



## Imbalance tariff: an incentive for ARPs to maintain balance in their balancing perimeter

To ensure the stability of the European interconnected system, the European Network of Transmission System Operators for Electricity (ENTSO-E) demands that electricity production and consumption always be balanced. Elia is supported in this task by the ARPs, which are each responsible for balance in their perimeter. In order to ensure the general balance of its grid and manage the instantaneous residual imbalances that the ARPs are not able to control, Elia has established a balancing mechanism. This mechanism makes use of power reserves supplied by some of the Elia grid users. The costs involved in efficient operation of the balancing mechanism are covered by applying a charge to any imbalances of the ARPs. The main idea behind them is to encourage ARPs to maintain balance in their balancing perimeter.

For further information about role of the ARPs in the balancing mechanism or the balancing data provided on the internet, see the sheets "The balancing mechanism: ensuring the balance of the Elia control area" and "Electronic publication of balancing data: information for the use of market operators".

### I. Imbalance tariff: principles

To ensure balance within its control area, Elia can make use of reserves which allow it to increase or decrease the volumes of electricity taken off or injected into its grid. In order to guarantee a minimum volume of reserves, Elia has concluded reservation contracts with grid users; these contracts involve costs for the system operator.

#### I.1. Promoting balance

In order to ensure the balance of its grid, Elia has established a balancing mechanism which enables it to offset imbalances in its control area. Elia covers the costs of this mechanism with a charge on any ARP imbalances (implemented via billing the individual imbalances of ARPs). To promote the balance of its grid, the idea behind the charge applied by Elia when billing the ARPs is to encourage them to do everything they can to ensure the balance of their portfolio. The amount of this specific charge for maintaining and restoring the individual balance of ARPs can be found on the Elia website.

#### I.2. Imbalance in an ARP's perimeter: the basis for application of the tariff

The imbalance charge is worked out on a quarter-hourly basis, meaning that an ARP's perimeter must be balanced at the end of every quarter-hour.

When any imbalance occurs, the imbalance tariff is applied. The ARP is then billed for every quarter-hour when it has an imbalanced perimeter.

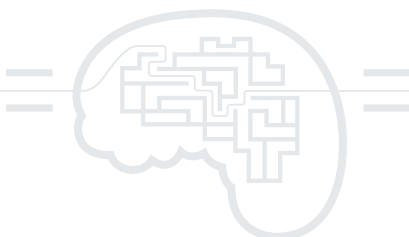
### II. Imbalance tariffs in depth

All Elia tariffs are cost-reflective and are also based on the provision of suitable incentives; they must reflect the costs incurred by Elia. In the case of the imbalance tariff, the aim is also to adequately encourage ARPs to maintain the balance of their perimeter in conformity with the Electricity Act.

#### II.1. Offsetting costs

Elia has a number of tools to offset imbalances in its control area:

- the secondary reserve (see the sheet "Secondary reserve");
- the tertiary reserves (see the sheets "Tertiary production reserve", "The tertiary offtake reserve: paid interruption in order to preserve the grid" and "A specific tertiary offtake reserve: Dynamic Profile");
- power reserves that can be activated under the CIPU contract (see the sheet "The CIPU contract: a set framework for taking part in high-voltage grid management");
- the reserve contracts concluded with neighbouring transmission system operators (see the Balancing Rules - les Règles de Fonctionnement du marché relatif à la compensation des déséquilibres quart-horaires).



Elia pays users that provide it with these ancillary services if the reserves just mentioned are actually activated. The activation costs are passed on to ARPs via the imbalance tariff. A point to note here is that the payment for provision of the reserves is taken into account when calculating the grid access tariff.

## II.2. Encouraging every ARP to maintain the balance of its balancing perimeter

The charge is calculated taking into account the following factors:

- the nature of the ARP's imbalance: if it has injected too much energy into the grid, in general Elia pays the ARP for its injections; if it has taken too much energy off the grid, the ARP pays Elia for its surplus offtakes;
- the cost of the activations carried out by Elia to restore the balance of its area;
- the system imbalance of the Belgian control area: in the event of structural imbalances, an additional incentive component ( $\alpha$ ) is applied - it is calculated on the basis of the imbalance of the control area;
- if need be, should the strategic reserve be activated, indicators identifying structural shortages in the control area.

### The ARP helps Elia to restore the general balance of the area

In certain situations the imbalance in an ARP's perimeter may help to reduce the general imbalance in the control area. This is the case when there are insufficient offtakes in the ARP's perimeter whereas there are insufficient injections in the Elia control area. If the ARP finds itself in this position, it helps Elia to restore the balance in its control area. Its imbalance is then recorded and billed based on the prices of the activations carried out by Elia to restore the balance of the area. Those prices can be changed by applying an additional price component ( $\beta$ ). There are two possibilities:

- Elia pays the ARP for its help in regulation of the area and its additional injection into the area (see scenario B in the diagram); or
- the ARP pays Elia for its offtakes if these exceed its injections (see scenario C in the diagram).

