

Rules on balancing

The rules on balancing have been drawn up on the basis of subsection 39 (1) 3¹) of the Electricity Market Act (EIMA) and provide, among other things, principles for regulating the system within the hour.

1. Terms.....	1
2. Main principles of balancing.....	2
3. Balancing reserves and their use for balancing.....	3
4. Requirements for balancing bids.....	3
5. Emergency reserves and their use in balancing.....	6
6. Cross-border reserve power activation.....	7
7. Paying for capacity of reserves and for energy used for balancing.....	7
8. Imbalance price calculation method.....	8
9. Settlement of balancing bids.....	8

1. Terms

- **Aggregator** – the legal entity that organises making balancing bids to the transmission system operator (TSO) through either aggregation of consumption or production capacity;
- **Down-regulation** – selling an additional amount of electrical energy by the TSO, due to either lower energy consumption or greater energy production in the system than forecasted, the need for countertrading or when the security of the power system’s supply is endangered;
- **Fast Disturbance or Emergency Reserve** – the capacity reserve held or pre-ordered by the TSO to manage emergencies that may occur in the power system;
- **Balance Responsible Party** – the legal entity that has entered into a balance agreement with the TSO in order to maintain its balancing portfolio pursuant to the procedure provided by the EIMA (Electricity Market Act) and the legislation established on the basis thereof;
- **Imbalance** – the imbalance energy that the TSO buys and sells based on a balance agreement entered into with a balance responsible party for the purposes of maintaining balance;
- **Balancing** – all actions or processes, on all timelines, through which the TSO ensures, in a continuous way, the maintenance of the power system frequency within a predefined stability range;

- **Operational Hour** – the real-time hour during which the TSO manages the system. The hour starts and ends on the full hour;
- **Balancing Energy** – the balancing reserve or emergency reserve bidding energy activated by the TSO to ensure balance. The TSO uses it to increase or decrease production and consumption in accordance with law and the legislation established on the basis thereof, and agreements entered into by the TSO;
- **Balancing Bid** – a balancing energy bid that is submitted to the TSO by the balancing service provider and meets the requirements established by the TSO;
- **Imbalance Adjustment** – the amount of the balancing energy that the TSO has activated in the balancing area of the balance responsible party and which is recognised in the balance report of the balance responsible party in terms of imbalance settlement periods, taking into account the direction of the balancing energy;
- **Balancing Service Provider** – the producer, consumer, balance responsible party or aggregator who provides balancing service to the TSO;
- **Imbalance Settlement Period** – a full hour, i.e. one (1) hour in respect of which imbalance has been calculated according to the time zone of submission of the balance settlement.
- **Countertrading** – the exchange of electrical energy between different market areas, which is initiated by one or more TSOs in order to bring the physical parameters of the power system (for example cross-border power flows) within the permitted range and ensure the electrical energy trading transactions that have already taken place;
- **Common Merit Order List (CMOL)** – a list of balancing energy bids sorted by product and in order of their bid prices, used for the activation of the bids set out in the list;
- **Up-regulation** – buying an additional amount of energy by the TSO, due to either higher energy consumption or smaller energy production in the system than forecasted, unexpected tripping of production capacity, the need for countertrading or when the security of the power system's supply is endangered.

2. Main principles of balancing

The Estonian power system belongs to the same synchronous area as the power systems of Belarus, Russia, Latvia and Lithuania (united system). The Russian TSO ensures automatic frequency regulation for the Estonian power system under normal conditions. Should the Estonian power system become isolated from the other power systems, the automatic frequency regulation will be ensured by the Estonian TSO. In order to organise synchronous operation in the united system, including to ensure that the frequency remains within the requested range, a common cooperation organisation of TSOs of Belarus, Russia, Estonia, Latvia and Lithuania (BRELL) has been established.

The balance of the Estonian power system is ensured through coordination with the control centres of other TSOs that belong to the BRELL cooperation organisation and also with the control centre of the Finnish TSO due to operation of direct current (HVDC) interconnectors between Estonia and Finland.

