

Introduction

Workshop:

High level design for the participation in MARI & PICASSO platforms

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European Platforms At A Glance

Commission Regulation (EU) 2017/2195 establishes the guidelines for electricity balancing (EBGL) rules for the integration of European Balancing Energy Markets. This integration is achieved with the establishment of common European platforms with the aim of enhancing competition, transparency, efficiency of the European balancing system and security of supply, while supporting the implementation of the Union's targets for the penetration of RES.

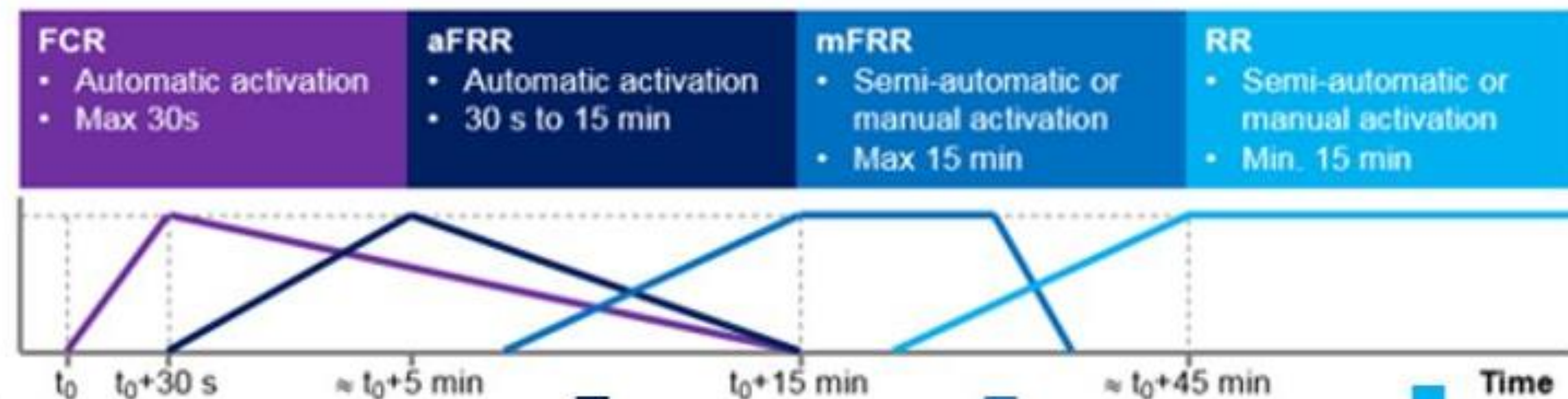
These platforms concern:

- the exchange of replacement reserves (**TERRE-EBGL Art. 19**),
- the exchange of balancing energy from manual frequency restoration reserves (**MARI-EBGL Art.20**),
- the exchange of balancing energy from automatic frequency restoration reserves (**PICASSO-EBGL Art.21**),
- the imbalance netting process (**IGCC-EBGL Art. 22**),

