

# PICASSO & IGCC Stakeholder Workshop meeting

8<sup>th</sup> December 2022, telco

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# Agenda

Topic 1: Historical evolution of IGCC

Topic 2: PICASSO project planning and progress

Topic 3: How IGCC works (in relation with PICASSO)

Topic 4: PICASSO First Operational Experiences

- First operational values
- Development of CBMP
- PICASSO impact on IGCC

Topic 5: PICASSO's TSO accession roadmap and go-live planning

Q&A

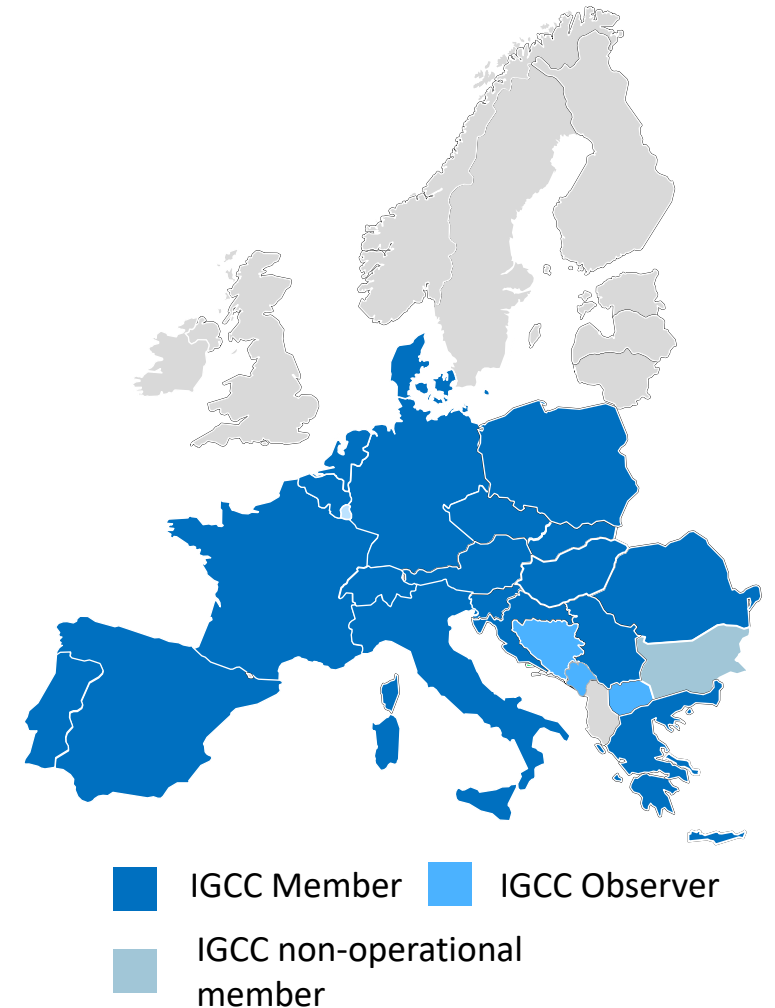
# 1. Historical evolution of IGCC

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# Historical evolution of IGCC

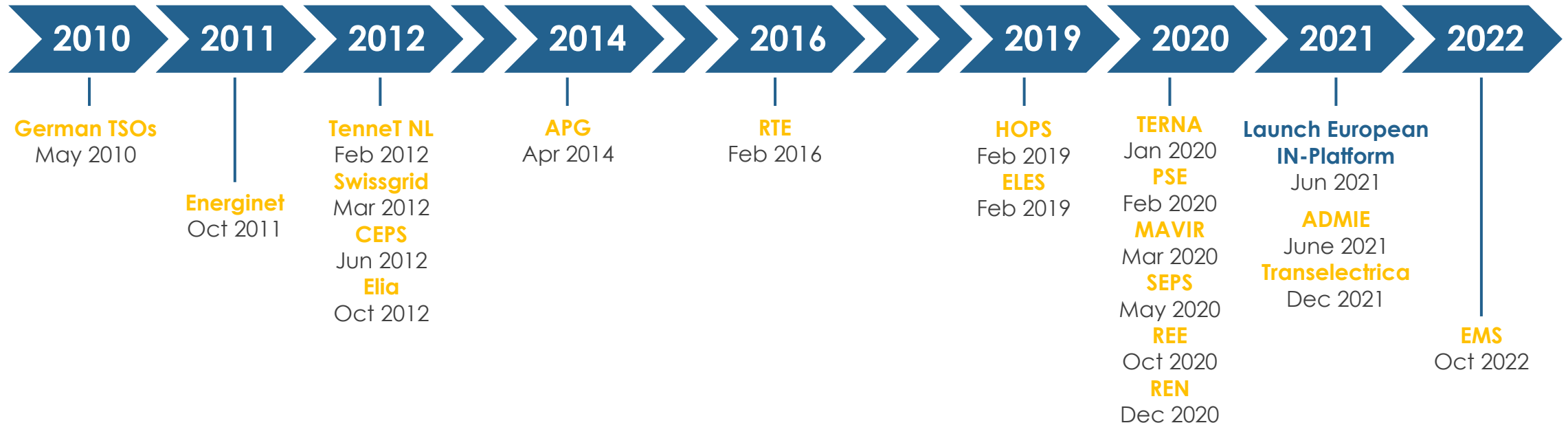
## Introduction

- The International Grid Control Cooperation (IGCC) is the implementation project chosen by ENTSO-E in February 2016 to become the European Platform for the imbalance netting process (IN-Platform) as defined by the guideline on electricity balancing ([EB GL Art. 22](#)).
- IGCC was launched in October 2010 as a regional project and has grown to cover 24 countries (27 TSOs) across continental Europe, including all those that need to implement the IN-Platform according to the EB Regulation.



