

## Mechanism for managing the balance of the ELIA control area

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### Previous versions

Version	Date	Author	Summary modifications
v 1.0	05/07/06	Market Mechanism	Initial version
v 1.1	17/07/06	Market Mechanism	Mechanism 2006 (MRP=APX)
V1.3	18/12/07	Patrick Martin	Adaptation for mechanism 2008
V1.4	19/12/07	Hans Vandenbroucke	Adaptation for mechanism 2008
V1.5	22/7/2009	Emeline Spire	Clarifications
V1.6	25/01/11	Pieter-Jan Marsboom	Adaptation for mechanism 2011
V 1.7	30/11/11	Bob Hebb	Adaptation for mechanism 2012
V 1.8	25/06/12	Bob Hebb	Modification for emergency contracts
V 1.9	01/10/12	Anna Tsiokanos	Modification for IGCC netting

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## Resources available for managing the balance of the area

As System Operator, one of ELIA's missions is to manage the balance of the area over which it has control. To do this, ELIA has a certain number of resources at its disposal:

- The secondary reserve
- The tertiary reserve via the production units, including:
  - The contracted tertiary reserve
  - The non-contracted tertiary reserve (I/D bids, CIPU contract)
- The tertiary reserve via sheddable customers
- The emergency contracts with neighbouring TSOs.

The secondary reserve has two components: a contracted secondary reserve and free bids of secondary control power.

The contracted secondary reserve is subject to Annex 2 "Contract for secondary control". The reservation of power for secondary control for the year 2012 will on the one hand be executed on basis of the governmental resolution of 23/12/2011, which imposes conditions regarding price and supply for use in 2012 of this secondary control by different producers. On the other hand contracts for additional volumes with other producers were set-up after commercial negotiations.

Those companies that are contracted to ELIA must supply continuously the reserve power specified in the contract and are remunerated for putting it at disposal. Each day they submit bids to ELIA for the activation of that reserve. These bids go in pairs (upward regulation and downward regulation), where the volumes must be in multiples of 0.1 MW with a minimum of 5 MW and where the prices are within the limits set out in the graph below and in the following rules:

- The incremental price will maximally be the maximum of the market reference price (Belpex) and the specific fuelcost plus 5€/MWh.
- The decremental price can maximally be 10€/MWh lower than the incremental price.
- If the market reference price is positive or zero, the offer price for the delivery of energy should be positive or zero. This price (in €/MWh) for the delivery of energy (netto upward regulation) will in that case not be larger than the upper limit.

Additional bids can be freely introduced on a daily basis, extra to any reservation contract, by power producers complying with the technical specifications required by ELIA, whether they already have a contract with ELIA or other producers who have the opportunity to supply additional control power. These bids are also introduced in pairs (up and down) and in multiples of 0.1 MW with a minimum of 5 MW, but are not subject to any price limit. Bearing in mind that these bids are not subject to any yearly power reservation, ELIA will only pay for their activation.

Communication of these bids (volumes and prices) for day D is made to ELIA on day D-1 at 15:00 hrs at the latest. ELIA will select the bids on an economic basis until the required secondary control power level is reached, excluding beforehand certain bids problematic for the safety of the grid and taking into account technical modalities of the activation. The selection is made independently for upward and downward regulation. At the end of the selection process, the producers will be informed whether their bids have been accepted or not by ELIA for the purposes of the secondary reserve.

Bids, which are not retained for the secondary reserve, are added to the tertiary reserve bids within the framework of the CIPU contract (see below).

The tertiary reserve via production units has two components: a contracted tertiary reserve and bids within the framework of the CIPU contract.

The contracted reserve is subject to "Tertiary Reserve Contracts". It is assigned via an annual call for tender. Putting this tertiary reserve at disposition is remunerated. The activation prices for the contracted tertiary reserve are calculated on basis of a contractual formula taking account of the fuel price and the efficiency of the generation unit. Given its nature, this reserve can only be activated upwards.

Bids within the framework of the CIPU contract derive from the obligation incumbent on the producer to put at ELIA's disposal, the power reserve (upwards or downwards) of each of his units. The bids from producers with regard to the activation of that power reserve are free upwards and downwards. They are positive for upward activations (ELIA pays the producer for activation) and may be positive (the producer pays ELIA for their activation) or negative (ELIA pays the producer for the reduction of his production) for downward activations.

The tertiary reserve via the sheddable customers is also contracted (Interruptibility Contract) via a call for tenders. It concerns industrial customers who must reduce their off-take below a contractual threshold at the request of ELIA. The contract provides for only a limited number of activations per year. The remuneration price for one activation is equal to 108% of the price of the day ahead clearing price of the energy exchange BELPEX with a minimum of €75/MWh.

ELIA also has emergency contracts with neighbouring TSOs at its disposal. These contracts can be activated for importing or exporting power. The volume and the price are defined and may be reviewed by the respective TSOs. They take into account the generation resources that can be activated (volume and price of activation) in the concerned control area.

An activation of the emergency contract will be settled as follows in the imbalance prices:

- In the event of imports or exports at the request of a neighbouring TSO the activation will not have an impact on the imbalance tariffs.
- In the event of imports at the request of Elia the contractual activation price will be considered for determining the marginal incremental price for upward regulation.
- In the event of exports at the request of Elia the minimum of -€100/MWh and the contractual activation price will be considered for determining the marginal decremental price for downward regulation.
- In the event of a situation where an export at the request of Elia is required, but during which the emergency power is unavailable, a fixed amount equal to -100 €/MWh will be considered for determining the marginal decremental price for downward regulation

## IGCC – A mechanism that reduces imbalances in the Belgian control area

The International Grid Control Cooperation is an operation made in collaboration between neighbouring TSOs; it consists in the exchange of opposite imbalances in order to reduce the imbalance that has to be compensated for each control area.

