9 November 2023

ELIA TRANSMISSION BELGIUM

Tariffs for maintaining and restoring the residual balance of individual access responsibles[1]

2024-2027 period

[1] Access responsible = Balancing Responsible Party (BRP)

1 Tariff for maintaining and restoring the individual balance of Balance Responsible Parties (BRPs)

The tariff for maintaining and restoring the individual balance of Balance Responsible Parties (BRPs) is based on the costs incurred by Elia for maintaining a balance between generation and consumption in the Belgian control area for the quarter-hour in question and is intended to appropriately incentivise BRPs to balance their injection and offtake levels, as per Article 12(5)(10) of the Electricity Act of 29 April 1999 and as per Paragraphs 4.2(2), 4.4, 4.5 and 4.6 of Annex 2 of the Tariff Methodology dated 30 June 2022.

1.1 Definition

The *imbalance* of a given BRP is the quarter-hourly difference between its total injections within the BRP's perimeter for said quarter-hour and total offtake within this same perimeter for the same quarter-hour, including active grid losses attributable to and compensated by said BRP. The concepts of injection and offtake, as well as the composition of the imbalance perimeter, are as described in the BRP T&Cs.

The *imbalance of the Control Area* (hereinafter system imbalance or SI) is established, for a given quarter-hour, using the equation below:

1. For the period before connection to the European aFRR platform and before the mFRR technical go-live:[2]

   $$System\ Imbalance = ACE - NRV$$

   where:

   - *NRV = Net Regulation Volume* as defined in the market operating rules pertaining to the compensation for quarter-hourly imbalances which reflects, for a given quarter-hour, the net volume of energy for upward and downward adjustment implemented by Elia to maintain the balance of Elia's control area. A plus or minus sign in front of the NRV indicates an overall energy shortage or energy surplus in the Belgian control area respectively. If the NRV is equal to zero, the control area is typically considered to be suffering a shortage. The NRV is adjusted to take into account, where applicable, activations of the strategic reserve, in accordance with the principles described in the rules governing the functioning of the strategic reserve.

[2] The technical go-live corresponds to the entry into force of the BSP mFRR T&Cs, amended to include the changes to the mFRR product required for connection to the European mFRR platform.

- *ACE = Area Control Error,*[3] which is equal to the instantaneous difference between the reference values (scheduled generation) and the actual values (measured generation) for power exchange within the Belgian control area, taking into account the effect of frequency bias.

2. For the period after connection to the European aFRR platform and/or the mFRR technical go-live (as per the BRP T&Cs or the Balancing Rules):

$$SI_t = \Delta P_t + k\Delta f_t - (aFRR\ requested_t + mFRR\ requested_t)$$

where:

- SI_t: the average value over a quarter-hour t of the instantaneous system imbalance
- ΔP_t: the difference between measured and scheduled cross-border flows, expressed in MW:

$$\Delta P_t = P_{measured,t} - P_{scheduled,t}$$

where:

  - $P_{measured,t}$: the sum of flows measured at interconnections between Elia and neighbouring transmission system operators (hereinafter TSOs). An exported flow is considered positive, while an imported flow is negative. The value is expressed in MW.
  - *Pscheduled,t:* the sum of scheduled flows at interconnections between Elia and neighbouring TSOs. This term does not include cross-border flows resulting from the Imbalance Netting platform or the European aFRR platform. An exported flow is considered positive, while an imported flow is negative. The value is expressed in MW.

- $k\Delta f_t$: frequency control error, expressed in MW. This is the estimate of the actual amount of active power adjusted in the LFC area in response to the system frequency. In other words, this corresponds to the expected response of the FCR supply units in Elia's LFC block.
- *aFRR requested*$_t$: as defined in the BSP aFRR T&Cs, expressed in MW.
- *mFRR requested*$_t$: as defined in the BSP mFRR T&Cs, expressed in MW.