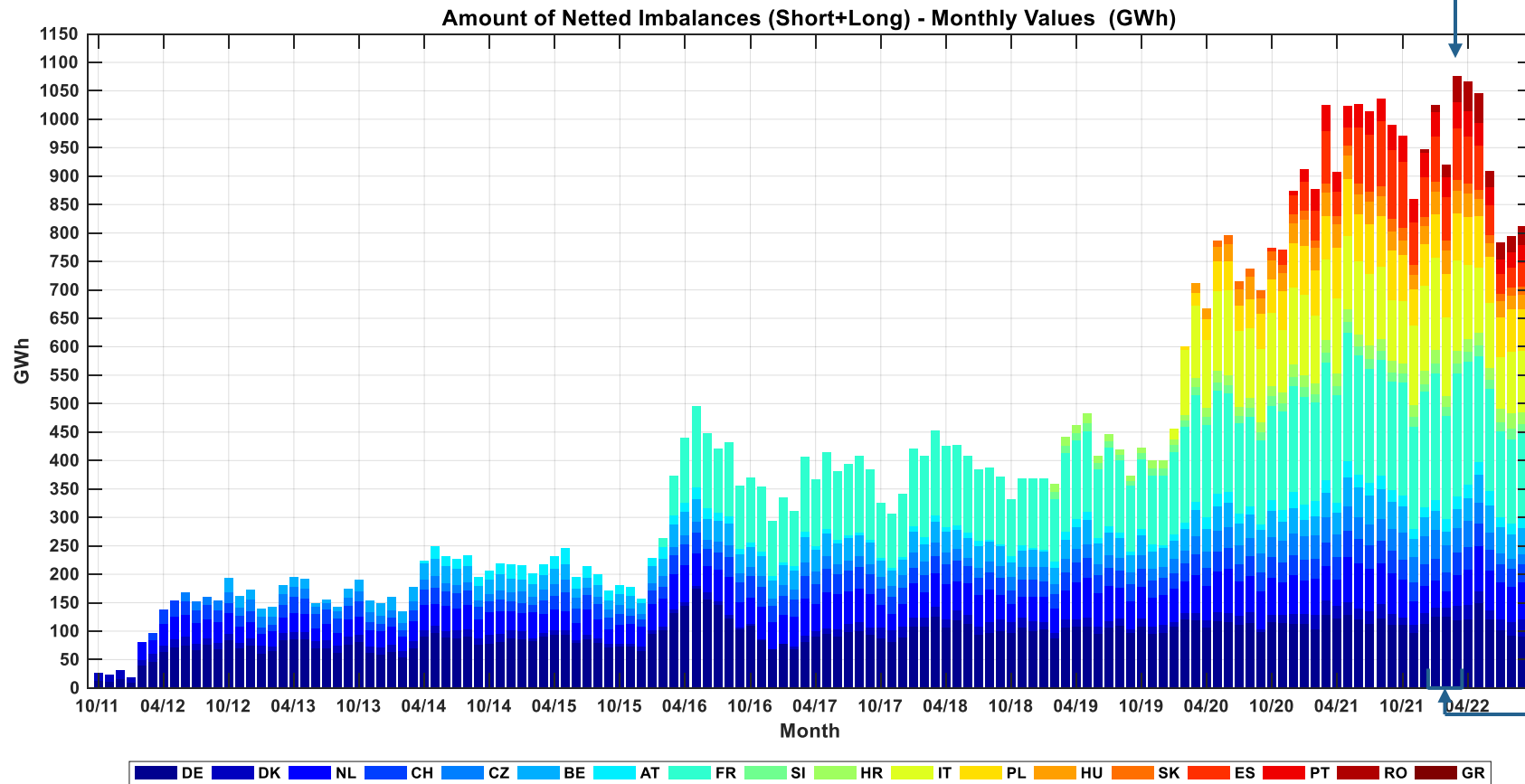
# Historical evolution of IGCC

## Accessions timeline



# Historical evolution of IGCC

## Amount of Netted Imbalances

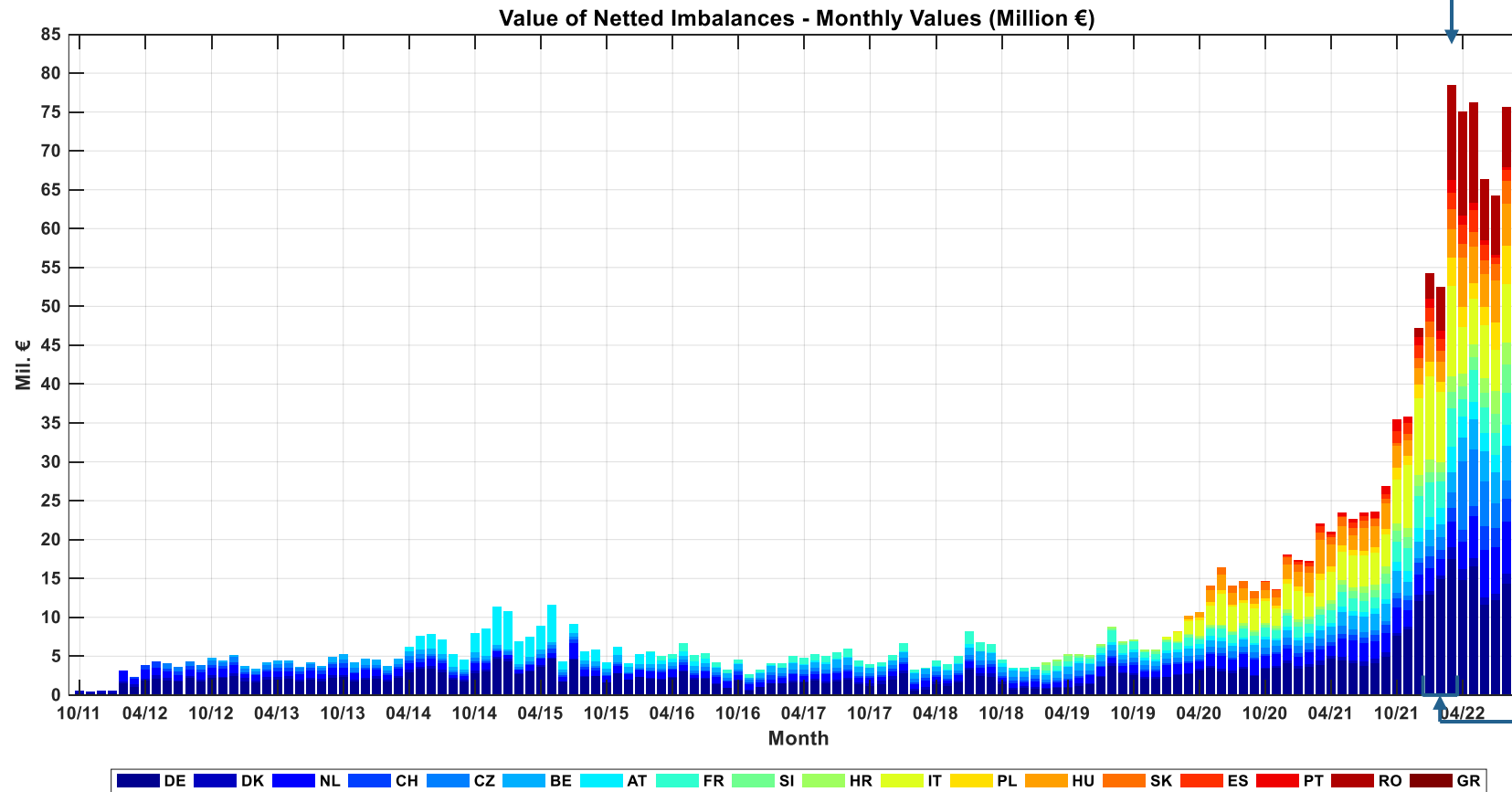


New record of monthly value amount of netted imbalances: more than 1 TWh in March 2022

The quarterly energy savings in Q1 2022 have reached 3021 GWh

# Historical evolution of IGCC

## Value of Netted Imbalances



New record of monthly value amount of netted imbalances: nearly 80 million € in March 2022

Aggregated savings: surpassed 1.5 billion € savings.

