

# Baltic CoBA

# Imbalance settlement

# rules

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30<sup>th</sup> November, 2017

Elering AS  
AS “Augstsprieguma tīkls”  
LITGRID AB

## I Objective and scope

1. The Baltic transmission system operators– Elering AS, AS “Augstsprieguma tīkls”, LITGRID AB (further in text all together – Baltic TSOs) apply harmonized imbalance settlement rules for their respective imbalance areas.
2. Baltic TSOs have agreed to harmonized imbalance settlement framework that complies with the following principles:
  - 2.1. TSOs shall not incur neither economic gains nor losses with regards to the financial outcome of the imbalance settlement;
  - 2.2. imbalance price fully reflects costs and income from balancing services;
  - 2.3. imbalance price does not include costs for imbalance settlement administration.
3. All definitions and abbreviations used in this document must be applied and used as defined in Annex 1 of Baltic TSOs’ Agreement on the operation and settlement of the Baltic coordinated balancing area. Annex 1 is publicly available.

## II Imbalance settlement framework

4. Baltic TSOs shall apply the same settlement mechanism for calculating: position and allocated volume; imbalance adjustments; imbalance and imbalance price.
5. Each Baltic TSO within its imbalance area shall calculate position, allocated volume, imbalance adjustment, imbalance:
  - 5.1. for each balance responsible party (BRP);
  - 5.2. for each imbalance settlement period (ISP).
6. The Baltic TSOs shall apply the single settlement (portfolio) model, where for the purpose of imbalance settlement calculations production and consumption are aggregated within the same portfolio.
7. The Baltic TSOs shall apply the single pricing model, where single price is applied for all imbalances (for shortage and surplus direction) for each imbalance price area within imbalance settlement period.
8. Each Baltic TSO may develop and apply separate settlement mechanism and administrative processes for:
  - 8.1. imbalance administration cost allocation;
  - 8.2. collateral calculations;
  - 8.3. information exchange regarding imbalance settlement calculations.

## III Imbalance settlement calculations

9. Each Baltic TSO within Baltic CoBA shall perform imbalance settlement within its imbalance area and shall determine the imbalance payment amount for BRP in accordance to the rules set out in this section.
10. Imbalance payment amount ( $C_{ip}$ ) for a single accounting period shall be calculated as follows:

$$C_{ip} = \sum_{t=1}^T C_{imb_t} - C_a, \text{ whereas}$$

- |             |  |
|-------------|--|
| $C_{ip}$    | – imbalance payment for accounting period (EUR). BRP pays to TSO, if $C_{ip}$ is negative, TSO pays to BRP, if $C_{ip}$ is positive; |
| $t$         | – imbalance settlement period (ISP <sub>t</sub> );   |
| $T$         | – number of imbalance periods within a single accounting period;   |
| $C_{imb_t}$ | – imbalance cost for ISP <sub>t</sub> (EUR);   |
| $C_a$       | – imbalance administrative payment for a single accounting period (EUR).   |

11. Imbalance cost ( $C_{imb_t}$ ) for  $ISP_t$  shall be calculated as follows:

$$C_{imb_t} = E_{imb_t} \times P_{imb_t}, \text{ whereas}$$

- $E_{imb_t}$  – BRP's imbalance in  $ISP_t$  (MWh);
- $P_{imb_t}$  – imbalance price for imbalance area in  $ISP_t$  (EUR/MWh).

12. BRP's imbalance,  $E_{imb_t}$ , shall indicate the size and the direction of the settlement transaction between the BRP and the TSO; an imbalance can have alternatively:

- 12.1. a negative sign indicates BRP's energy shortage and BRP shall procure shortage energy from the TSO at the imbalance price;
- 12.2. a positive sign, indicates BRP's surplus and BRP shall sell the energy surplus to TSO at the imbalance price.