European Platforms At A Glance

IPTO participates
in the European
IGCC platform
since June 2021

**IPTO is an active
member** of the
European
platforms MARI
and PICASSO



IGCC

PICASSO

MARI

TERRE



IGCC Member
IGCC Non-operational Member
IGCC Observer



PICASSO Member
PICASSO Observer



MARI Member
MARI Observer



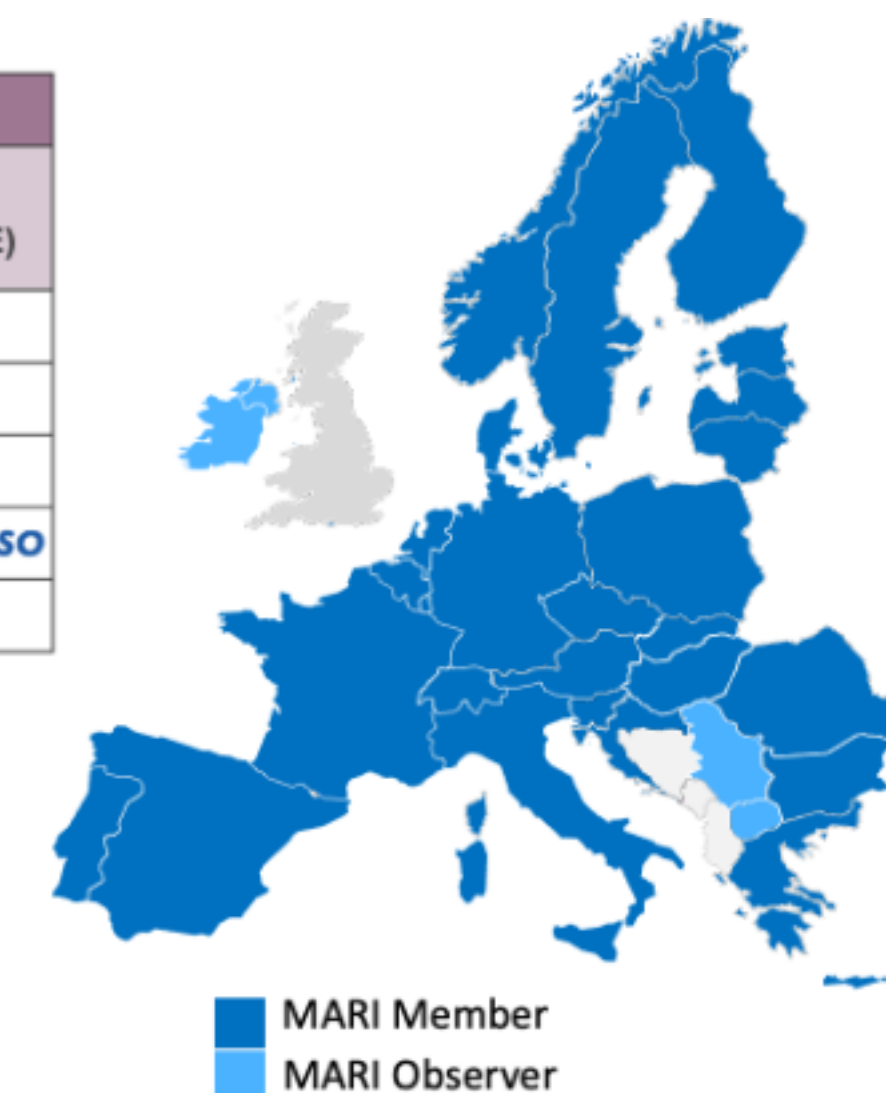
Member
Non-operational Member
Project member
Observer

