FINGRID

Imbalance pricing in Finland

The imbalance pricing was changed on June 12, 2024, when the automatic Frequency Restoration Reserve (aFRR) energy market was implemented in Finnish balancing energy market. The imbalance price will now take into account both aFRR and manual Frequency Restoration Reserve (mFRR) components, in accordance with the energy balancing guidelines. The dominating direction and the value of avoided activation will remain unchanged until the common Nordic connection to the European aFRR energy market place PICASSO.

The imbalance price is determined by the maximum of mFRR marginal price and volume-weighted aFRR price (VWA$_{aFRR}$) when the dominating direction is upward. Similarly, the minimum of these components determines the imbalance price when the dominating direction is downward.

$$Max(VWA_{aFRR,\ up},\ mFRR_{up})$$

$$Min(VWA_{aFRR,\ down},\ mFRR_{down})$$

The volume-weighted average price of aFRR energy for the hour, and in the future for the fifteen minutes, determines the imbalance price, when aFRR activations have been more expensive/cheaper and in the same direction as mFRR energy activations in the uncongested area.

The result will be rounded to two decimal (0,01 EUR/MWh).

Dominating direction and value of avoided activation

The dominating direction remains unchanged and is based only on mFRR activations. If there is no dominating mFRR direction in the market time unit, the imbalance price will be based on the Day-ahead price, even if aFRR activations have been made during that time period.

If Finland's aFRR balancing demand has been fulfilled in PICASSO platform with netting and the aFRR price for requested direction will not be formed, the Day-ahead price -based value of avoided activation will be used for these 4s market time units. When calculating the volume-weighted average aFRR price, the Day-ahead price is taken as the reference price for these time periods, and the volume is Finland's aFRR balancing demand.

Volume weighted aFRR

The volume-weighted average of the aFRR energy marginal prices aims to decrease the impact of short term price spikes. In the volume weighting, each 4s aFRR marginal price in the dominating direction is weighted by the volume of the fulfilled balancing demand in this 4s market time unit.

The volume used in the calculation is the instantaneous aFRR activation need of the Finnish bidding zone, which can be fulfilled on the PICASSO platform, i.e. the fulfilled balancing demand. Therefore, the aFRR volume activated from the Finnish bidding zone to the needs of other countries on the PICASSO trading platform is not included in the volume weighting, and the aFRR activated from other countries to the Finnish needs is included in the volume weighting.

$$VWA_{aFRR} = \frac{\sum(marginalprice_{4s} \times aFRR\ volume_{4s})}{\sum(aFRR\ volume_{4s})}$$

The volume-weighted average of the aFRR energy price is calculated for both up and down regulation. If there is no activation demand in that direction for the time period, the volume-weighted average does

not considered these activation periods when calculating the imbalance price. The volume-weighted aFRR is taken into a account in the imbalance price only in the dominant direction, the activation demand for the opposite direction is ignored.

Publication

The imbalance price is published with a small delay on Fingrid's website, Open Data portal and ENTSO-E's transparency platform. The publication delay will be reduced in the future as much as possible.

Schedule

The imbalance price is the same for every quarter of an hour in the hour until the 15- minute mFRR and ID markets. The selected pricing model may be updated as other Nordic countries implement the aFRR energy market. PICASSO Finland means Fingrid's national connection to the PICASSO trading platform, mFRR EAM the joint Nordic 15 min automatic mFRR energy market.