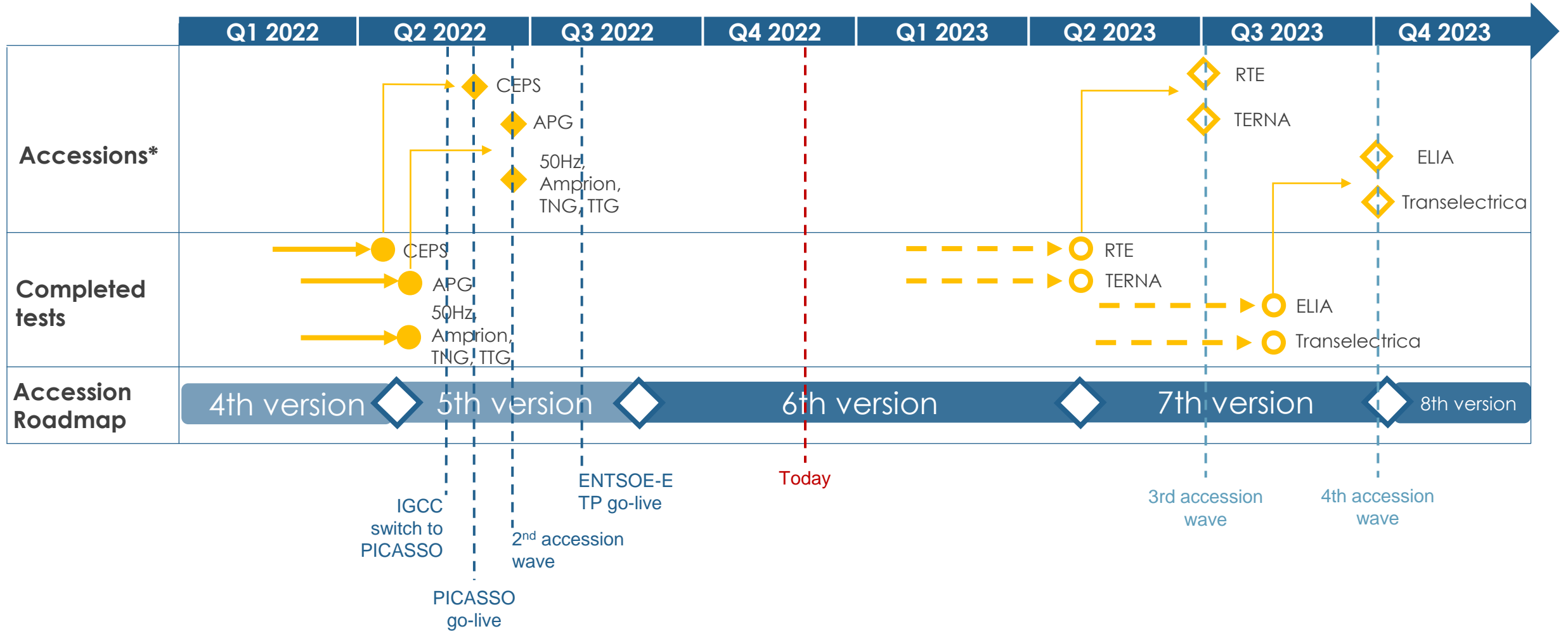
The value of quarterly savings in Q1 2022 has reached 217.61 million €

# 2. PICASSO project planning and progress

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# PICASSO project planning and progress



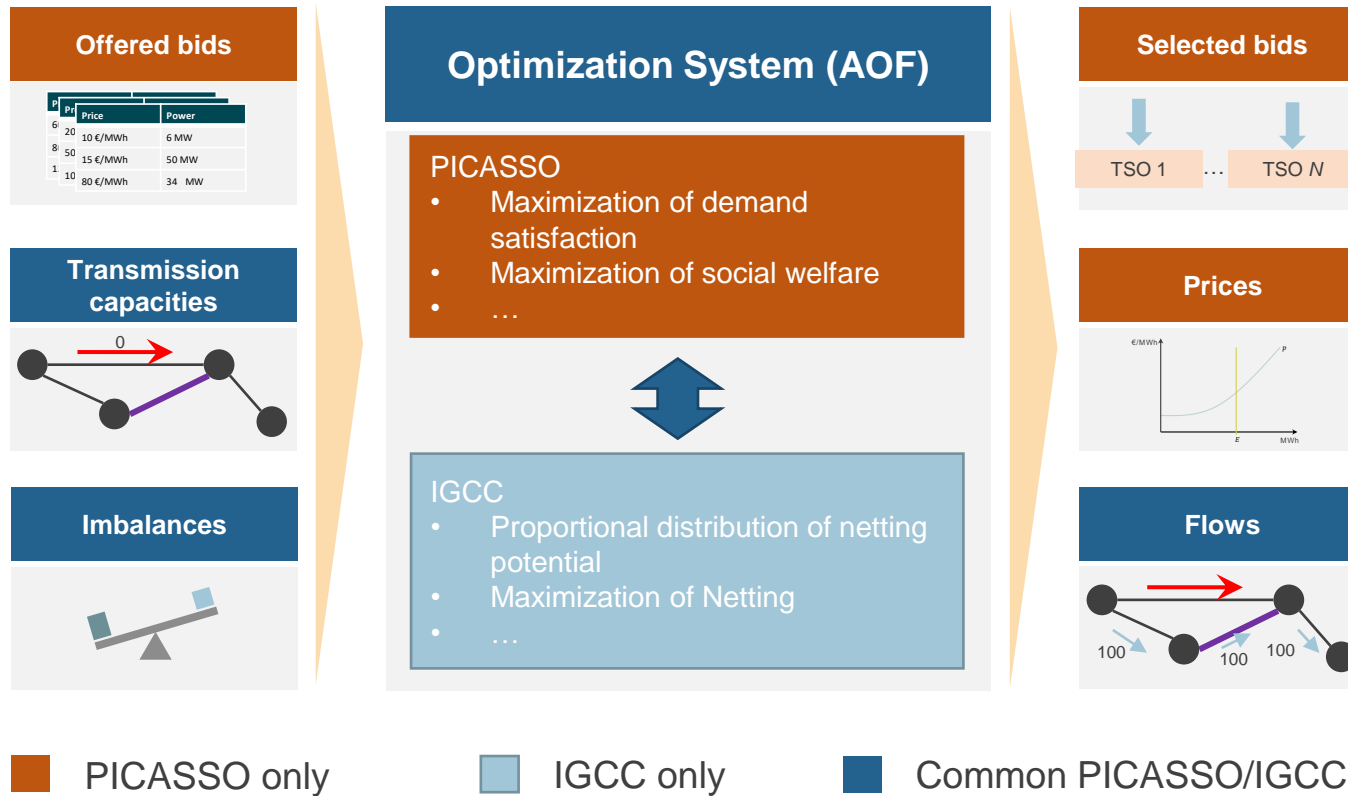
\*published accession roadmap includes additional information and risks on the planning

