

Baltic Load-Frequency Concept and future balancing reserve markets

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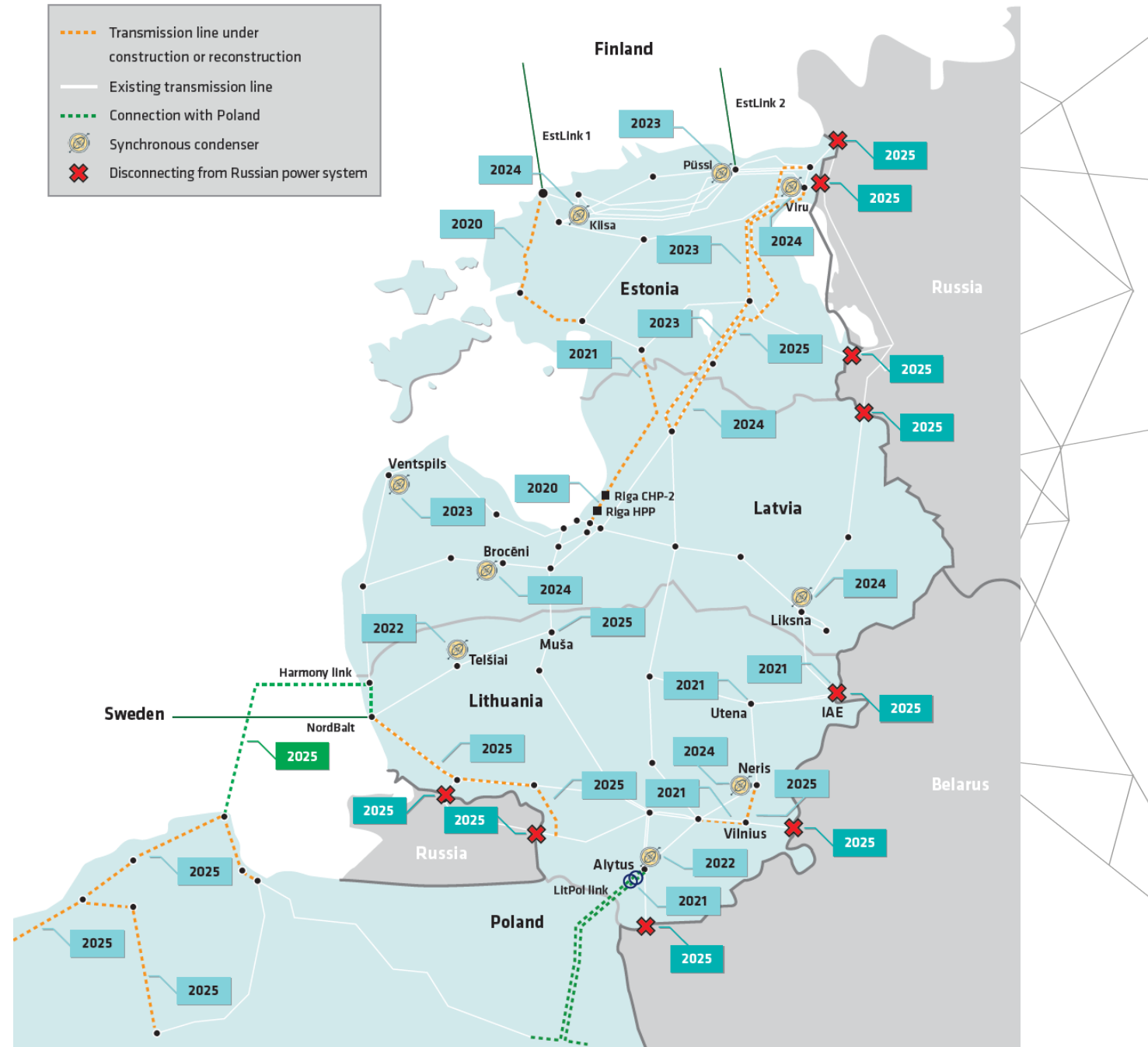
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Baltic synchronization with CESA

- Baltic power system is currently synchronized to the BRELL loop network.
- Baltic TSOs plan to synchronize with Continental Europe Synchronous Area at the beginning of 2026.

To achieve synchronisation with CESA:

- Additional infrastructure investments are in progress:
 - Synchronous condensers
 - Renovation of AC transmission lines
 - AC connection with Poland
 - New HVDC connection with Poland
- Need to fulfil CE SAFA Policies and SO GL requirements.

