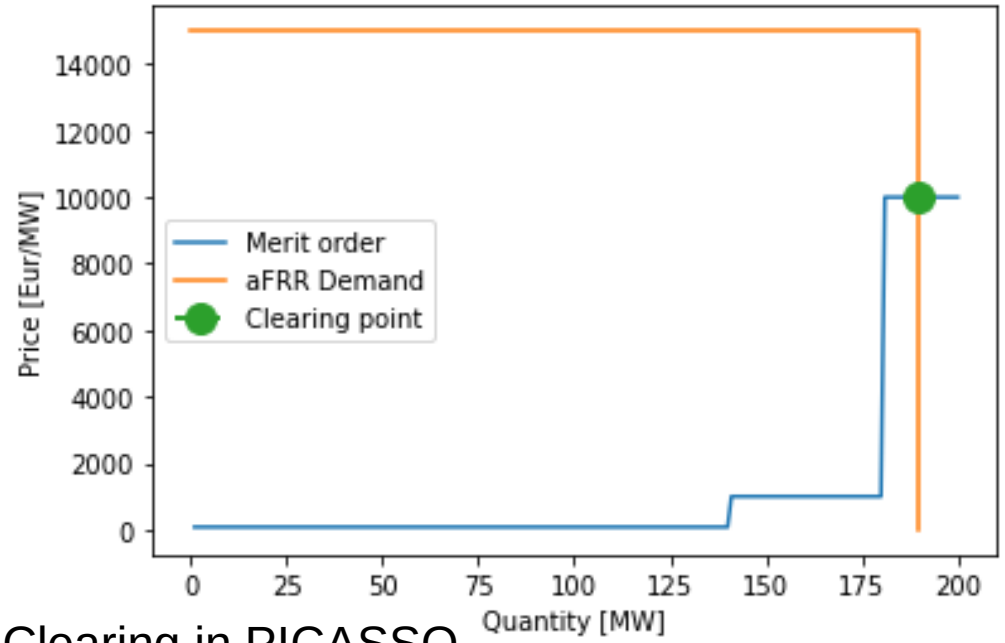
# Specific Condition 1

Different market participants are exposed to different prices in balancing

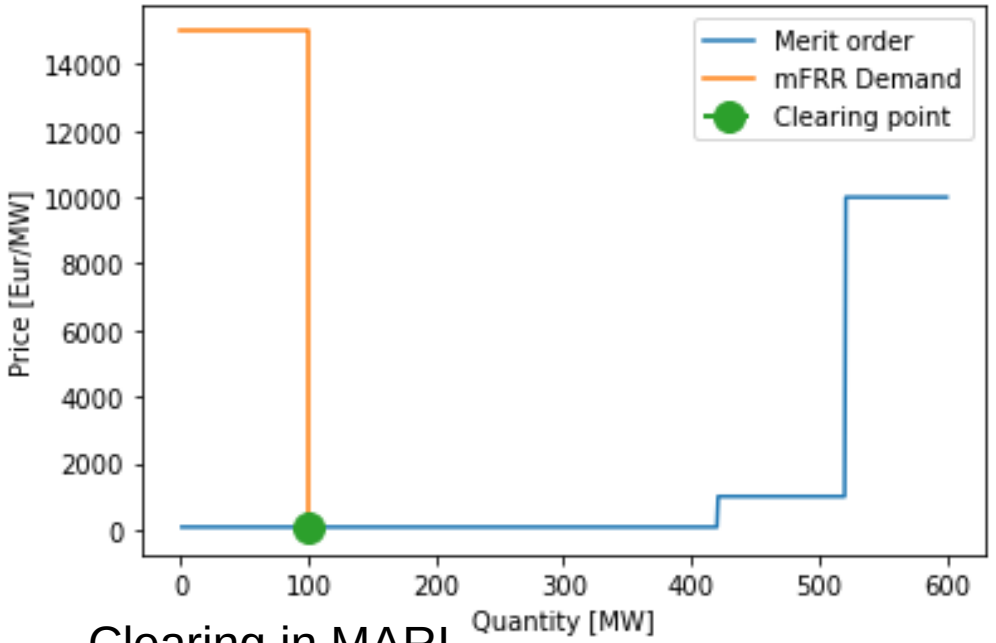
| Type of market participants | Price | Settlement granularity |
|---|---|---|
| aFRR BSPs | aFRR CBMP | 4-second |
| mFRR BSPs | mFRR CBMP | 15-minute |
| BRPs | Imbalance price | 15-minute |

- In day-ahead and intraday, if a certain clearing price is reached, it means that a supplier was ready to sell at that price and that a buyer was ready to pay that price. Both suppliers and demand can trade at the same granularity and price.
- In balancing, it is not because the CBMP reaches a certain level during a 4 second period that a BRP was ready to pay that price because the BRPs did not have the possibility to react on that price but only to a 15-minute price.
- **Condition 1: For mFRR, we would take the cross-border marginal price. For aFRR, we would take the weighted average of the cross-border marginal prices during the imbalance settlement period.**

# Specific Condition 2




Clearing in PICASSO




Clearing in MARI

- Another specificity of balancing markets is that the supply is split in different products (aFRR and mFRR).
- High CBMPs can take place in one balancing platform while cheap bids are still available in another balancing platform.
- **Condition 2: we would take as a specific condition that there is both a trigger in PICASSO and in MARI for the same 15-minute period or imbalance settlement period.**

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# Specific Condition 3

- A specific condition that can also be considered is that the adjustment mechanism would not be triggered if the price formation was put into question due to the lack of competition in the market.

- This condition could take two forms:

  - an ex-ante condition that would check some indicators of the competitivity of the market (e.g. high market concentration, existence of pivotal BSPs).

  - an ex-post assessment on whether the CBMPs that would lead to an adjustment arises from an efficient price formation (e.g. whether the offers from BSPs reflect marginal cost (incl opportunity costs).

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# Q&A session

## 14:45 - 14:55

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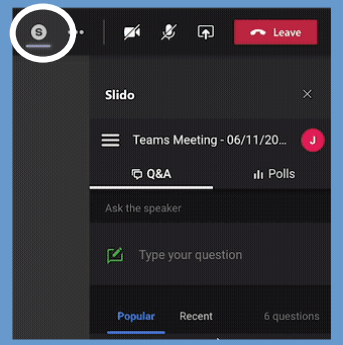

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# Closing remarks

Mathieu FRANSEN, Team Leader Market Codes – Electricity Department, ACER

# Thank you.
# Any questions?

The contents of this document do not necessarily reflect the position or opinion of the Agency.

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