# 3. How IGCC works in relation with PICASSO

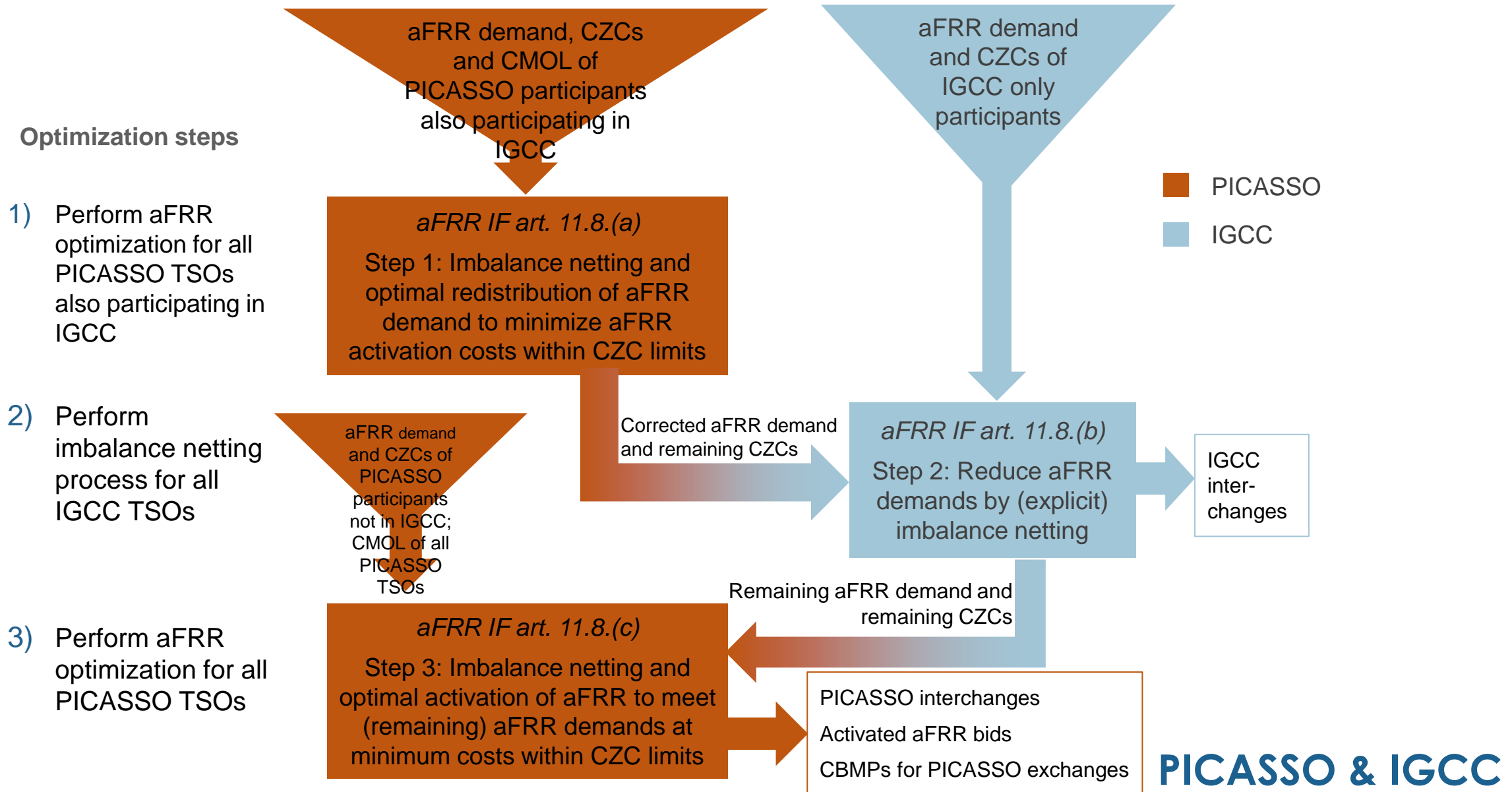
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# How IGCC works

## High level design of Optimization



# How IGCC works



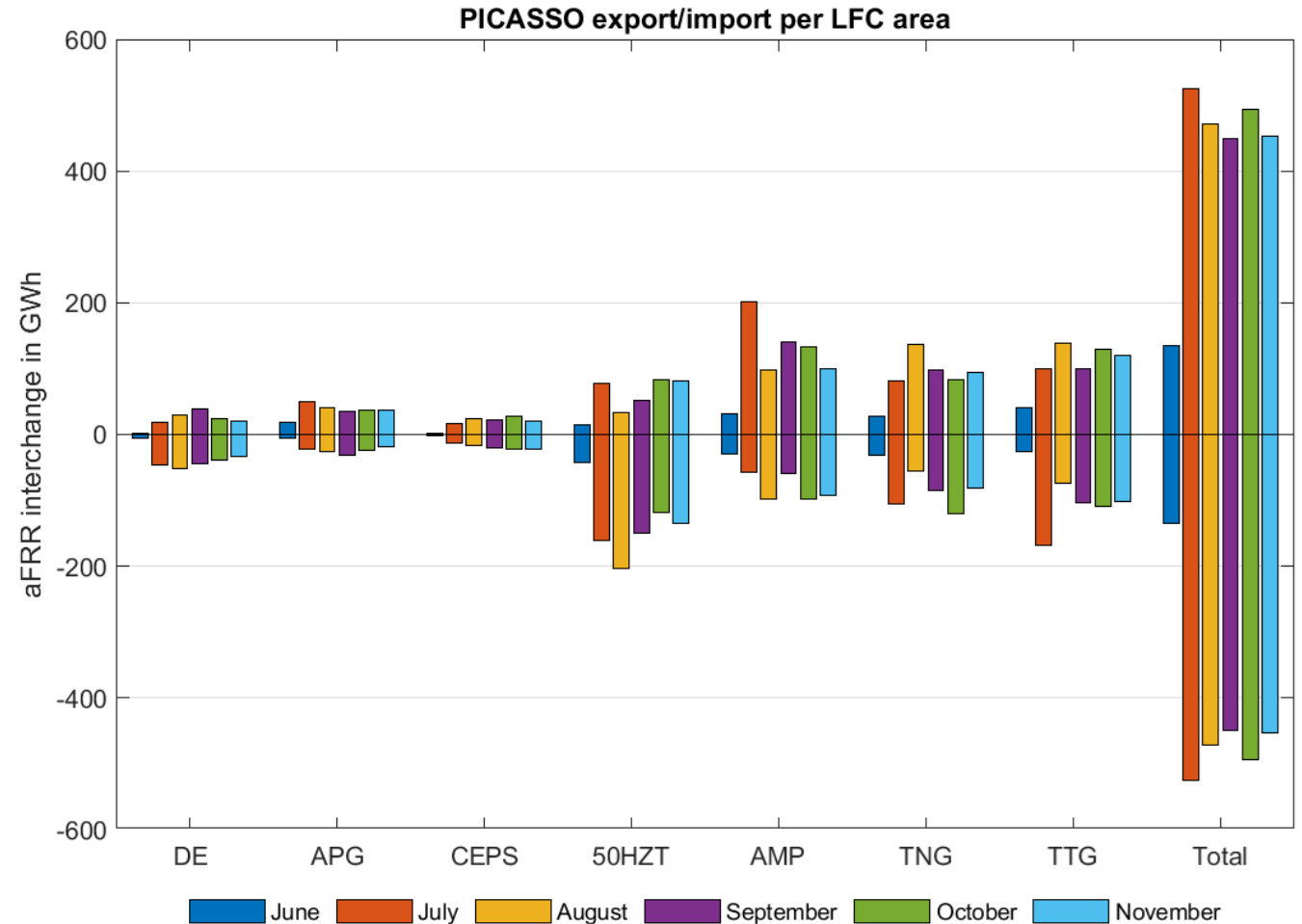
# 4. PICASSO First Operational Experiences

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# PICASSO first operational experiences