13. Each BRP's respective imbalance ( $E_{imb_t}$ ) in  $ISP_t$  shall be calculated as follows:

$$E_{imb_t} = E_{alc_t} - E_{fp_t}, \text{ whereas}$$

- $E_{alc_t}$  – allocated volume for BRP in  $ISP_t$ .  $E_{alc_t}$  reflects metered net volume of actual physical generation and consumption within  $ISP_t$  over the metering points within BRP's imbalance area (MWh). For calculation purposes generation volume is assigned positive sign and consumption volume is assigned negative sign.
- $E_{fp_t}$  – final position of BRP in  $ISP_t$ .  $E_{fp_t}$  reflects BRP's declared scheduled net energy volume of commercial transactions on organised markets or between BRPs including any imbalance adjustment applied to that BRP, within a given  $ISP_t$  (MWh). For calculation purposes generation volume is assigned positive sign and consumption volume is assigned negative sign.

14. Final position ( $E_{fp_t}$ ) is calculated as follows:

$$E_{fp_t} = E_{p_t} + E_{adj_t}, \text{ whereas}$$

- $E_{p_t}$  – position of BRP in  $ISP_t$ .  $E_{p_t}$  reflects BRP's scheduled net energy volume of commercial transactions on organised markets or between BRPs within a given  $ISP_t$  (MWh) in accordance with local balancing agreements;
- $E_{adj_t}$  – imbalance adjustment reflects required changes in BRP's final position  $E_{fp_t}$  to account for the balancing energy activated by order of the TSO and executed by a BSP within BRP's imbalance area.  $E_{adj_t}$  can be both positive and negative, depending on the direction balancing activation had (MWh).

15. Each TSO shall establish processes for information exchange in regards to BRP's final position and BRP's allocated energy volume.

16. The imbalance price is determined based on the direction of the Baltic CoBA imbalance position during particular ISP (exemplified in Table 1). Imbalance price for  $ISP_t$  ( $P_{imb_t}$ ) for each TSO's respective imbalance area shall be calculated as follows:

- 16.1. For  $ISP_t$  where there is overall energy shortage within Baltic CoBA, the single imbalance price shall be calculated:

$$P_{imb_t} = P_{bal_t} + P_{tc_t}, \text{ whereas}$$

- $P_{bal_t}$  – balancing energy price for  $ISP_t$  (EUR/MWh).  $P_{bal_t}$  shall be calculated as in accordance to Baltic balancing market rules;
- $P_{tc_t}$  – target component for  $ISP_t$  (EUR/MWh).

- 16.2 For  $ISP_t$  where there is overall energy surplus within Baltic CoBA, the single imbalance price shall be calculated as follows:

$$P_{imb_t} = P_{bal_t} - P_{tc_t}$$

<i>Imbalance position in <math>ISP_t</math></i>		<i>Baltic CoBA</i>	
		<i>Shortage</i>	<i>Surplus</i>
<i>BRP</i>	<i>Shortage</i>	$P_{imb_t} = P_{bal_t} + P_{tc_t}$	$P_{imb_t} = P_{bal_t} - P_{tc_t}$
	<i>Surplus</i>		

*Table 1 - Single imbalance price methodology*

17. Targeted component ( $P_{tc_t}$ ) is the same value for each  $ISP$  in accounting period and is calculated, taking into account all expenses and/or income from energy trade for not netted area control error (ACE) with open balance provider and other expenses and/or income in regards to CoBA operative activities occurred during accounting period, that are not included in balancing price. Targeted component shall be calculated as follows:

$$P_{tc_t} = \frac{\sum_{t=1}^T (C_{bal_t} + C_{OBP_t}) + \sum_{t=1}^T \sum_{n=1}^N (E_{imb_{t,n}} * P_{bal_{t,n}})}{\sum_{t=1}^T |\sum_{n=1}^N E_{imb_{t,n}}|}, \text{ whereas}$$

- $C_{bal_t}$  – total costs (+)/ revenue (-) of activated balancing energy incurred by Baltic TSOs in the  $ISP_t$  (EUR);
- $C_{OBP_t}$  – total costs (+)/ revenue (-) of energy delivered by/ to open balance provider in the  $ISP_t$  (EUR);
- N – total number of BRPs in CoBA;
- n – particular BRP.

#### **IV Market information**

18. All Baltic TSOs ensure that information relevant to imbalance price calculations is available on Baltic TSOs' websites and/ or Baltic balancing market dashboard. Imbalance volumes and imbalance prices for each  $ISP_t$  shall be available no later than the 5th working day of the month following the according accounting period.