



EXPLORE

Status Update

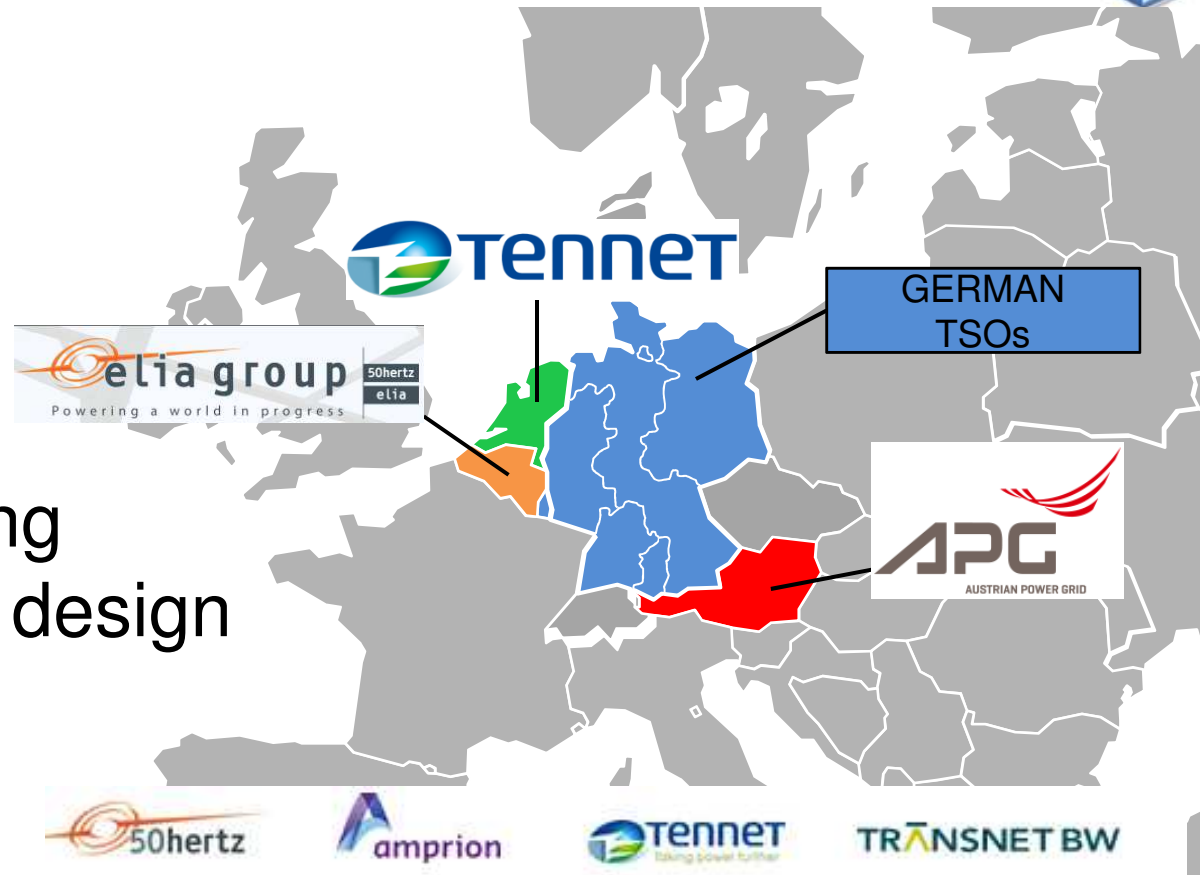
Balancing Stakeholder Group

14 January Brussels

Explore



European
X-border
Project for
Long term
Rreal-time balancing
Electricity market design



Background: Analysis common FRR market



1

Common qualitative FRR market comparison on subject of BE-NL-GE CoBa

- *Results of study published on TSOs website*

2

Austrian, German, Dutch and Belgian TSO decided to proceed with the analysis of a potential common FRR Balancing Market design