## Energy interchange

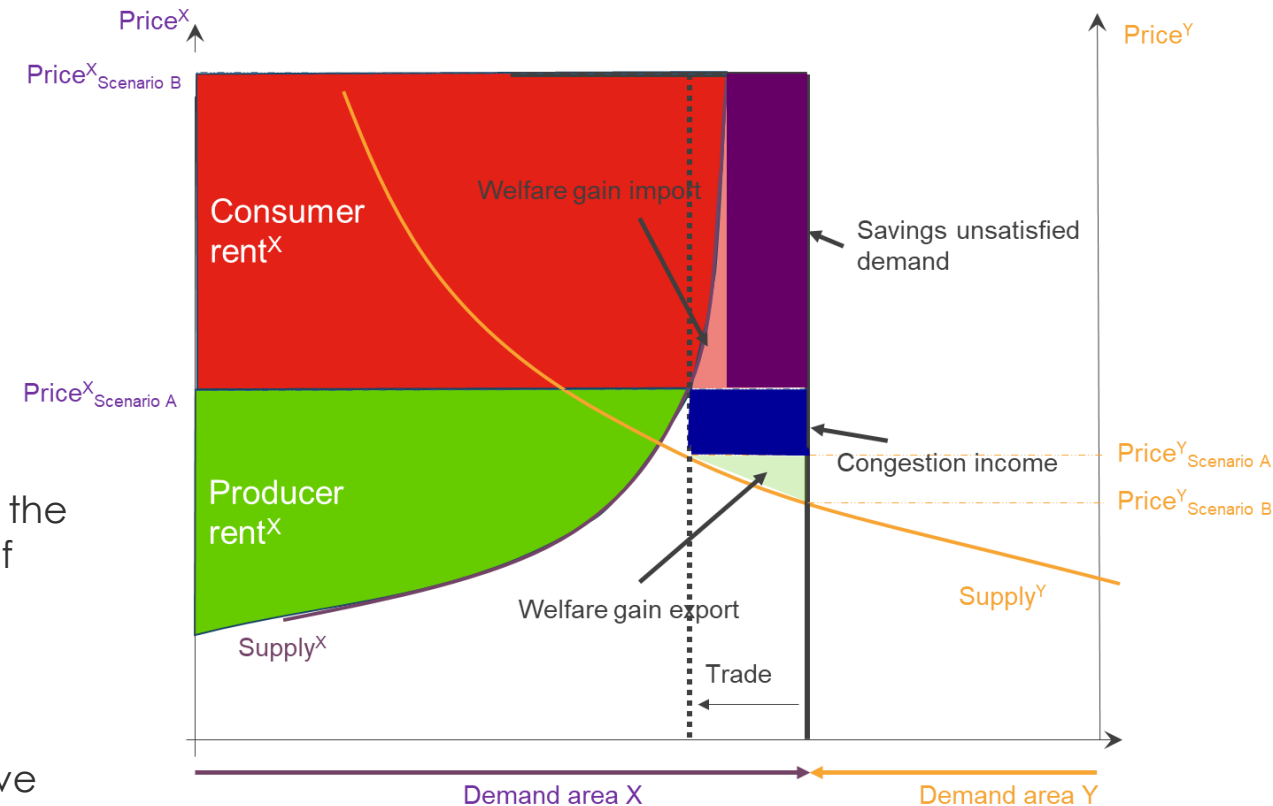
- Total energy interchange since go-live: 2.53 TWh
- Majority of interchange within the German Bidding Zone, where the Cross-Border Capacity is generally not limited
- International interchange since go-live: 463 GWh
- Implicit netting within PICASSO is included in these numbers, netting in IGCC is excluded.



# PICASSO first operational experiences

## Introduction to social welfare calculation

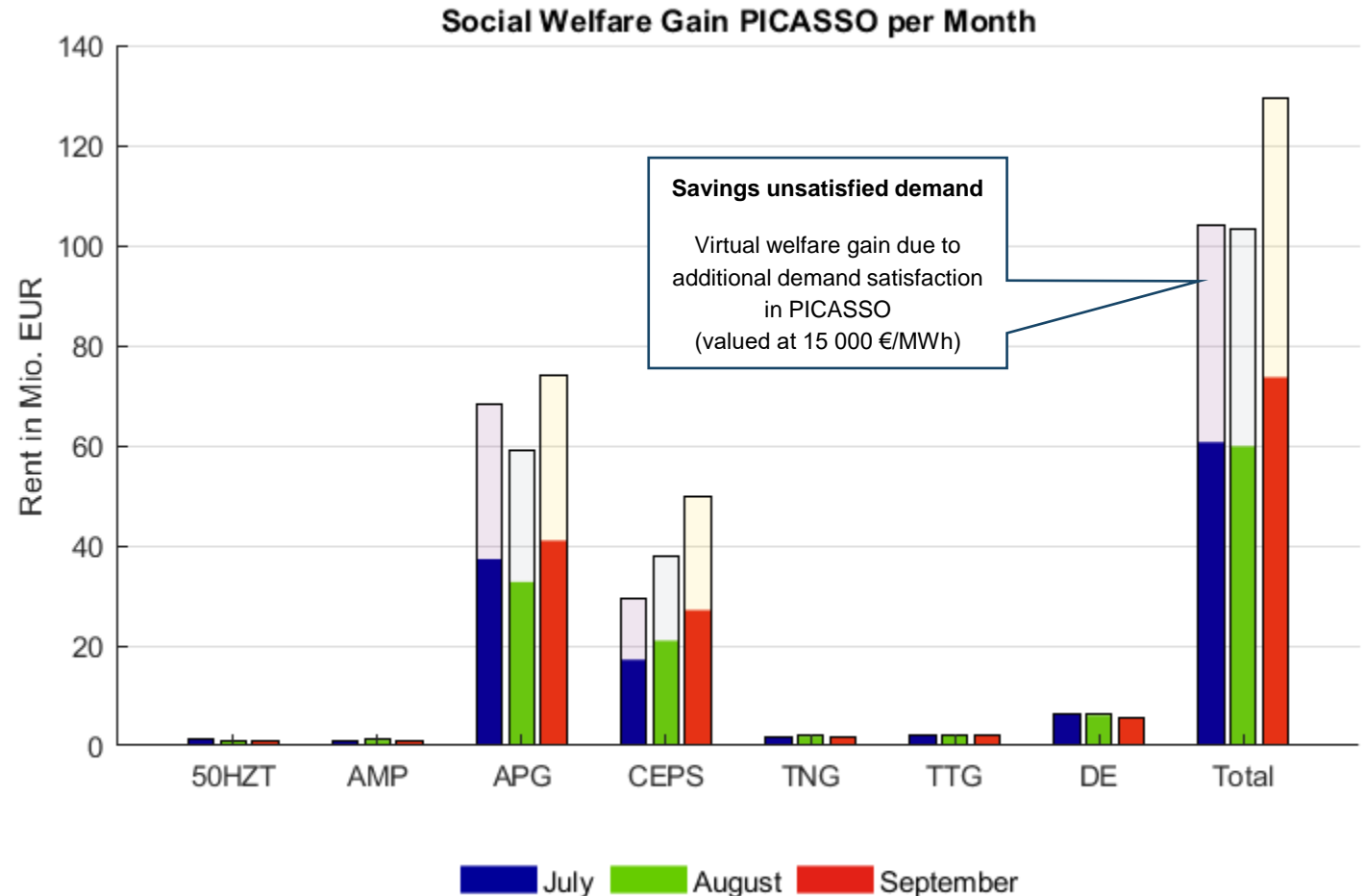
- Two situations are compared:
  - Scenario A: actual aFRR activation and interchange based on PICASSO
  - Scenario B (as baseline scenario):
    - Local procurement of aFRR based on actual imbalances.
    - Application of marginal Pricing and price cap. Netting via IGCC only.
    - Common aFRR activation within Germany
- Scenario B is a simulation of the activation without any aFRR exchange
- The social welfare calculation is an analysis of the benefit of the cross border aFRR exchange. The total social welfare gain of PICASSO is calculated as sum of the
  - Difference of consumer and producer rent between scenario A and scenario B
  - Congestion rent
  - Additional satisfaction of demands, that would not have been satisfied without PICASSO. *Unsatisfied demands are valued at 15 000 €/MWh*