MARI Platform

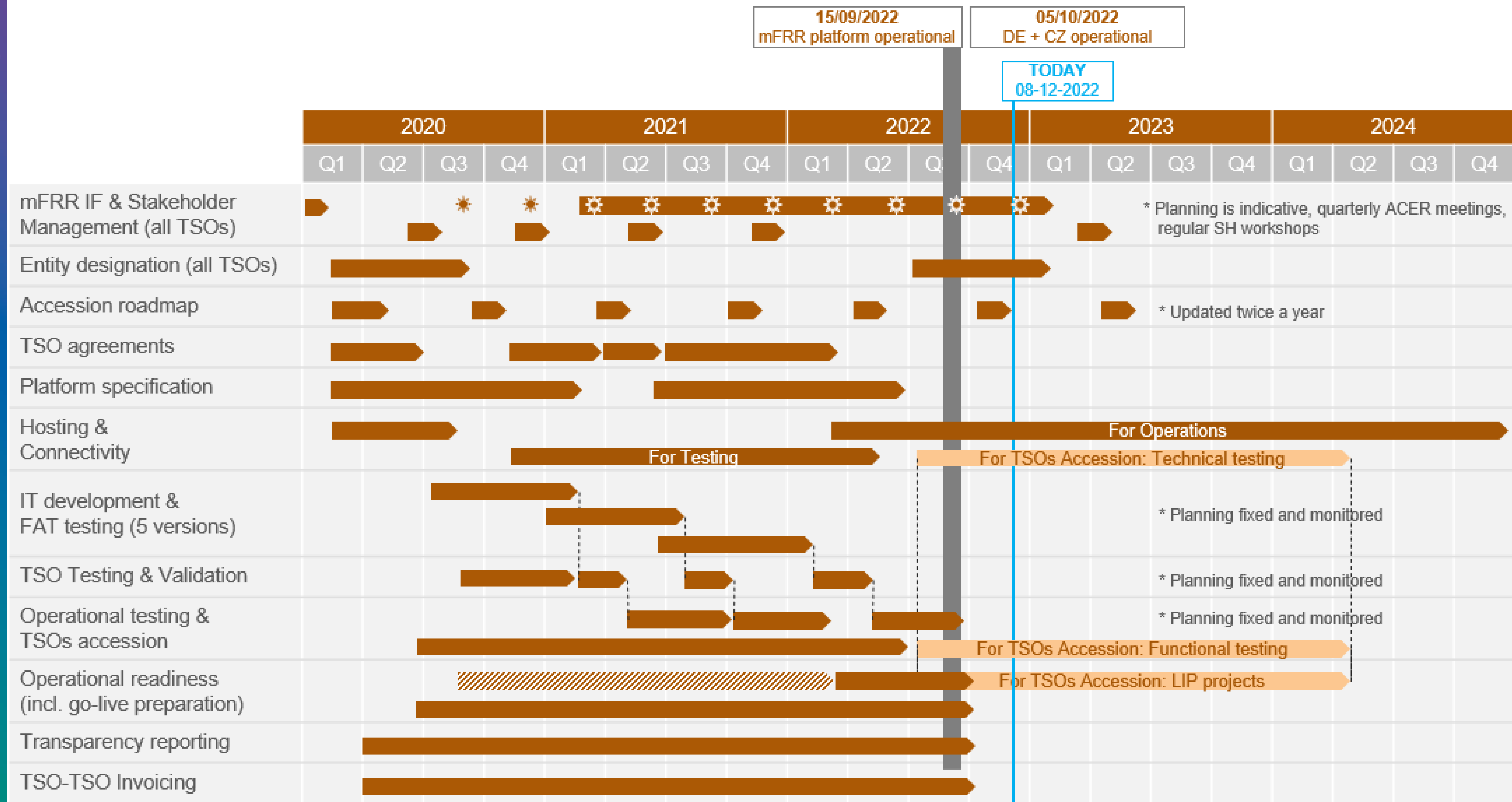
The **Manually Activated Reserves Initiative** (MARI) is the European Platform for the exchange of balancing energy from restoration reserves with manual activation (mFRR).

- The project is part of the obligations set in the Electricity Balancing Guideline (EBGL-Art.20):
 - All TSOs shall establish and make functional a single European platform for the exchange of Balancing Energy from the activation of manual frequency restoration reserved (mFRR)
 - The MARI project is designed to manage the pan-European business and IT implementations (design, development and testing) of all rules and requirements in scope of the mFRR platform, including vendor management, and to manage the business and IT implementation of the Capacity Management function for all balancing platforms (aFRR, mFRR, RR and IN).
- As of October 2022, **29** TSOs have been active members of the MARI project, while **4** additional TSOS +ENTSO-E have joined the project as observes.

| 33 TSOs + ENTSO-E (Observer) | | | | | | | |
|------------------------------|--|-----------------|----------|-------------|-------------------------|-----------------------------------|---------|
| MARI Members (29 TSOs) | | | | | | MARI Observers (4 TSOs + ENTSO-E) | |
| Austria | APC | Greece | ASST | Spain | RED ELÉCTRICA DE ESPAÑA | Serbia | EMC |
| Belgium | elita | Italy | ENEL | Sweden | Svea | Ireland | ERDCO |
| Croatia | HOPS | Latvia | AST | Switzerland | swissgrid | Northern Ireland | SONI |
| Czech Republic | ČEPS | Lithuania | Ukrtrans | Luxembourg | creos | North Macedonia | MEPSO |
| Denmark | ENERGINET | Norway | Statnett | Bulgaria | BEH | ENTSO-E | entso-e |
| Estonia | elering | Netherlands | tennet | | | | |
| Finland | FINGRID | Portugal | REN | | | | |
| France | RTE | Poland | PSE | | | | |
| Hungary | MOL | Romania | TRASE | | | | |
| Germany | amprion, SÜDHETZ, TENNET, TRANSDIST, TRANSNET BW | Slovak Republic | SZEP | | | | |
| | | Slovenia | ELES | | | | |



