



Tertiary production reserve: a solution to major imbalances and congestion

Elia's tertiary reserve comprises two types of reserve: tertiary production reserve and tertiary offtake reserve. These two types of reserve complement primary reserve, secondary reserve and capacity supplied under the CIPU contract, to cope with major imbalance and congestion problems. Tertiary production reserve is activated by the injection of additional capacity into the Elia grid. Unlike primary and secondary reserve, tertiary production reserve is activated manually by producers. Activation must make it possible to ensure full delivery of the reserve within 15 minutes of Elia submitting its request. Producers are paid for providing and activating their tertiary production reserve.

I. Tertiary production reserve: principles

I.1. The background to the primary, secondary and tertiary reserves

The Belgian high-voltage grid is part of a larger, interconnected European system. UCTE, the body responsible for co-ordination of the operation and the development of the European interconnected system, otherwise known as the UCTE synchronous area, recommends that all the system operators act in a spirit of solidarity to ensure the security and reliability of the European grid. Elia handles the Belgian control area, taking the measures needed to meet the objectives of reliability, efficiency and security.

The provision of power reserves is one component of managing grid operation. Their specific function is to maintain the frequency, voltage and efficient handling of imbalances or congestion in the Belgian control area.

Grid users provide Elia with three kinds of power reserves: primary, secondary and tertiary. The primary reserve can be activated very quickly (within 0 to 30 seconds) and is used to maintain frequency; the secondary reserve can be activated quickly (30 seconds-15 minutes) and alleviates typical imbalances; and the tertiary reserve can be activated (15 minutes) in the event of major imbalances and substantial congestion.

I.2. A third line of reserve to resolve major imbalances

The tertiary reserve is a power reserve that certain producers and large industrial customers make available to Elia. The tertiary reserve makes it possible to:

- cope with a major or systematic imbalance in the Elia control area;
- offset a significant frequency variation;
- resolve major congestion problems.

Unlike the primary and secondary reserves which are activated automatically, i.e. without human intervention, the tertiary reserve is activated manually. In other words, it is activated upon a specific decision by Elia. This is explained by the unusual nature of serious imbalance or congestion situations that require efficient and appropriate management.

I.3. Production and offtake: two facets of the same reserve

There are two types of tertiary reserve:

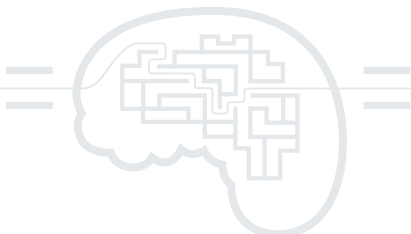
- tertiary production reserve, i.e. injecting additional power into the grid;
- tertiary offtake reserve, i.e. reducing the amount of power taken from the grid by the user (see sheet "Paid offtake interruption in order to preserve the grid").

I.4. Reserve that can be activated within 15 minutes

A producer that signs a tertiary production reserve contract with Elia undertakes to:

- provide Elia with a tertiary power reserve. The volume of the tertiary power reserve is stipulated in the contract;
- activate, on day D and on Elia's request, the power reserve must be fully delivered within 15 minutes of Elia requesting it. Elia may use this reserve until its congestion or imbalance problem is resolved.

Activation is requested by Elia and confirmed by the producer using an interface installed at Elia and on the producer's premises.



I.5. Exchange of essential data

A producer which makes tertiary reserve available to Elia shall provide the following by 14:00 on day D-1:

- a list of its production units taking part in the tertiary reserve;
- the reserve power that can be provided by each of its production units, on a quarter-hourly basis;
- the bids submitted for activations, complying with the procedure for submitting daily bids (day D-1 for day D) defined in the CIPU contract.

The data communicated in real time are transmitted electronically following the protocols defined by Elia. If necessary, the data can be confirmed by telephone between the producer's control centre and Elia.

II. Payment for the tertiary production reserve

A grid user providing Elia with tertiary production reserve receives payment:

- for providing the reserve;
- when the reserve is activated.

It should be emphasised that there are far fewer requests to activate the tertiary reserve than to activate the primary and secondary reserves or available power margins covered in the CIPU contract.

II.1. Payment for provision of the tertiary reserve

Elia has to make a payment to the grid user providing the tertiary reserve. This payment, the size of which is specified in the contract, covers the entire contractual term. According to the stipulations of the federal Grid Code, the payment (expressed in €/MW/hour of availability) must be equitable, i.e. it must reflect the costs actually involved in providing the reserve.

II.2. Payment for activation of the tertiary reserve

Elia's payment for activating the reserve comprises two distinct components:

- **payment for the energy supplied to Elia**

If Elia requests activation of the tertiary power reserve, the producer will be paid for activation. The amount paid is calculated using a formula stipulated in the contract, taking account of the price of the fuel used and the specific characteristics of the unit. The procedure for introducing these bids is identical to the procedure for submitting daily bids (day D-1 for day D) defined in the CIPU contract.

- **payment to cover start-up costs**

A payment for starting up units is only made if Elia explicitly orders the production unit to be started up. The amount of the payment is calculated using the same formula found in the CIPU contract. This formula takes account of the specifications of the production unit, the cost of the fuel used and the management costs incurred.

II.3. Operations with a neutral effect on the balancing perimeter

Activation of the tertiary production reserve does not have any effect on an ARP's balancing perimeter. Consequently, activation cannot lead to the invoicing of imbalance arising from a request made by Elia.

III. Benefits of the tertiary production reserve

There are multiple reasons why the production tertiary reserve is a particularly beneficial product for producers:

- in all cases, the payments stipulated in the tertiary reserve contract cover at least the costs incurred by the producers for providing these services;
- the producer benefits from a safe and stable framework for efficiently managing activities performed in real time;
- the producer takes part in the management of the national grid and contributes to its solid economic operation.

IV. Legal and contractual basis

The content of the tertiary reserve contract is based on the stipulations of the federal Grid Code. Reasonable prices are one of these legal requirements.

Only grid users that have already signed a CIPU contract with Elia can sign a tertiary reserve contract (see product sheet: "The CIPU contract: a set framework for taking part in the high-voltage grid management").

Elia organises European tender procedures for the supply of tertiary reserve. The tenders are selected on the basis of the proposed price and the control requirements. They are ranked from most favourable to least favourable and must comply with operational security requirements.

Volumes defined by Elia and approved by CREG

Elia evaluates the volume of capacity in its tertiary reserve on the basis of its requirements. CREG must approve this volume. To establish this reserve, Elia organises a procedure for grid users wishing to take part in the tertiary reserve. Grid users submit bids, which are then selected by financial merit order: Elia first chooses the least expensive bid and continues the selection procedure until the total volume of its annual reserve is reached.

Following the selection procedure, Elia concludes a tertiary production reserve contract with the chosen grid users.

Tertiary production reserve in 5 key points

- The tertiary production reserve contract allows Elia to request additional power to be injected into its grid.
- The tertiary production reserve is used to resolve major imbalance or congestion problems on the high-voltage grid.
- The reserve activation request is made "manually", i.e. it must be made pursuant to a decision. This is not the case with the primary and secondary reserves, both of which are activated automatically.
- There are two types of payment for the tertiary reserve: a set contractual payment for provision of the reserve and a payment for activation of the reserve.
- The activation of the tertiary production reserve has a neutral effect on the ARP's balancing perimeter.