ELECTRICITY BALANCING GUIDELINE AND IMPLEMENTATION

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Energy Community

25 April 2017
1 Journey so far..

2 The Electricity Balancing Guideline

3 Implementation Organisation

4 Implementation
Journey so far..
Journey so far..

1. **ACER develops FW GL on Balancing**
   - **Sep-12**

2. **EC invites ENTSO-E to develop Network Code on Balancing (NC EB)**
   - **Dec-12**

3. **ENTSO-E develops NC EB**
   - **Dec-13**

4. **ACER reviews NC EB**
   - **Mar-14**

5. **ENTSO-E revises NC EB**
   - **Sep-14**

6. **ACER recommends NC EB to the EC**
   - **Jul-15**

**Preparation for committee (Electricity Cross-Border Committee, ECBC)**

**Commitology**

**Publication in the Official Journal of the EU**

**Member state implementation**

**Approval March - 17**

**Entry into force (EIF)**

**EIF+2(4) + 2yrs**
The Electricity Balancing Guideline
The EB GL

- **Title 1**
  - General Provisions

- **Title 2**
  - Elec. Balancing Market

- **Title 3**
  - Procurement

- **Title 4**
  - Cross Zonal Capacity

- **Title 5**
  - Settlement

- **Titles 6-10**
  - Various

**Scope**
- Applies in all system states
- Common principles for the procurement and the settlement of frequency containment reserves, frequency restoration reserves and replacement reserves and common methodology for the activation of frequency restoration reserves and replacement reserves

**Definitions**

**Consultation and regulatory approval requirements**

**Publication of information**
- Detailed requirements for publication of information related to balancing

**Delegation & Assignment**
- Delegation and assignment of TSO activities
- Settlement processes in several countries performed by a third party
The EB GL

- **Roles and responsibilities**
  - BSPs, BRPs, TSOs
  - Balancing energy prices not to be predetermined in contracts for capacity
- **Terms and conditions related to balancing**
- **Target articles**
  - Replacement Reserves / Imbalance Netting
  - Manual / Automatic Frequency Restoration Reserves
  - Implementation, governance and operation of European Platforms
- **Requirements for standard and specific products**
  - TSOs jointly design standard products for balancing energy and balancing capacity
  - Specific products used locally or converted
- **Balancing Energy Gate Closure**
  - Must be after 60mins and be harmonised for standard products
The EB GL

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- **Activation of balancing energy bids**
  - Activation for purposes other than balancing

- **Unavailable bids**
  - Requirements for unshared bids
  - Restricted bids allowed for internal congestion

- **Activation Optimisation Function**
  - Common Merit Order Lists
  - TSOs strive to balance system using CMOLs

- **Balancing Capacity**
  - Market based procurement
  - Exchanging balancing capacity in a TSO-TSO model
  - Transfer of balancing capacity between BSPs
  - TSO – BSP Model
- Use, calculation and pricing of cross zonal capacity
- Exchange of balancing capacity and sharing of reserves
  - Harmonised proposal for the allocation of cross zonal capacity
  - Allocation of cross zonal capacity for exchanging Frequency Containment Reserves
- Cooptimised Allocation Process
  - All TSO proposal
  - Actual market bids and actual balancing capacity bids
- Market-Based Allocation Process
  - Capacity Calculation Region Proposal
  - Forecasted market bids and actual balancing capacity bids
- Allocation Based on economic efficiency analysis
  - Bilateral basis for DC borders only
  - Forecasted market bids and forecasted balancing capacity bids
The EB GL

- **Settlement principles**
  - Prices reflecting the real time value of energy
  - Proposals for scarcity pricing
  - Marginal pricing for balancing energy
  - Negative prices allowed

- **TSO-TSO and TSO-BSP Settlement**

- **TSO-BRP Settlement** (i.e. Imbalance Settlement)
  - Harmonisation of main features
  - Imbalance adjustment required for every activation

- **Harmonisation of ISP**
  - Exemption possible on a SA level
Algorithm Principals

TSO reporting and monitoring

Cost Benefit Analysis

Derogations
- 2 year derogation can be requested from local NRA
- Can only be requested once
- Can be applied to:
  - Deadlines for joining EU platforms
  - Changing gate closure time for ISP process in Central Dispatch Systems
  - Changes associated with imbalance settlement (to avoid changing twice)

Transition Period
- 1 year transition period for articles without specific timescales
Implementation Organisation
Balancing Qualities

- Balancing qualities according to activation time (without imbalance netting)

Balancing is organized in up to five steps (FCR, IN, aFRR, mFRR and optional RR) in Europe

Platforms coordinating the (complex) processes of each balancing quality required
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**Key:**
- **Proposal:** The obligations that are under proposal stage.
- **Deadline:** The obligations that are due by a specific deadline.
- **Derogation:** The obligations that are allowed derogation for a specific period.
European Platforms

• European platform coordinates balancing energy activation requests of TSOs.