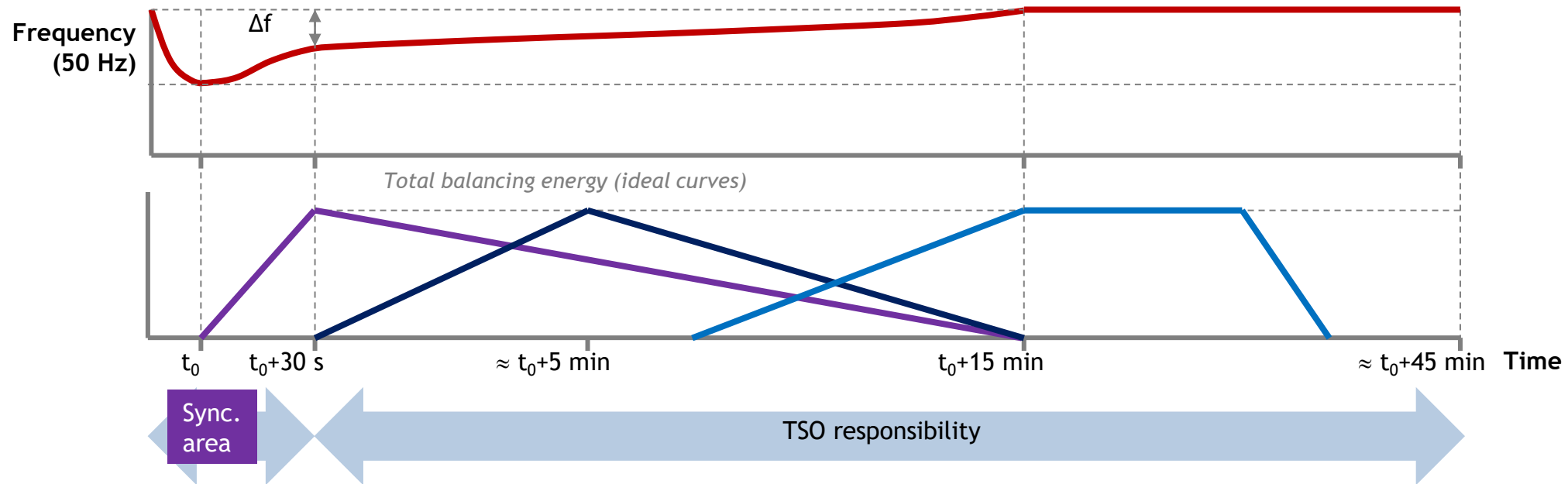


Baltic LFC block creation

- Baltic TSOs envision to create a common LFC block with 3 LFC areas.
- Common Baltic LFC block shall allow to:
 - Harmonise LFC related processes;
 - Dimension FRR for the whole Baltics;
 - Create common balancing capacity market with common procurement process.
- Baltic TSOs plan to finalise the Baltic LFC block operational agreement by the end of 2024.
- More details on planned Baltic LFC block and LFC system are described in the Baltic LFC concept document - [link](#) .

Baltic LFC reserve types

FCR	aFRR (+IN)	mFRR
<ul style="list-style-type: none">• Automatic activation• Activation in 30 s	<ul style="list-style-type: none">• Automatic activation• Activation in 30 s up to 5 minutes	<ul style="list-style-type: none">• Scheduled or direct activation• Activation up to 12,5 minutes



Baltic FCR capacities

- Following reserve capacities are dimensioned for the synchronous operation with CESA.
- Each Baltic TSO shall follow CESA FCR dimensioning principles.
- Current estimation is that each TSO shall need to procure the following capacities of FCR as symmetrical products:

	Estonia	Latvia	Lithuania	Total Baltic LFC block
FCR volume MW (upward and downward)	8	8	9	25

Baltic aFRR and mFRR capacities [1]

- Baltic TSOs use probabilistic estimation and reference incidents size to estimate the total need for FRR capacity.
- The aFRR capacity is estimated based on 1 minute historic open loop area control error data and mFRR covers the rest of FRR.
- The total aFRR and mFRR capacity obligation is shared between all TSOs based on sharing keys derived from reference incident size and historic imbalances.
- Shared obligation represents the minimum capacity TSO needs to procure to balance the Baltic LFC block imbalances (full access of the CZC is expected).

Baltic aFRR and mFRR capacities [2]

- Based on the estimations for 2025 the Baltic FRR dimensioned capacities are following:

Area	Upward mFRR, MW	Downward mFRR, MW	Upward aFRR, MW	Downward aFRR, MW
EE LFC Area	209	257	40	40
LV LFC Area	145	37	30	30
LT LFC Area	226	276	60	60
Baltic LFC block	580	570	130	130

Baltic LFC reserve capacity markets

- Each TSO shall be responsible to procure the distributed share of FRR and procured FRR of the Baltic LFC block will be shared and exchanged among Baltic TSOs to ensure availability of reserves to cover the balancing need of each LFC area.
- To ensure access to shared and exchanged reserve capacities in Baltics the CZC for balancing reserves must be allocated.
- Market-based approach is planned for the CZC allocation to optimize the usage of CZC for both DA and balancing reserve markets.
- Baltic TSOs have agreed to work towards establishment of common Baltic LFC reserve capacity markets to improve the efficiency and cost of reserve procurement.

Baltic reserve capacities prequalification process

- Baltic TSOs plan to harmonise the prequalification process in the Baltics to ensure level playing field for the Baltic capacity market participants.
- In order to have FCR, aFRR and mFRR capacities available in 2025/2026, the Baltic TSOs start the prequalification process of possible Reserve Providing Units latest 2022 Q2.

Baltic LFC reserve energy markets

- Baltic TSOs foresee to join and implement European balancing energy platforms:
 - MARI platform 2023-2024
 - PICASSO platform 2024
- Progress of energy markets are supported by implementing in the Baltics:
 - 15 minute market time unit (MTU)- 2023
 - 15 minute imbalance settlement period (ISP) - 2023/2024 data exchange and 01.01.2025 full extent

Baltic LFC reserve capacity „as-is“ market situation

- Baltic TSOs conduct a LFC reserve market study to estimate the availability of reserve capacity in the region.
- Initial version of the study is available on Elering website - [link](#) and shows:
 - Single LFC areas are unable to fulfil capacity needs.
 - To fulfil Baltic LFC block LFC reserve needs, co-operation of Baltic LFC area resources is needed.
 - Opening of new markets generates new opportunities for market participants

Baltic LFC block reserve exchange and sharing

- As Baltic LFC block and LFC reserve capacity markets are still in development the first priority for the Baltic TSOs is to establish exchange and sharing principles between Baltic LFC areas.
- Nonetheless, Baltic TSOs look towards possible sharing and exchange agreements with neighbouring LFC blocks to achieve more liquid market.

Questions?

Thank you
for listening!