MARI Project Planning



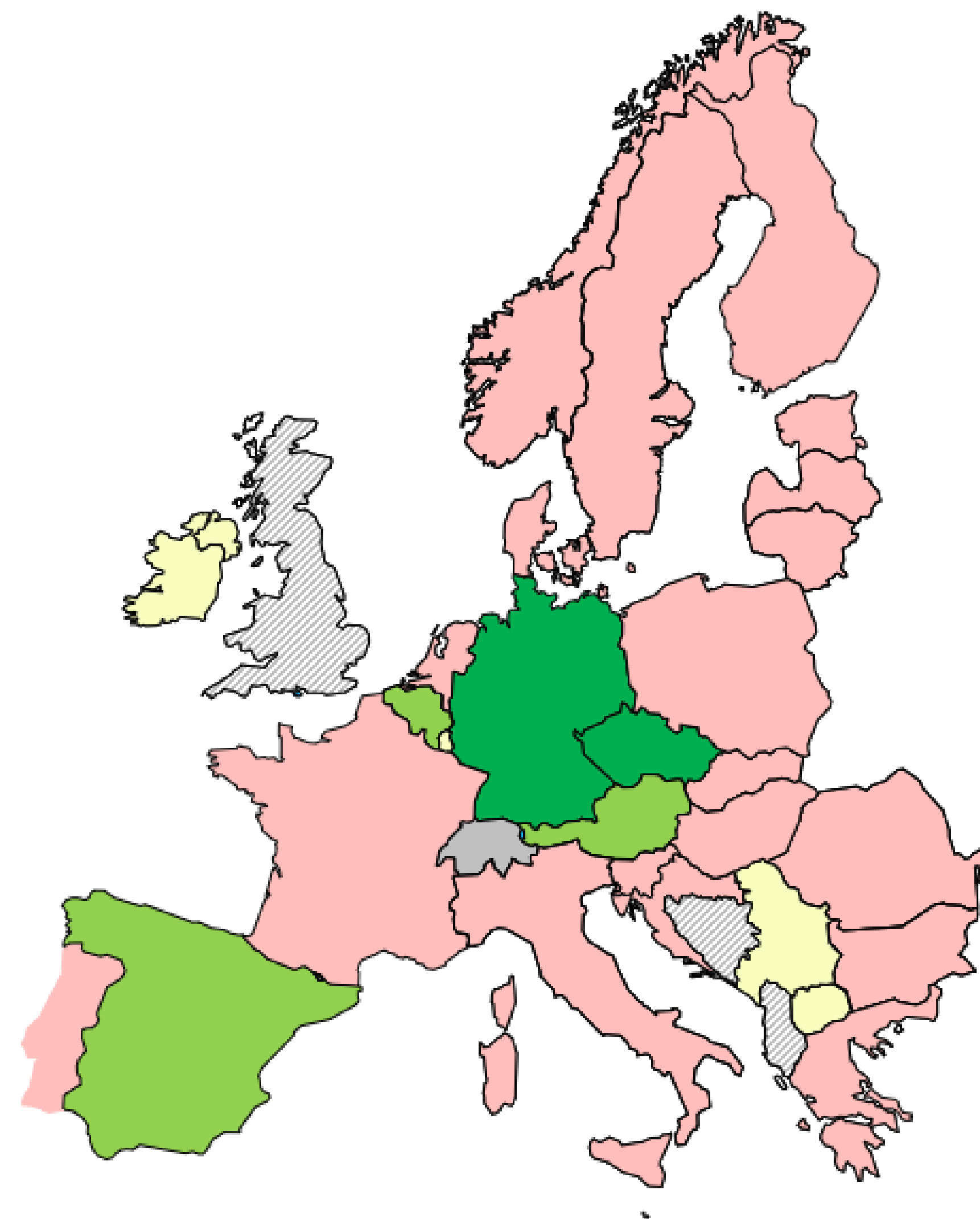
*Progress as of December 2022

MARI Accession Roadmap

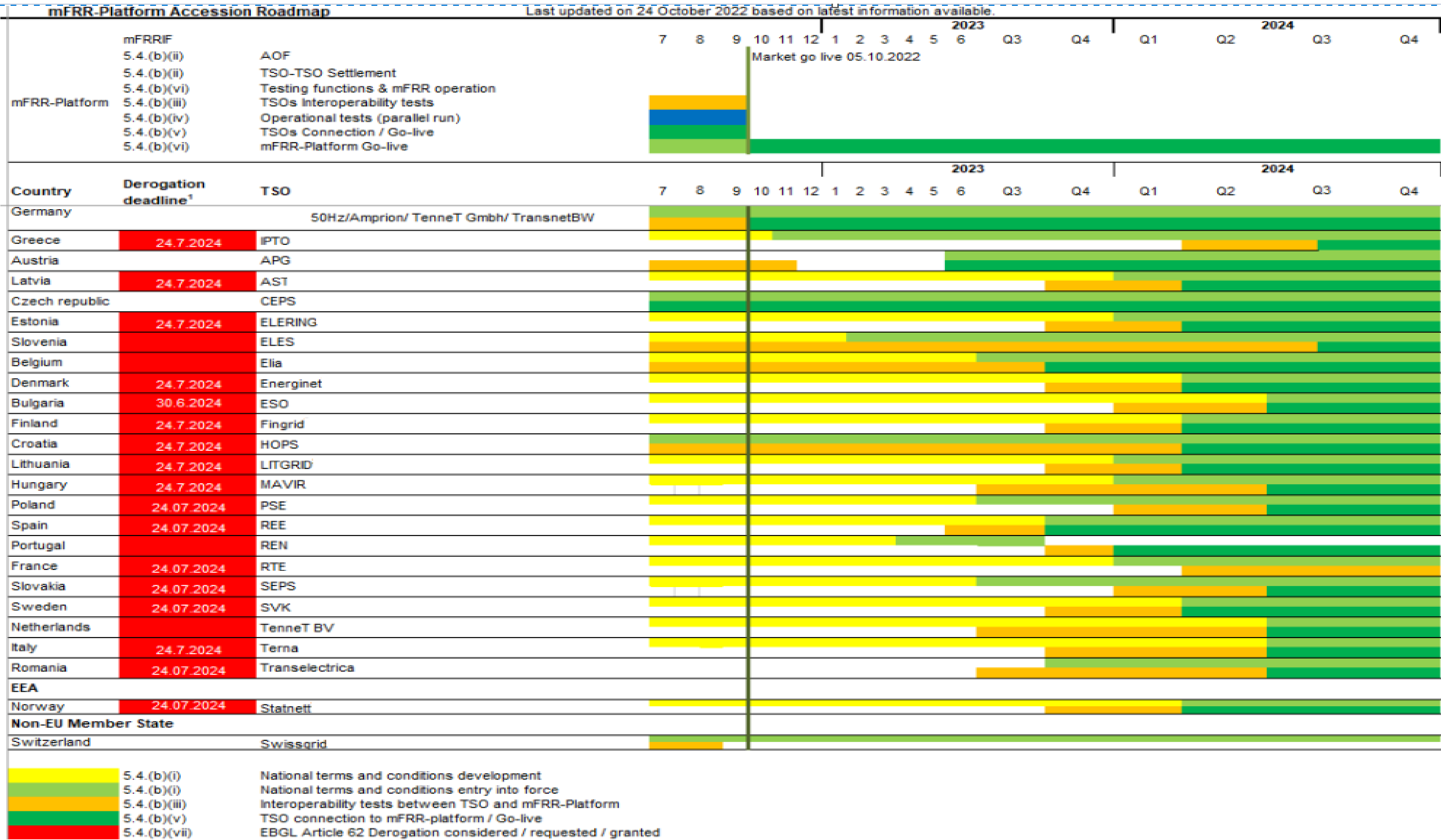
Accession Overview



- TSOs can request a derogation until two years after July 2022.
- **21** TSOs have applied for a derogation.
- Germany and Czech Republic connected to the MARI platform on October 5, 2022.
- In 2023 connection of 3 Member States to the MARI platform is foreseen.


