Elering, the Estonian TSO, activates balancing reserves and emergency reserves in real time to balance the Estonian power system balance. Such reserves are manually activated frequency restoration reserves. To ensure normal operation of the power system, Elering does not buy or activate any other types of reserves, such as for example automatically activated frequency

containment reserve, automatically activated frequency restoration reserve or replacement reserve.

As of 1 January 2018, the common Baltic balancing market was launched and, in connection with the foregoing, coordinated balance control is implemented in the power systems of Estonia, Latvia and Lithuania. Estonia, Latvia and Lithuania are regarded as a single coordinated balancing area (CoBA), with one Baltic TSO being responsible for balancing the Baltic total balance as a whole. To minimise the Baltic total alternating current (AC) balance area control error (ACE), balancing energy bids are activated in the necessary amounts from the CMOL. Coordinated balance control must ensure that the Baltic total ACE by the end of an operational hour is as close to zero as possible.

3. Balancing reserves and their use for balancing

Balancing reserves are used to balance inaccuracies in the balance responsible parties' consumption or production forecasts, in the case of unexpected tripping of production capacity or electrical equipment that influences cross-border transmission capacity or when the security of the power system's supply is endangered.

All balancing bids are compiled into a CMOL by Baltic TSOs. Each market participant can submit balancing bids to its connecting TSO, which in turn then submits the bids to the Baltic CMOL. Balancing bids can be submitted for both up-regulation and for down-regulation. In addition, Elering mediates the balancing bids in the Baltic CMOL to the Finnish TSO and the Finnish TSO mediates the balancing bids received from its control area to Baltic TSOs through Elering. In the same way the Swedish TSO mediates the balancing bids received from its control area to Baltic TSOs through Litgrid.

Submission of balancing bids is voluntary for market participants. A prerequisite for the submission of bids by Estonian market participants is entry into a bilateral agreement with Elering, which sets out the procedure and requirements for bidding.

Market participants may submit balancing bids or amend the bids already submitted up to 45 minutes before the operational hour begins. It must be possible to activate balancing bids in full within 15 minutes from when the order to activate has been given and its uninterrupted full capacity realisation must be guaranteed until the operational hour ends.

4. Requirements for balancing bids

Balancing bids submitted to Elering by Estonian market participants must meet the requirements described in the table below (updated in accordance with Decision N. 7-26/2019-008 of the Estonian Competition Authority (21 May 2019), which approved the 'Standard Terms and Conditions for the Provision of Electrical Energy Balancing Service' of Elering AS). The standard product set out below applies to all Baltic market participants. The TSO gives the balancing service provider an advance notice of any amendments to the standard product requirements at least three (3) months before the amendments are applied and publishes the new standard product requirements on the TSO's website.

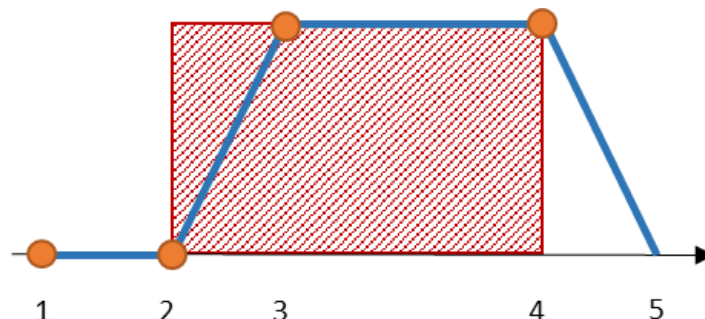
The standard product bid on the balancing market, i.e. the manually activated frequency restoration reserve (mFRR), must meet the following requirements:

Parameter	Requirement
Preparation Period	The period agreed during the phone call or the period of time between the receipt of an electronic message and the activation as noted in the message.
Ramping Period	Not more than 15 min
Full Activation Time	Not more than 15 min
Minimum and maximum quantity	MIN = 1 MW; MAX = no restrictions
Deactivation Period	Not more than 15 min
Pricing Method	Marginal price or at least the price of the bid depending on the purpose of the balancing energy
Minimum and maximum price	MIN = no restrictions; MAX = 5,000 EUR/MWh
Divisibility	To be defined by the balancing service provider (the bid sets out whether the bid can be activated in part)
Minimum and maximum duration of Delivery Period	MIN = 1 min; MAX = 60 min (but no longer than from the time of activation to the end of the trading period)
Validity Period	60 min

Mode of Activation	Manual
Minimum duration between the end of Deactivation Period and the following activation	Not determined
Settlement volume determination: Required start of delivery end time of the order	Block product of between required start of delivery and end time of order
Gate closure of the offers	H-45 min (45 min before the start of the trading period)
Firmness of the offers	All received offers are firm (fixed) as for their price and quantity. A market participant may amend and cancel the offer only due to technical reasons, informing the TSO thereof immediately, including such a notice must be submitted before the TSO has ordered the bid for activation.

Settlement of Baltic mFRR standard product is illustrated in Figure 1, where: 1 – time of the phone call (activation request); 2 – start time of the order; 3 – time of full activation; 4 – end time of the order; Period 1-2 is Preparation Period; Period 2-3 is Ramping Period; Period 2-4 is Settlement Period; Period 4-5 is Deactivation Period.

Figure 1: Settlement product for Baltic mFRR market:



In addition to the requirements set out in the table, balancing service providers must also take into account the following requirements:

- all balancing bids must be sent to Elering's respective IT-system;

Approved by Decision No. of Estonian Competition Authority

- Elering must have the possibility to identify balancing reserve activation through its SCADA system.

More precise requirements and procedures for submitting balancing bids are set out in the Standard Terms and Conditions for the Provision of Electrical Energy Balancing Service.

5. Emergency reserves and their use in balancing

Emergency reserves are used in the case of unexpected tripping of production capacity or electrical equipment that influences cross-border transmission capacity or when the security of the power system's supply is endangered. Emergency reserves are not used to balance inaccuracies in the balance responsible parties' consumption or production forecasts, except in the cases where there are no bids on the balancing market or if all the bids have already been activated.

In accordance with the 'Agreement on Holding and Using Emergency Reserves in BRELL Power Circle', all parties to the BRELL agreement ensure the availability of at least 100 MW of emergency reserve. These emergency reserves may only be used in the case of BRELL power systems' operational events.

All parties to the BRELL agreement have assumed the responsibility to mutually enable the use of 100 MW of emergency reserves to one another. In total, this agreement gives Elering access to additional cross-border emergency reserves of up to 400 MW.

It must be possible to activate the emergency reserves retained for BRELL in full capacity within 20 minutes starting from the activation order, and their uninterrupted full capacity realisation must be guaranteed for at least 12 continuous hours. If necessary and technically possible, TSOs may mutually agree to extend the realisation time of emergency reserves for a period longer than 12 hours.

In order to enable maximum import from HVDC interconnectors EstLink 1 and EstLink 2 (in order to be ready for the tripping of Estlink 2 in a situation where the import of electrical energy from Finland to Estonia is in full capacity), Elering has to ensure, in accordance with that provided by the respective BRELL agreement, the availability of additional 150 MW (all in all 250 MW) of emergency reserves. Elering holds emergency reserves in its own emergency reserve power stations – Kiisa AREJ 1 (110 MW) and Kiisa AREJ 2 (140 MW).

In addition to the foregoing, Elering also takes into account the following circumstances when it activates Kiisa emergency reserve power stations for balancing purposes:

- Kiisa emergency reserve power stations as the power stations in the ownership of the TSO are also activated in the list of emergency reserves according to the price;
- the energy price of Kiisa emergency reserve power stations as power stations outside the balancing market must give a clear signal that it concerns activation of out-of-market reserves;
- as of 1 July 2020, the energy price established for Kiisa emergency reserve power stations upon activation thereof for balancing purposes will be the maximum permitted price on the Baltic balancing market, i.e. 5,000 EUR/MWh.