- *Work ongoing in newly set up Expert Group*

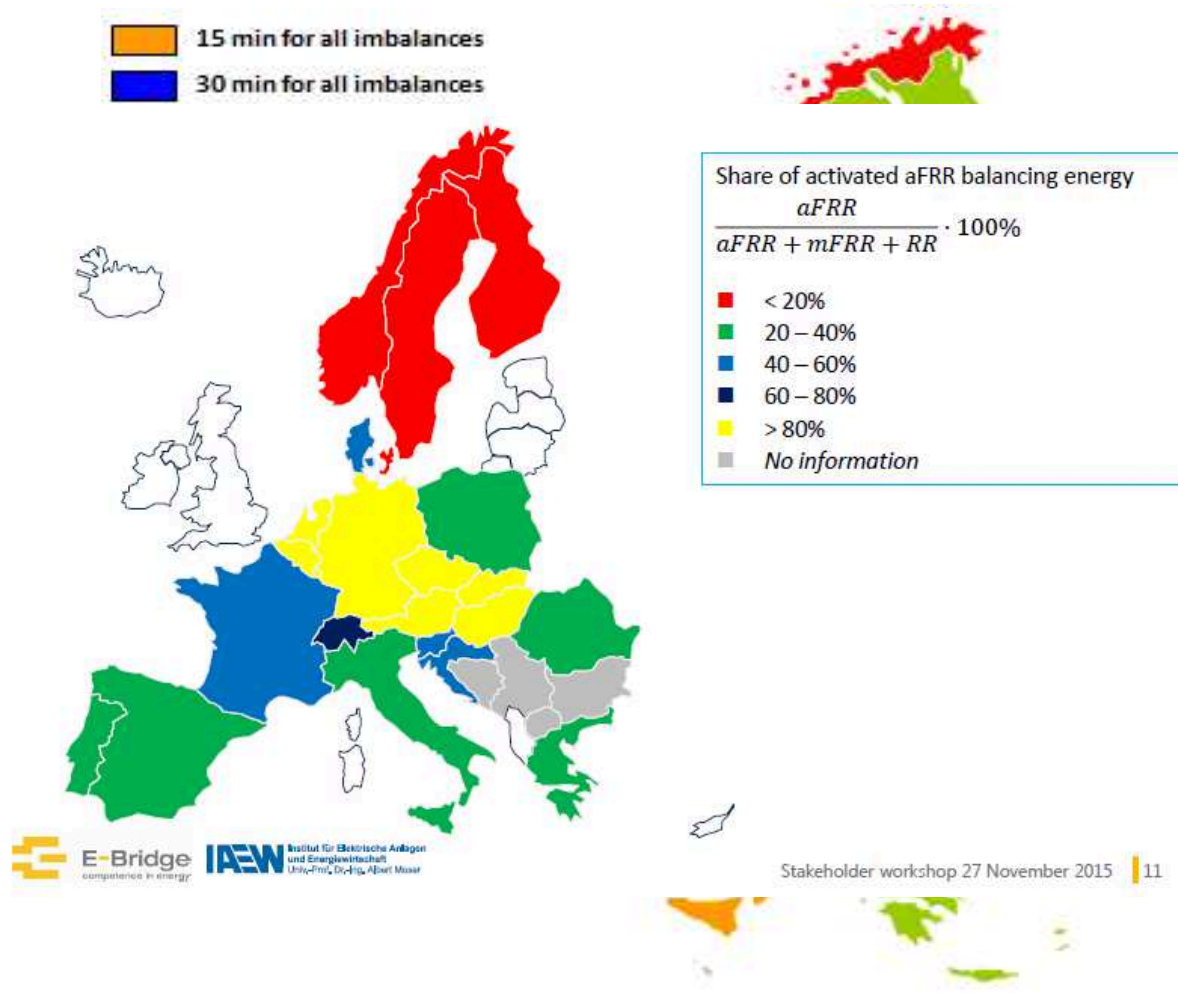
3

Technical and market aspects of such cooperation are studied:

- **the products, technical implementation and processes** (bidding, activation, selection, exchange) for the exchange of aFRR and mFRR;
- **interaction with intraday markets;**
- required **level of harmonisation;**
- proposed design for the **settlement of balancing energy and imbalance;**
- **use of cross zonal capacity after ID markets** for different balancing processes.

- ✓ EXPLORE contributes to early implementation of EB GL and CoBa formation
- ✓ CBA of BE-NL pilot project (phase 3) is temporarily put on hold given this development

BE-NL-DE-AT: natural partners for balancing



No use of replacement reserves:

- ✓ (Mostly) reactive balancing;
- ✓ EXPLORE TSOs rely on ID markets with short GCT

Harmonized ISP of 15 minutes:

- ✓ Important for settlement, pricing, product design,...;
- ✓ Important for balancing incentives.

No economic optimization between aFRR and mFRR:

- ✓ Similar activation strategies

Majority of the balancing performed by aFRR

- ✓ Similar activation strategies;
- ✓ Typical for reactive balancing systems.



Objective and starting assumptions

Objective EXPLORE:

- **Develop technical and market concepts for cross-border exchange of Frequency Restoration Reserve (aFRR & mFRR)**

Starting points:

- **No economic optimization between use of aFRR and mFRR balancing energy:**
 - Activation trigger based on technical considerations only (regardless of price);
- **Exchanged bids are firm;**
- **Reserve Replacement is out of scope** of present initiative:
 - No consideration of a (local) potential costs optimization between RR and mFRR;
- The **proposed market design shall respect** to the extent possible:
 - Requirements from the future NC or GL on **CACM, Electricity Balancing and LFC&R**;
 - **local TSOs responsibilities** linked to LFC&R Block and LFC&R Area.



Ongoing work in EXPLORE

Discussions on pricing and settlement fundamentals:

- ✓ Local or cross-border pricing;
- ✓ Per product or cross-product pricing;
- ✓ Pay-as-bid or pay-marginal;
- ✓ Function of imbalance pricing and desired balancing incentives;
- ✓ Balancing energy gate closure times;
- ✓ Relationship to intraday markets
- ✓ ...

→ Prior agreement on these fundamental topics is key for setting up any XB exchange

Detailed discussions on product design, activation algorithms, use of XZ transmission capacity,... will be tackled in a second stage (first half of 2016)



Thanks for your attention!