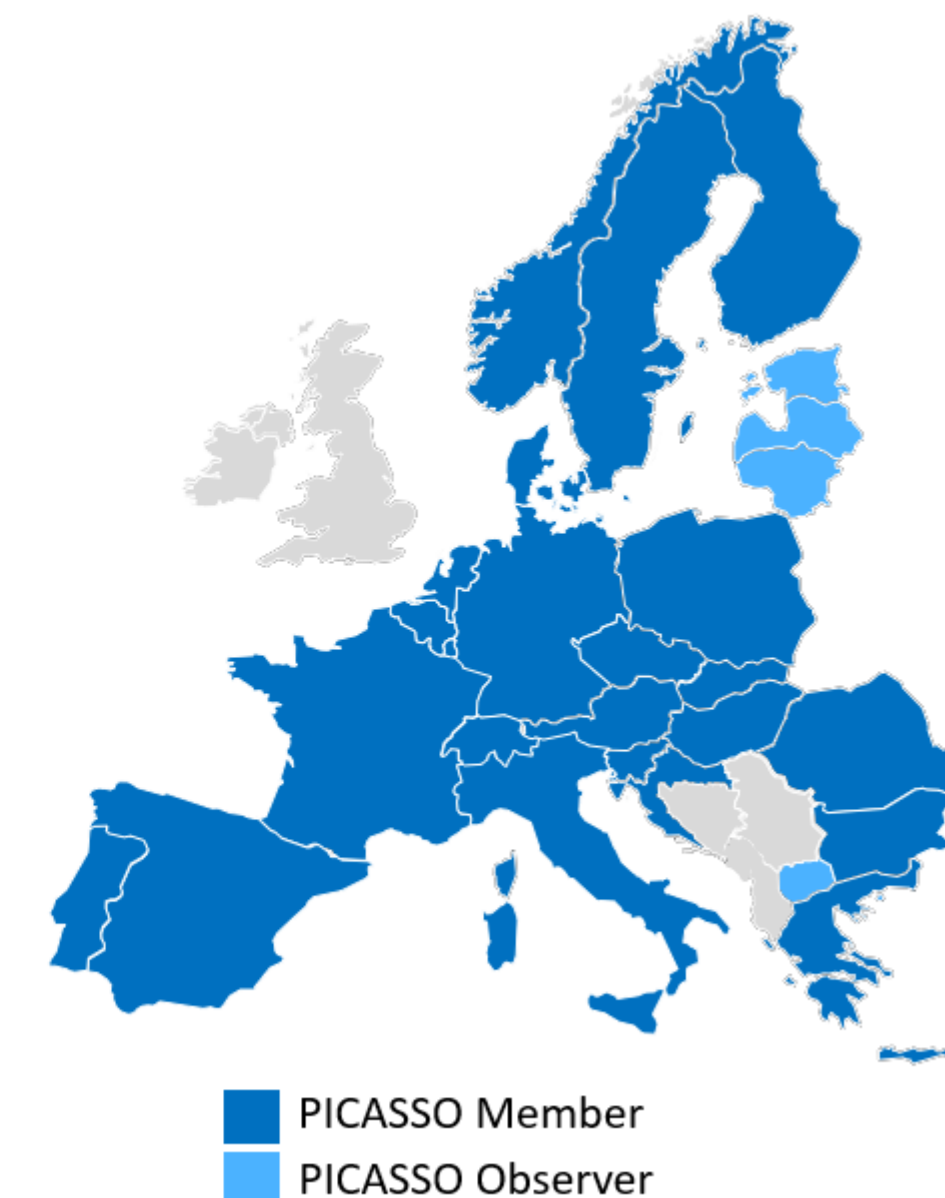
MARI Accession Roadmap



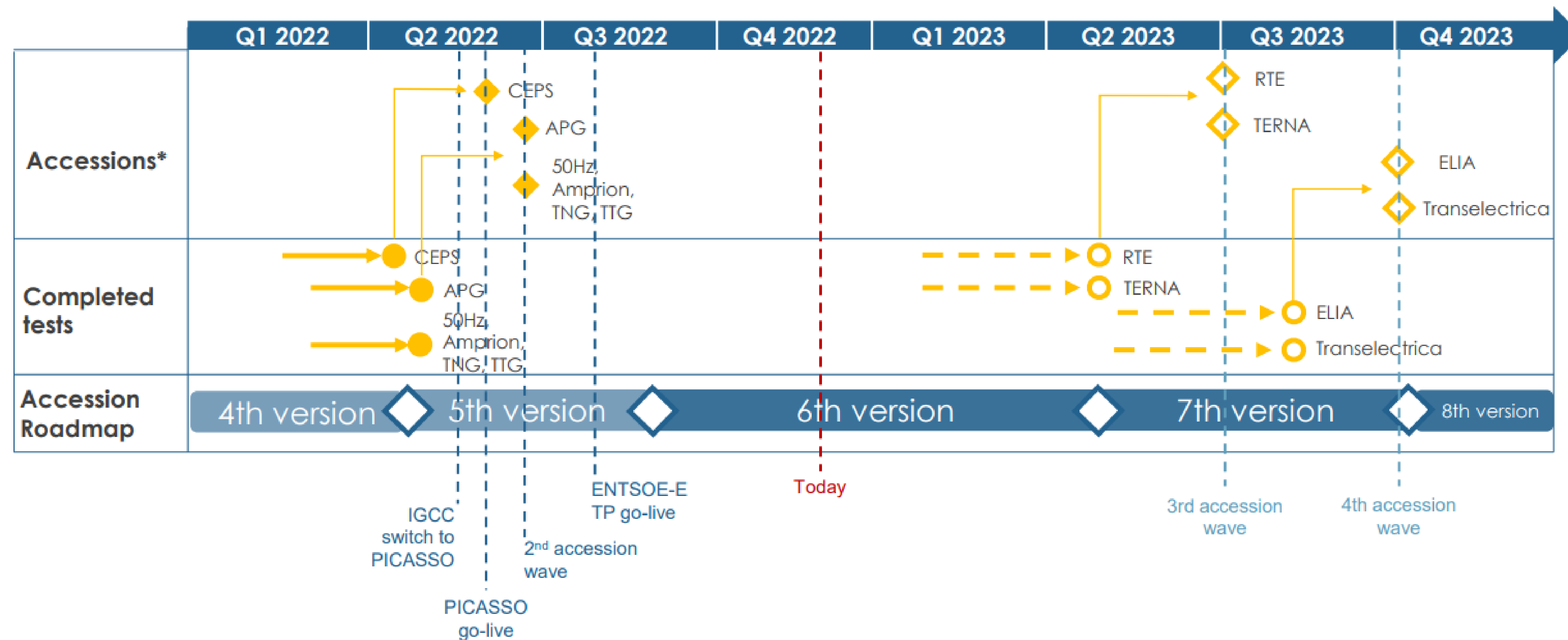
PICASSO Platform

- The **P**latform for the **I**nternational **C**oordination of **A**utomated Frequency Restoration and **S**table **S**ystem **O**peration (PICASSO) is the implementation project endorsed by all TSOs to establish the European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation (aFRR), pursuant to Article 21 of the EBGL.
- As of October 2022, **26** TSOs have been active members of the PICASSO project, while **4** additional TSOS +ENTSO-E have joined the project as observes.

| 30 TSOs + ENTSO-E (Observer) | | |
|---|---|---|
| PICASSO Members (26 TSOs) | | PICASSO Observers (4 TSOs + ENTSO-E) |
| Austria  | Hungary  | Latvia  |
| Belgium  | Italy  | Lithuania  |
| Croatia  | The Netherlands  | Estonia  |
| Czech Republic  | Norway  | North Macedonia  |
| Denmark  | Poland  | ENTSO-E  |
| Finland  | Portugal  | |
| France  | Romania  | |
| Germany     | Slovak Republic  | |
| | Slovenia  | |
| Sweden  | Spain  | |
| Bulgaria  | Greece  | |
| Switzerland  | Luxembourg  | |