An ARP can also use the mechanism contained in the ARP contract (Article 10.2), which authorises the ARP to voluntarily participate in the general objective of maintaining the balance in the control area by deviating from the balance in their balancing perimeter in real time, provided that the ARP retain their ability to restore their balance in real time at any point.

### The ARP adds to the general imbalance of the Elia control area

In other cases, the ARP's imbalance does not contribute to reducing the general imbalance of the control area. The ARP's imbalance is then recorded and billed based on the prices of the activations carried out by Elia to restore the balance of its area. In the event of major structural imbalances, the price is increased (if there is a deficit) or decreased (if there is a surplus) by applying an additional price component ( $\alpha$ ). There are two possibilities:

- in general, Elia pays the ARP for its additional injection (see scenario A in the diagram); or
- the ARP pays Elia for its offtakes if these exceed its injections (see scenario D in the diagram).

### Tariffs as a deterrent

ARPs might be tempted to deliberately engineer an imbalance in their perimeter in order to take advantage of a more favourable market situation in Belgium or elsewhere. To prevent such a situation, the tariff is designed to encourage ARPs to maintain balance in their perimeter regardless of the circumstances. This means that the tariff must be such as to deter any ARP from choosing to maintain its individual imbalance as it gambles on favourable market conditions. In fact, the deterrent must be so consistent and so strong that ARPs will not take such action even when sorely tempted by certain market conditions (for example, when at certain times during the day, the price of electricity is particularly high on Belgium's neighbouring markets).

## II.3. Setting imbalance tariff

To meet these aims, imbalance tariff is based on a number of factors:

- prices of activations requested by Elia to regulate the balance of its control area: the prices of upward regulation, taking into account the marginal incremental price (MIP), and the prices of downward regulation, taking into account the marginal decremental price (MDP);
- an additional price component ( $\alpha$ ,  $\beta$ ) that encourages the ARPs to maintain their balance at a level close to zero regardless of the circumstances.

		Situation in the Elia control area Net Regulation Volume (NRV)	
		There is a surplus in the area (offtakes < injections) NRV is negative (net downward regulation)	There is a deficit in the area (offtakes > injections) NRV is positive (net upward regulation)
Imbalance in the ARP's perimeter	Positive	<b>A</b> MDP - $\alpha 1$	<b>B</b> MIP - $\beta 1$
	Negative	<b>C</b> MDP + $\beta 2$	<b>D</b> MIP + $\alpha 2$

where:

- $\beta 1$  (€/MWh) = 0
- $\beta 2$  (€/MWh) = 0
- if the absolute value of the system imbalance is less than or equal to 140 MW;
  - $\alpha 1$  (€/MWh) = 0
  - $\alpha 2$  (€/MWh) = 0
- if the absolute value of the system imbalance is greater than 140 MW
  - $\alpha 1$  (€/MWh) = average  $\{(System\ imbalance\ QH-7)^2, \dots, (System\ imbalance\ QH)^2\} / 15.000$
  - $\alpha 2$  (€/MWh) = average  $\{(System\ imbalance\ QH-7)^2, \dots, (System\ imbalance\ QH)^2\} / 15.000$ .

The values of these parameters are liable to change; such a change does not mean an official tariff modification. The most up-to-date imbalance prices are published on the Elia website ([www.elia.be](http://www.elia.be)).

The application value(s) for the tariff for maintaining and restoring individual ARPs balance during the activation of the strategic reserve and the creation of a structural shortage in the area is set at €4,500/MWh (for the four zones A, B, C, D above).

The arrangements for applying this tariff are outlined in the Functioning Rules for Strategic Reserves (see product sheet 'The strategic reserve – A mechanism to cover structural shortages in generation').

#### Information provided to the market

The publication of all these parameters and the imbalance prices on the Elia website guarantees the transparency of the imbalance compensation mechanism. The publication of these data also provides all the market players with useful and relevant information (see the product sheet "Electronic publication of balancing data: information for the use of market operators").

### III. Legal and contractual basis

Under the federal Grid Code, Elia is legally obliged to maintain balance in its control area while ARPs are legally obliged to maintain the balance of their perimeters. From a contractual perspective, ARP status is acquired by signing an ARP contract with Elia. In addition, an access contract designates ARPs for each of the access points listed in that contract.

## The tariff for maintaining and restoring the individual balance of ARPs in 6 key points

- Elia ensures balance in its control area.
- Imbalance tariffs encourage the ARPs to do everything they can to maintain their individual balance.
- Elia applies imbalance tariff in order to pass on the costs it incurs in restoring balance in its control area.
- The structure of the imbalance tariff has been approved by the regulator and is designed to be non-discriminatory and transparent.
- If an ARP via its imbalance has helped Elia to restore the balance of its control area, this is reflected in billing.