# PICASSO first operational experiences

## Social Welfare Gain

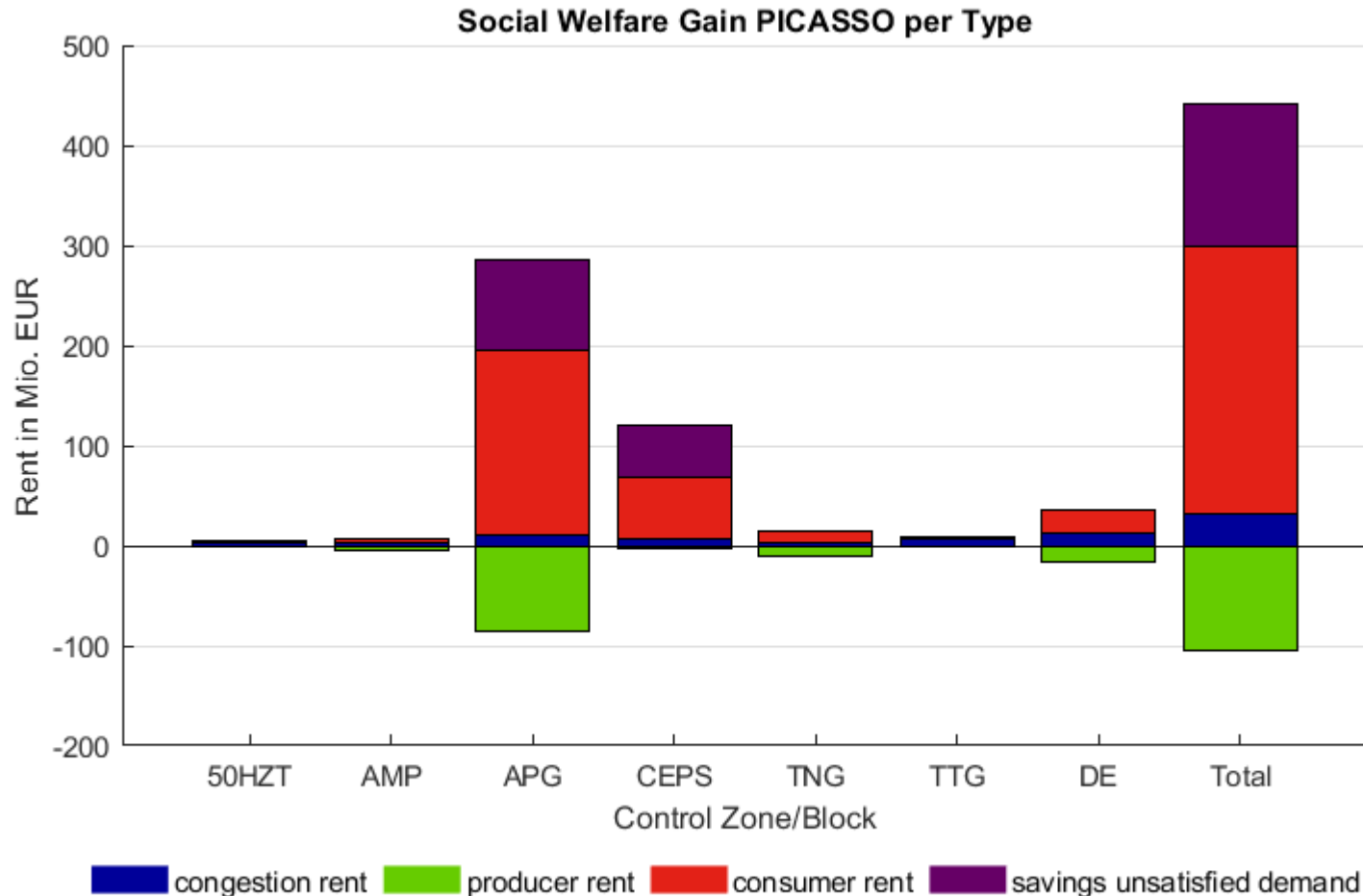
- Large welfare Gain mainly for small LFC areas, that get access to a much larger market via PICASSO
- Significant additional satisfaction of Demand via PICASSO.
- *Remark: APG procures up to 80 MW of aFRR in Germany via an Exchange Agreement. The Welfare Gain created by the activation of this capacity is attributed to PICASSO, since PICASSO is a prerequisite for the Exchange*





# PICASSO first operational experiences

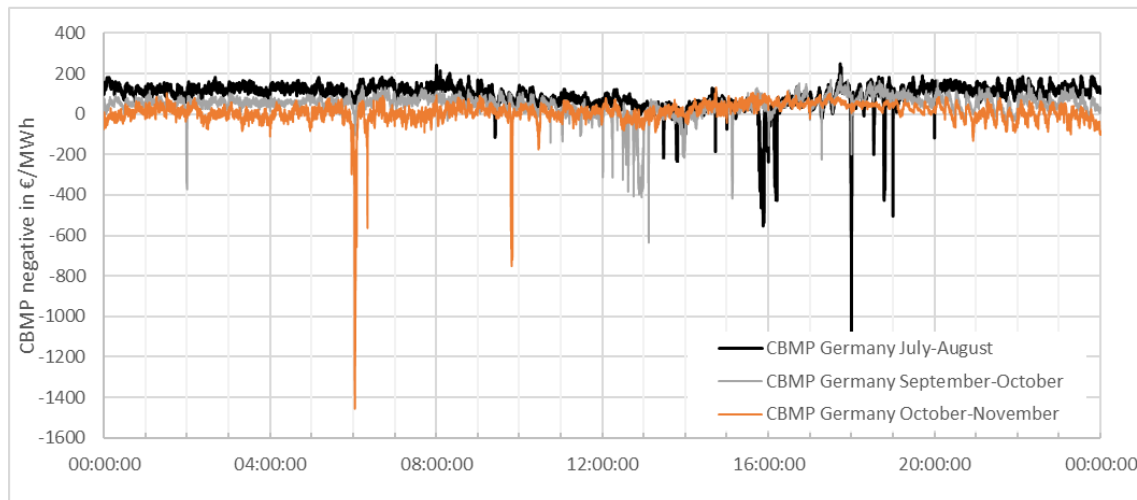
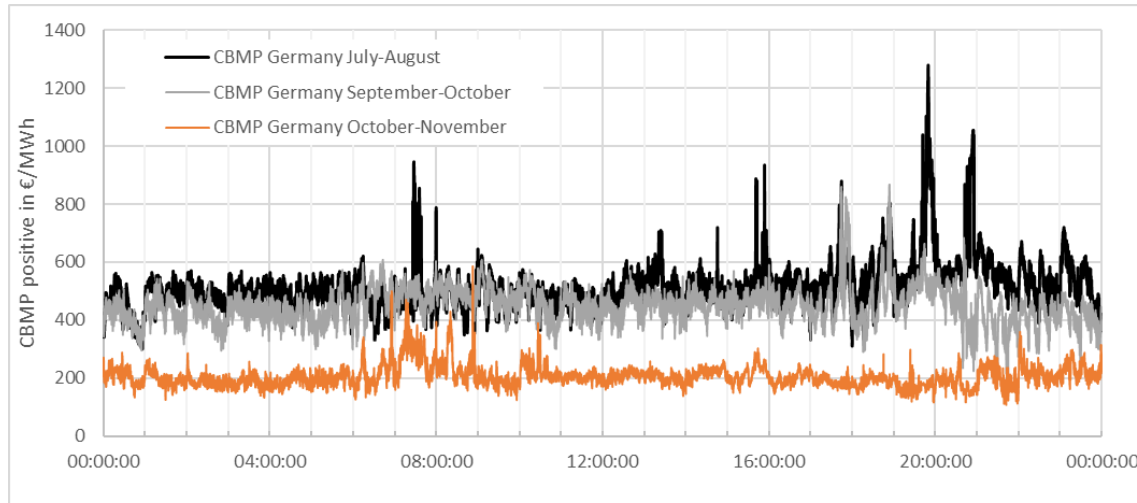
## Social Welfare Gain