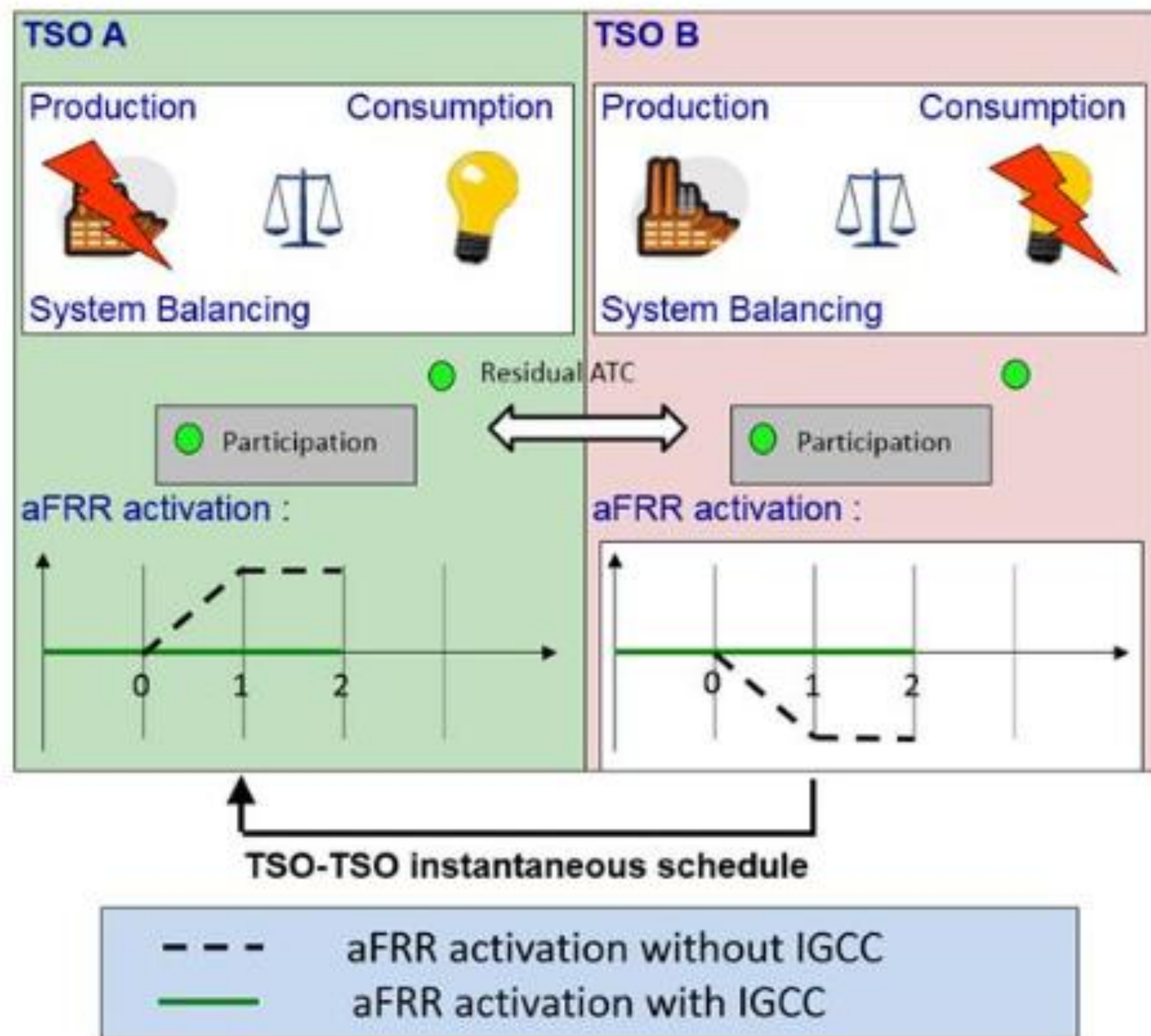


PICASSO Project Planning



**Progress as of December 2022*

Basic Principle of IGCC



IGCC performs imbalance netting of automatic frequency restoration reserves (aFRR)

Imbalance netting is the process that allows avoiding the simultaneous activation of frequency restoration reserves (FRR) in opposite directions between two or more LFC areas

IGCC takes into account the respective frequency restoration control errors as well as the activated FRR and corrects the input of the involved frequency restoration processes accordingly.

IGCC Platform

- The **International Grid Control Cooperation (IGCC)** is the European Platform for the imbalance netting process (IN-Platform) as defined by the guideline on electricity balancing (EB GL Art. 22).
- The establishment of a common European platform for operating the imbalance netting process has been officially achieved by the legal deadline of 24th June 2021, following the successful completion of all requirements as defined in the guideline on electricity balancing (EB Regulation Art. 22).