The ***dead band*** is defined as an SI interval for which a specific approach is planned for determining the marginal price of upward and downward activations. This interval [Lim_inf;

[3] Defined in Commission Regulation (EU) 2017/1485 establishing a guideline on electricity transmission system operation.

Lim_sup] includes all SIs, expressed in MW, greater than or equal to a lower limit (Lim_inf) and lower than or equal to an upper limit (Lim_sup).

The exact method of determining the dead band (Lim_inf, Lim_sup and associated mechanism) is set out in the balancing rules drawn up by Elia in accordance with the Code of Conduct or in the BRP T&Cs.

The *floor* is defined as a lower limit applicable to the marginal price of upward activations (MIP). The means of determining its value (in €/MWh) is set out in the balancing rules drawn up by Elia in accordance with the Code of Conduct or in the BRP T&Cs.

The *cap* is defined as an upper limit applicable to the marginal price of downward activations (MDP). The means of determining its value (in €/MWh) is set out in the balancing rules drawn up by Elia in accordance with the Code of Conduct or in the BRP T&Cs.

The *marginal price of upward activations* (hereinafter MIP) is defined as follows:

1. For the period before connection to the European aFRR platform and before the mFRR technical go-live:

   The *marginal price of upward activations* reflects, for a given quarter-hour, the highest price of energy used for upward activations to compensate for the imbalance in the Belgian control area for that quarter-hour.

2. For the period after connection to the European aFRR platform and/or the mFRR technical go-live:

   The *marginal price of upward activations* comprises, for a given quarter-hour, the highest price of energy used for upward activations to compensate for the imbalance in the Belgian control area for that quarter-hour, a floor and a dead band.

The exact method for determining the MIP (formula) is set out in the balancing rules drawn up in accordance with the Code of Conduct or in the BRP T&Cs.

The *marginal price of downward activations* (hereinafter MDP) is defined as follows:

1. For the period before connection to the European aFRR platform and before the mFRR technical go-live:

   The *marginal price of downward activations* reflects, for a given quarter-hour, the lowest price of energy used for downward activations to compensate for the imbalance in the Belgian control area for that quarter-hour.

2. For the period after connection to the European aFRR platform and/or the mFRR technical go-live:

   The *marginal price of downward activations* comprises, for a given quarter-hour, the

lowest price of energy used for downward activations to compensate for the imbalance in the Belgian control area for that quarter-hour, a cap and a dead band.

The exact method for determining the MDP (formula) is set out in the balancing rules drawn up in accordance with the Code of Conduct or in the BRP T&Cs.

The *alpha parameter* (hereinafter α) constitutes an additional incentive applying in the event of a structural imbalance in the Belgian control area, both to BRPs with an imbalance in the same direction as the imbalance in the Belgian control area and to BRPs with an imbalance in the opposite direction to the imbalance in the Belgian control area. In particular, it dovetails with the application of the incentive provided by the provision referred to in Article 4.4. of Annex 2 of the Tariff Methodology set by CREG. It is an extension of the alpha parameter already applied during the 2020-2023 regulatory period. For the period beginning with the first connection to a European platform for the exchange of balancing energy (MARI/PICASSO), the determination of its value (in €/MWh) is included in the BRP T&Cs.

1.2 Tariff for maintaining and restoring the residual balance of individual BRPs

According to Table 2 of Article 55.1 of the directive on electricity system balancing (see below), the plus or minus sign in front of the imbalance of a given BRP determines whether the tariff for maintaining and restoring the residual balance of the BRPs reflects a purchase tariff or sale tariff by Elia. A positive imbalance corresponds to an excessive injection of energy by the BRP. The tariff that applies in this scenario is a purchase tariff for surplus energy, which is therefore paid by Elia to the BRP if the tariff for balancing energy is positive. In contrast, a negative imbalance corresponds to an insufficient injection of energy by the BRP. The tariff that applies in this scenario is a sale tariff for an energy shortage, which is therefore paid by the BRP to Elia if the tariff for balancing energy is positive.