6. Cross-border reserve power activation

For the reserve power located in Estonia, an activation order for the necessary amount of balancing reserves is given by Elering's control centre to a person appointed by the balancing service provider. An order to activate Kiisa emergency reserve power stations is given through the Elering's SCADA system.

For the reserve power located outside of Estonia, a cross-border activation order is given to the neighbouring power system TSO's control centre dispatcher, who arranges reserve power activation in its area of responsibility. The reserve power located in Estonia is activated for a neighbouring TSO only through the Elering's control centre.

When activating cross-border reserve powers, the following circumstances must be taken into account:

- When activating reserve powers, less expensive bids must be preferred whenever it is technically feasible.
- Cross-border reserve power activation can only happen if there is available cross-border transmission capacity after the day-ahead and intraday market, except in the case of countertrading.

Elering carries out cross-border countertrading mainly in relation with the following needs:

- to bring active power flows of alternating current cross-border lines or lines inside the power system within the permitted range;
- to compensate for active power deficiencies or surpluses arisen as a result of the failure or tripping of HVDC interconnectors.

Countertrading does not influence cross-border electrical energy trades that were carried out according to the distribution mechanism agreed between market participants. All cross-border electrical energy trades made for operational hour are guaranteed by the TSOs. Countertrading is carried out only during operational hours. Countertrading is not carried out preventively.

To carry out countertrading, generation is increased in the area where the active power flow enters (entered) and is reduced in the area where the active power flow exits (exited). The increased and reduced generation has to be within the same range to ensure that the power balances of the power systems remain in balance.

7. Paying for capacity of reserves and for energy used for balancing

• Balancing reserves

Elering does not pre-order balancing reserves, i.e. market participants are not paid for making bids on balancing reserves. When activating up-regulation reserve, Elering pays market participants for the energy produced (or consumption reduced) and, when activating down-regulation reserve, market participants pay Elering accordingly for reducing their production (or increasing consumption). The energy price will be established according to the bid made and the valid pricing method. Information about the balancing bid amounts and the energy prices produced upon activation is exchanged by TSOs among themselves and by Elering with Estonian market participants in accordance with respective contracts.

• Emergency reserves

Elering does not procure emergency reserve from market participants or other power system's TSOs. The emergency reserve necessary for Elering is held in its entirety in Kiisa emergency reserve power stations.

When activating the emergency reserve of another party to the BRELL agreement, the initiator of the power reserve activation must compensate only for the price of the energy produced. The energy price will be established according to the bid made and the valid pricing method. The cost of guaranteeing emergency reserve will be covered in full by the party who ordered that the emergency reserve be retained. Information about the emergency reserve amounts and the energy prices produced upon activation is exchanged by the parties to the BRELL agreement in accordance with respective bilateral contracts.

8. Imbalance price calculation method

The purchase and sale of imbalance energy and payment therefor is organised under the terms and conditions and pursuant to the procedure provided by legislation and the standard terms and conditions of the balance agreement. The TSO publishes the imbalance price calculation method on its website and ensures the disclosure of the data.

9. Settlement of balancing bids

Settlement of balancing bids is carried out according to the following principles:

- The TSO calculates and settles the balancing energy volume with the balancing service provider according to the activated balancing bid.
- The start time of the activated balancing bid is the time stated by the TSO in the activation order of the balancing bid and the ordered capacity is maintained until the end of the hour.
- Every balancing service provider must have one balance responsible party whose balance report sets out the balancing bid.
- The activated balancing energy volume is recognised as an imbalance adjustment by the TSO in the balance report of the balance responsible party in terms of imbalance settlement periods, taking into account the direction of the balancing energy.
- The accounting period serving as a basis for the financial settlements related to the balance is a calendar month.
- Balancing energy volumes are calculated for every imbalance settlement period to an accuracy of 1 kWh.