• As a TSO-TSO model is applied, activation requests and communication with national BSPs remains local.

• European platform comprises independent functions closely interacting with different (local) IT systems.

» Platform describes business processes on European level supported by different functions potentially performed by different IT systems.
ENTSO-E Project Teams and TSOs implementation projects

All TSOs via ENTSO-E Project Teams

- Implementation Frameworks for
  - Imbalance Netting
  - aFRR
  - mFRR
  - RR
- Settlement TSO TSO, TSO BSP, TSO BRP
- Cross Border Capacity Allocation
- Reporting
- Activation purposes
- CBA

EnC TSOs are invited to take active part in ENTSO-E project teams

TSOs implementation projects

Implementation Projects for
- Imbalance Netting - IGCC
- aFRR - ?
- mFRR - ?
- RR - TERRE
Imbalance Netting (i)

- GL EB requires a single Imbalance Netting (IN) in Central Europe.
- International Grid Control Cooperation (IGCC) has been formally identified as implementation project for IN.

» Different existing cooperations will merge in the future.
Current European aFRR initiatives include:

- aFRR cooperation DE/AT (in operation)
- Nordic
- EXPLORE study (report finalized, next steps discussed)

> Exact layout of EU target model depending on applicability of aFRR (UK, Baltics) and/or technical feasibility of cross-synchronous area exchange of aFRR (Nordics)

Discussions regarding aFRR implementation project ongoing
Exemplary Common Merit Order List (CMOL) for negative aFRR in DE and AT (calendar week 2 of 2017, “off-peak”, pay-as-bid pricing)

- CMOL extends merit order and avoids high balancing energy prices.
- Also smaller countries can have a positive impact.
Frequency Restauration Reserve with manual Activation (i)

- Various existing/discussed initiatives
  - mFRR cooperation DE/AT (under development, go-live in next months)
  - EXPLORE study (report finalized, next steps under development)
  - TERRE
  - NOIS
  - Amprion/RTE study
- Attempt of European TSOs to combine efforts on mFRR

» Discussions regarding mFRR implementation project ongoing
» Overall approach foreseen in PID seems to work as TSOs active in PT mFRR are not 100% identical to TSOs active in Mari project
» Official interaction between PT mFRR and MARI project can only start as soon as MARI project has applied to be the implementation project (IP) according to GL EB.
Replacement Reserve (i)

- Usage of Replacement Reserve (RR) is not compulsory for TSOs.
- Several TSOs performing RR started the project Trans-European Replacement Reserve Exchange (TERRE) before entry into force of GL EB.

  » European TSOs endorsed TERRE as implementation project for RR.
  » Balancing Responsible Parties from countries not performing RR can still offer this balancing quality (via the connecting TSO).
In order to ease the implementation of the TERRE platform, it has been agreed by TERRE Steering Committee to consider 2 different types of activities.

Centralized Platform Implementation
- Clearing Module
- ATC and CMOL data management
- Settlement Module

RR CoBA impl. (or equivalent)
- Harmonization of local features
- Discussions with the NRAs

TERRE GOVERNANCE – FORESEEN FOR BOTH ACTIVITIES

ENTSO-E (MC Balancing) TERRE Steering Committee Integration Group Stakeholder Meeting
- TSC: Monthly
- IG: Every 2 months (TSOs + NRAs)
- 2 or 3 a year

TERRE WORKING GROUPS
- Technical
- Legal & Governance
- IT

Legend
- Decision group
- External groups
- Expert groups
Coordination between different Gate Closure Times

- Gate Closure Times (GCTs) of short-term markets for scheduled energy and balancing energy have to be coordinated.

**Potential approach**

- GCTs aFRR and GCT mFRR after GCT RR
- Interrelation between GCT aFRR and GCT mFRR currently investigated by EXPLORE TSOs
- Local ID GCT seems not to be a backstop for GCT aFRR and GCT mFRR
- However, the frequency of changes in merit order (especially for aFRR) might be a backstop for GCT aFRR.
  » Further technical evaluation required.
• Existing FCR initiative started in 2011 as CH/DE project and has been extended continuously.
• Common demand of 855 MW (more than ¼ of entire European FCR demand)

Current FCR initiative

» Further extension within a synchronous area (using TRM) is possible.
Conclusion

• Platforms coordinating the (complex) processes of each balancing quality required
• Trade-off between full harmonization and early starting points for cooperation
• Current status on implementation project in Europe
  • Different existing IN cooperations will merge with IGCC in the future.
  • European TSOs endorsed TERRE as implementation project for RR.
  • Discussions regarding aFRR and mFRR implementation projects ongoing
  • Further extension of existing FCR cooperation within a synchronous area (using TRM) is possible.
• Upcoming challenges on aligning GCTs of short-term markets for scheduled energy and balancing energy

→ EnC TSOs are invited to take active part in ENTSO-E project teams