The tariff for maintaining and restoring the residual balance of the BRPs is generally positive. However, it is possible, especially in the event of a downward adjustment, that the tariff will be negative, meaning that reverse payments are made between Elia and the relevant BRPs.

Payment for imbalance

	Imbalance price positive	Imbalance price negative
Positive imbalance	Payment from TSO to BRP	Payment from BRP to TSO
Negative imbalance	Payment from BRP to TSO	Payment from TSO to BRP

Table 1: Extract from Article 55.1 of the directive on electricity system balancing

For the 2024-2027 period, the tariff for maintaining and restoring the residual balance of individual BRPs is constructed according to the following **Error! Reference source not found.**.

		System imbalance	
		Positive	Negative or zero
BRP imbalance	Positive	MDP – α	MIP + α
	Negative		

Table 2: Tariff for maintaining and restoring the individual balance of BRPs

where:

- MDP = marginal price of downward activations, consisting of the lowest price of energy used for downward activations, a cap (or upper limit) and a dead band.
- MIP = marginal price of upward activations, consisting of the highest price of energy used for upward activations, a floor (or lower limit) and a dead band.
- For the period before the first connection to a European platform for the exchange of balancing energy (MARI/PICASSO):
  - α(t) (€/MWh)= 0 if ABS (SI) ≤ 150 MW
  - α(t) (€/MWh) = $a + \frac{b}{1+\exp\left(\frac{c-x}{d}\right)}\ cp$ if ABS (SI) > 150 MW

  with the following values for the parameters a, b, c, d, x, cp:

  a = €0/MWh
  b = €200/MWh
  c = 450 MW
  d = 65 MW
  x = the sliding average of the SI of the quarter-hours qh(t) and qh(t-1)
  cp is determined as a function of the values of MIP and MDP according to:
  - If SI (t) ≤ 0
    - If MIP (t) > €400/MWh; 0
    - If €200/MWh < MIP (t) ≤ €400/MWh; (400 − MIP(t))/200
    - If MIP (t) ≤ €200/MWh; 1
  - If SI (t) > 0
    - If MDP ≥ €0/MWh; 1
    - If -€200/MWh ≤ MDP(t) < €0/MWh; (MDP(t) + 200)/200
    - If MDP(t) < -€200/MWh; 0
- For the period beginning with the first connection to a European platform for the exchange of balancing energy (MARI/PICASSO), the determination of the value of the α parameter (in €/MWh) is included in the BRP T&Cs.

In order to guarantee effective incentives for BRPs in specific situations, more specifically in the event of supply problems, special rules for determining the value of the tariff for maintaining and restoring the residual balance of individual BRPs may apply. Depending on the case at hand, these rules are described in the rules governing the functioning of the strategic reserve, more specifically in the event of:

- the activation of strategic reserves, as provided for in Sections 4.2 and 4.6 of Annex 2 of the Tariff Methodology;
- the application of Article 7 septies (2) of the Electricity Act.

If necessary, additional rules suggested by Elia and approved by CREG shall also be taken into account.

1.3 Tariff for external inconsistency

In addition to the tariff for maintaining and restoring the individual balance of BRPs, a tariff for inconsistency is applied to energy exchanges on the grid. This tariff is intended to offer BRPs an economic incentive to ensure consistency between their respective exchange programmes.

Nominations announced by two BRPs are externally inconsistent when the nomination announced by the seller differs from that announced by the buyer.

The following tariffs apply to absolute value differences between the quarter-hourly volumes nominated by these two parties:

- When the volume nominated by the buyer is lower than that nominated by the seller: the tariff (absolute value) applies to the BRP's positive imbalance
- When the volume nominated by the buyer is greater than that nominated by the seller: the tariff (absolute value) applies to the BRP's negative imbalance

Should Elia accept the nominations in question, the tariff is applied as follows:

- If Elia has only received the nomination from one BRP and not from a counterparty, the BRP pays the tariff in full
- If Elia has received nominations from both BRPs, the tariff is split 50-50 between the two
- In the event of an internal commercial exchange of energy blocks on a Belgian market pursuant to the Royal Decree Exchange,[4][5] the respective BRP pays the tariff in full

The parity between the tariff for external inconsistency and that for imbalances leads to neutrality between an imbalance and an inconsistency, which makes it possible to avoid a strategy of internalising inconsistencies, whereby a BRP would voluntarily maintain an imbalance in order to avoid any inconsistency in their programmes.