- Total Welfare Gain in Q3:
  - 195 mil € without additional satisfaction of demand
  - 340 mil € with additional satisfaction
- Redistribution of social welfare between producer and consumer rent due to increased market liquidity mainly for small LFC areas
- Reminder: This is not reflective of the market impact of the PICASSO market design and marginal pricing, but just reflects the impact of the energy interchange

# PICASSO first operational experiences

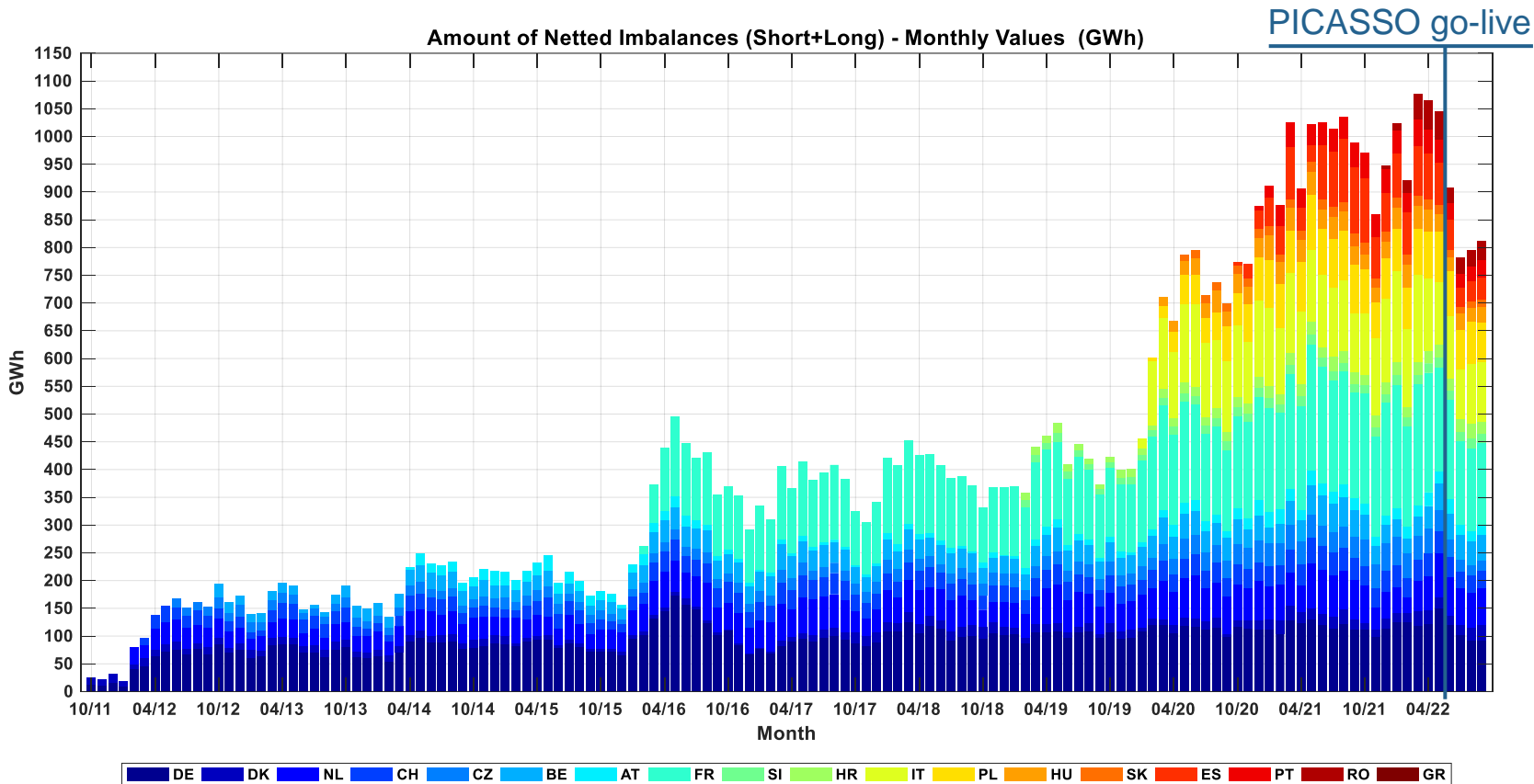
## Development of CBMP



- Mean daily evolution of the CBMP for different time periods (several weeks) are shown
- CBMP of Germany is used as an example here
- Peaks represent periods with high demands, especially during the change of the hour.
- Continuous decrease of the CBMP since August is visible
- This behaviour reflects the decrease of the price developments on the Day-Ahead market

# PICASSO first operational experiences

## PICASSO impact on IGCC



- Reduction of Netted Imbalances in IGCC since PICASSO go-live in June 2022
- Netting potential in IGCC is reduced due to implicit netting in PICASSO
- Netting in IGCC will further decrease, when more TSOs will join PICASSO
- This increases the total welfare, since cost-based netting in PICASSO provides more economic benefits than proportional netting in IGCC

# 5. PICASSO's TSO accession roadmap and go-live planning

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# PICASSO's TSO accession roadmap and go-live planning

## Introduction

All TSOs update Accession Roadmap every 6 months (in accordance with aFRRIF).

The first PICASSO Accession Roadmap was published on 24 April 2020.