The volume of energy to be netted is limited by the remaining free capacity at the borders after the allocations of the intra-day markets and by the contracted volume of secondary reserve of each TSO since the IGCC netting of a control area can be interrupted at any time.

Like other Ancillary Services described in this document IGCC will have an impact on the imbalance tariffs:

- The exchanged volumes through IGCC will be taken into account for the determination of the Net Regulation Volume (NRV).
- In the event of IGCC import the same price as for the upwards secondary reserve activations will be considered for the imbalance prices.
- In the event of IGCC export the same price as for the downwards secondary reserve activations will be considered for the imbalance prices.

The remaining imbalance of the Belgian control area after IGCC netting Elia will be compensated with the means at its disposal conform this document.

## Activation of available resources

ELIA has the following resources at its disposal to compensate for a negative imbalance in the area (ARPs inject less power than they take off):

- secondary upward regulation
- non-contracted tertiary reserve on the production units (CIPU Incrementals)
- contracted tertiary reserve on the production units
- contracted tertiary reserve with sheddable customers
- contracted emergency power with neighbouring TSOs.

For a positive imbalance in the area (ARPs inject more power than they take off), ELIA has at its disposal:

- Secondary downward regulation
- non-contracted tertiary reserve on the production units (CIPU Decrementals)
- contracted emergency power with neighbouring TSOs.

Secondary reserve is the main resource for regulating the Belgian control area. Its automatic activation enables quick reactions to imbalances and in this way limits the total need for regulation volume. An automatic secondary regulation signal is sent every 10s to providers of secondary reserve whose offers were selected in D-1 for the considered quarter-hour.

When secondary reserve is estimated not sufficient<sup>1</sup>, tertiary reserve (i.e. the other above-mentioned regulation resources) are manually activated in the following order:

- non-contracted tertiary reserves based on a technical-economic merit-order
- tertiary reserves on production units and with sheddable customers
- contracted emergency reserve power with neighbouring TSOs
  - Several elements can lead to amend the above merit order, notably: the presence of congestion on the grid making it impossible to activate certain bids from a grid security point of view,
  - the limited number of activations (4x a year) allowed from the contracted reserve among the sheddable customers.
  - The non-guaranteed status of inter-TSOs reserves

The volume of bids activated depends on the volume of imbalance in the Belgian control area. The direction of its imbalance determines the type of bids to be activated (upwards if imbalance is negative or downwards if the imbalance is positive), the purpose being to try to keep the control area in balance all the time.

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<sup>1</sup> For the considered quarter

## Transparency

### Available regulating power

As from October 2006, ELIA will publish every day D, for day D+1, the volumes of bids that can be activated within 15 minutes upwards and downwards, by type of reserve, for every quarter of an hour in the day, as well as a graph representing on a quarter-hourly basis the marginal price of the bids that can be activated for certain upward and downward volumes.

### Actual System Imbalance

Elia also publishes (since 27/10/2009), with an update each 2 minutes, the current NRV activated by ELIA together with the aggregated value of this NRV from the start of the current quarter.

From 01/01/2012 ELIA will publish the current and aggregated value as well for the system imbalance.

The system imbalance (SI) is calculated by taking the difference between the remaining system imbalance (ACE) and the net balancing volume (NRV).

The remaining system imbalance (ACE) is calculated by taking the difference between the programmed values and measurements from the exchanges at the borders of the Belgian control zone.

### Usage of regulating power

ELIA publishes also on its Website, the following activation data, on a quarter-hourly basis:

- The activated volumes per product category:
  - The sum of the activated up- and downward regulating volumes
  - The highest price paid by ELIA during the respective quarter for upward regulating volumes
  - The lowest price received by ELIA during the respective quarter for downward regulating volumes
- The activated upward regulating volumes:
- The Gross volume of upward regulation ("GUV") which is equal to the sum of the control volumes activated by ELIA upwards;
- The marginal incremental price for upward regulation ("MIP") is, for a given quarter, the highest price of all upwards activations ordered by Elia for maintaining balance in the Belgian control area. The activated downward regulating volumes:
- The Gross volume of downward regulation ("GDV") which is equal to the sum of the control volumes activated by ELIA downwards;
- The marginal decremental price for downward regulation ("MDP") is, for a given quarter, the lowest price of all downwards activations ordered by Elia for maintaining balance in the Belgian control area. The Net Balancing Volume

("NRV") which is equal to the difference between the gross volume of upward regulation and the gross volume of downward regulation.

Only activations used for adjusting the control area are taken into account in the calculation. Each activation made in connection with managing national or international congestion or with the supply of a reserve to the neighbouring TSOs is ignored in this context.

#### Tariffs for the balancing energy (" Imbalance prices")

With regard to the prices, ELIA publishes on a quarter-hourly basis:

- The marginal incremental price for upward regulation ("MIP") is, for a given quarter, the highest price of all upwards activations ordered by Elia for maintaining balance in the Belgian control area.
- The marginal decremental price for downward regulation ("MDP"), is, for a given quarter, the lowest price of all downwards activations ordered by Elia for maintaining balance in the Belgian control area.
- An component " ", which is calculated based on the average system imbalance of the past 8 quarters.
- The resulting positive and negative imbalance prices, based on a calculation using the previous three components.

All these data are used for the calculation of the imbalance price.