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[4] However, if the market operator's counterparty disputes the invoice and proves that the situation in question is the result of an error by the market operator (a company that meets the criteria set out in the Royal Decree Exchange), Elia shall send a credit note to said counterparty for the entire aforementioned invoice and shall issue a new invoice to the market operator.

[5] The Royal Decree of 20 October 2005 concerning the creation and organisation of a Belgian market for the exchange of energy blocks.

Such a measure also gives BRPs an incentive to provide the system operator with exchange programmes that are representative of reality.

1.4 Tariff for inconsistent programmes

Elia also fines BRPs for submitting inconsistent programmes more than once within a 30-day period.

This fine is currently set at €0/MWh, partly because virtually almost no inconsistencies were recorded during the previous regulatory period. Should it become apparent, however, that such a fine is necessary to ensure the smooth functioning of the market, Elia would suggest increasing it, subject to CREG's approval.

2 Restoration tariff for dispatching periods controlled by the transmission system operator

Pursuant to Article 39 of Commission Regulation (EU) 2017/2196 establishing a network code on electricity emergency and restoration, Elia is required to set a restoration tariff in the event of a period of dispatching controlled by the TSO during the restoration of the grid following a widespread outage. This restoration tariff varies per market time unit and applies during all the market time units of the dispatching period controlled by the TSO. It is calculated as follows:

$$\text{Price\_r}_{\text{MTU\_i}} = \frac{\sum_{k=0}^{20} P\_DA_{MTU_i,Dj-k} - MAX\_3\left(P_{DA_{MTU_i,Dj}}:P_{DA_{MTU_i,Dj-20}}\right) - MIN\_3\left(P_{DA_{MTU_i,Dj}}:P_{DA_{MTU_i,Dj-20}}\right)}{15}$$

where:

- *Price_rMTU_i* = restoration tariff for MTU_i during the dispatching period controlled by the TSO
- *MTU* = Market Time Unit for the Belgian bidding zone for day-ahead auctions: currently 60 minutes, 15 minutes ahead (current planning estimate: 2025)
- *MTU_i*: any MTU in the dispatching period controlled by the TSO
- *Dj*: the last day on which the TSO was not in a dispatching period controlled by the TSO at 00:00
- $P\_DAMTU_{i,Dj-k}$: day-ahead reference price for the Belgian bidding zone6 calculated for the same MTU_i for the delivery day Dj-k
- $MIN\_3PDAMTU_{i,Dj}:PDAMTU_{i,Dj-20}$: the three lowest prices for MTU_i for the 21 days of the period Dj to Dj-20
- $MAX\_3(PDAMTU_{i,Dj}:PDAMTU_{i,Dj-20})$: the three highest prices for MTU_i for the 21 days of the period Dj to Dj-20
- As such, the Price_rMTU_i formula is the average of the last 21 days of day-ahead reference prices in the Belgian bidding zone, calculated for the same MTU_i for delivery days Dj to Dj-20, from which the extreme values (three lowest and three highest) have been removed to better reflect costs (15 out of 21)

This tariff replaces the imbalance tariff during all the market time units of the dispatching period controlled by the TSO.

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[6] Calculated by Elia in accordance with the Multiple NEMO Arrangement for the Belgian bidding zone (Belgian MNA), pursuant to Articles 45 and 57 of Commission Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management and approved by CREG on 22 December 2016 in its decision (B)1575. This price is published on the Elia website: https://www.elia.be/en/grid-data/transmission/day-ahead-reference-price