The last PICASSO Accession Roadmap was published on 25 October 2022

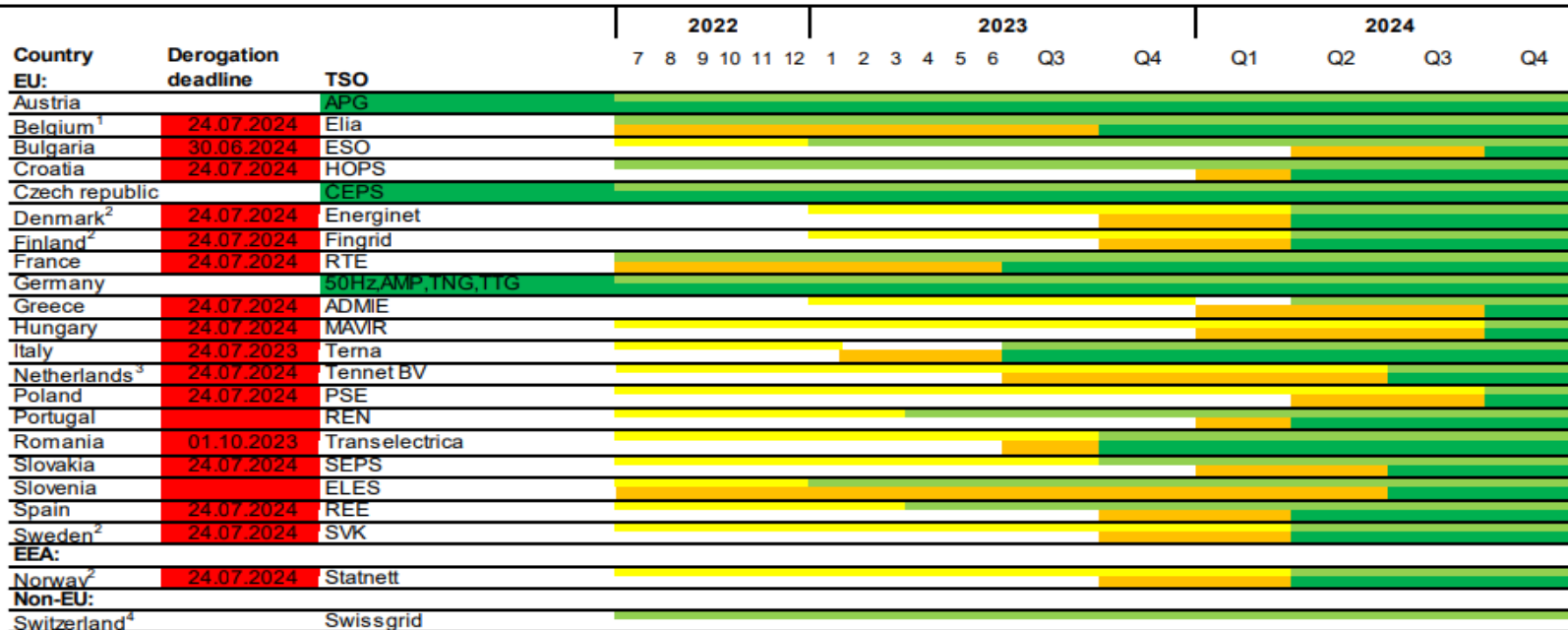
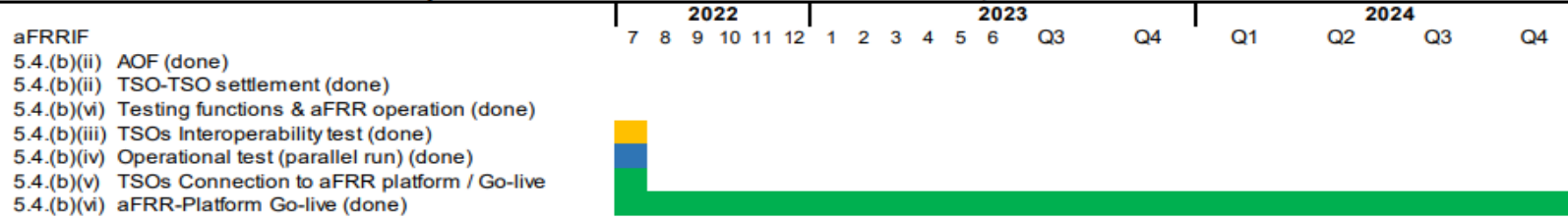
PICASSO Accession Roadmap is publicly available on the ENTSO-E website:

[https://www.entsoe.eu/network\\_codes/eb/picasso/](https://www.entsoe.eu/network_codes/eb/picasso/)

# PICASSO's TSO accession roadmap and go-live planning

## aFRR-Platform Accession Roadmap






Last updated on 25/10/2022 based on latest information available.

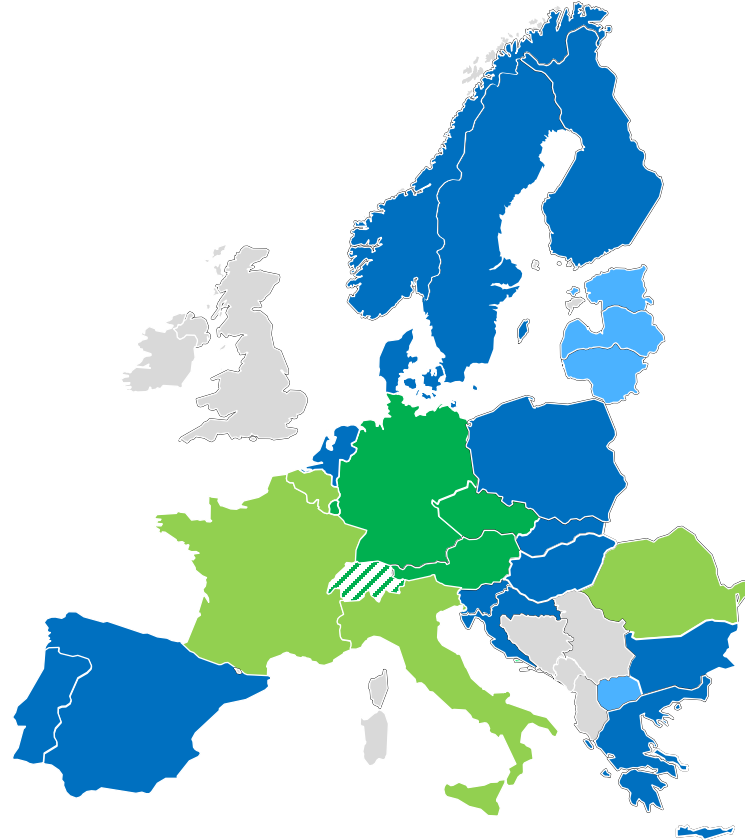


- 5.4.(b)(i) National terms and conditions development
- 5.4.(b)(i) National terms and conditions entry into force
- 5.4.(b)(iii) Interoperability tests between TSO and aFRR-Platform
- 5.4.(b)(v) TSO connection to aFRR-platform / Go-live
- 5.4.(b)(vii) EBGL Article 62 Derogation considered (no deadline listed) / requested (no deadline listed) / granted (new deadline listed)

1) A first version of the T&C has entered into force early May when local bidding has been adapted and a second one will enter into force when ELIA will connect to PICASSO. The plan presented in this roadmap shall be regarded as a preliminary, non-binding estimate. The planned connection time is expected in Q4 2023 - Q1 2024. 2) The plan presented in this roadmap shall be regarded as a preliminary, non-binding estimate. The planned connection time is expected in Q2 2024. 3) TenneT NL aims for implementation and go-live by July 2024 and has been granted a derogation until then. However, there is a real risk that the final derogation will take place even later than the requested derogation period. If TenneT takes these risks into account, TenneT expects to participate in the summer of 2025 to participate in the aFRR platform and TenneT will enter into discussions with relevant stakeholders if it becomes clear that the risks already in the planning manifest themselves. 4) 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 General Court of the European Union.

# PICASSO's TSO accession roadmap and go-live planning

-  In operation
-  Technical readiness
-  Plan to join in 2023\*
-  Derogation 2024
-  Observers



\*based on the current accession roadmap which includes additional information and risks on the planning

# PICASSO's TSO accession roadmap and go-live planning

## Summary

PICASSO Accession Roadmap is publicly available on the ENTSO-E website:

[https://www.entsoe.eu/network\\_codes/eb/picasso/](https://www.entsoe.eu/network_codes/eb/picasso/)

6 TSOs joined before the aFRRiF deadline on 24 July 2022

- CEPS joined on 1 June 2022
- APG, 50Hz, AMP, TNT, and TNG joined on 22 June 2022

14 TSOs have a derogation and 2 are in the process of asking their NRA for derogation

Among TSOs having a derogation, 4 TSOs plan to join in 2023\*

- ELIA, RTE, Terna and Transelectrica

\*based on the current accession roadmap which includes additional information and risks on the planning



# 6. Q&A

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# Q&A

Do you have any questions?