



A specific tertiary offtake reserve: Dynamic Profile

The tertiary reserve "Dynamic Profile" is a new type of tertiary reserves allowing distributed energy resources, even when they are connected to the distribution grid, to participate in the ancillary services. Participation of delivery points connected to the distribution grid is subject to contractual and technical prerequisites set by the relevant distribution grid operator. The flexibility can also be aggregated from multiple energy sources and offered to Elia. The participants offering this resource are playing the new market role of "dynamic profile provider". The number of activations and the duration of the activation are limited. The balancing perimeter of the ARP is not corrected with the effectively activated energy.

I. The tertiary reserve "Dynamic Profile": principles

I.1. The context of the tertiary reserves ¹

Because electricity is a product that cannot be stored as such, there must always be a balance between injection (production and import) and offtake (load and export). Maintaining this balance ensures that the frequency remains at 50 Hz.

The tertiary reserve is a power reserve that certain producers, industrial customers and now also aggregators ² make available to Elia. The specific tertiary reserve "Dynamic Profile" (or R3 DP) contributes to:

- cope with a major imbalance in the Elia control area;
- offset a significant frequency variation.

Unlike the primary and secondary reserves which are activated automatically, the specific tertiary reserve R3 DP is manually activated like the other tertiary reserves. In other words, it is activated upon a specific decision by Elia. This is explained by the unusual nature of serious imbalance situations that require ad hoc and appropriate management.

Originally, there were two types of tertiary reserves provided by resources connected to the Elia grid:

- tertiary production reserve, i.e. injecting additional power into the grid (R3 production);
- tertiary offtake reserve, i.e. reducing the amount of power taken from the grid by the user.

Now Elia is using a new type of tertiary reserves, the R3 DP, in order to allow distributed energy resources ³ to participate in the ancillary services.

I.2. The dynamic profile provider: a new role

R3 DP allows for a lot of different types of participants to enter the ancillary services market. Grid users connected to the distribution grid as well as grid users connected to the transmission grid can participate, either through a third party who aggregates several grid users (the aggregator) or as grid user directly. Thus a new role of dynamic profile provider is created by signing the R3 DP-contract. This dynamic profile provider can be a grid user, an ARP, a supplier or a third-party provider into the ancillary services market.

Participation of delivery points connected to the distribution grid is subject to the contractual and technical prerequisites which may be set by the relevant distribution grid operator.

I.3. Reservation of capacity and volume of R3 DP

In order to guarantee a good regulation, Elia requires a certain capacity of tertiary reserves (production + dynamic profile) at all times. Therefore Elia contracts the total required capacity at different suppliers who must make this capacity available at all times (100% availability)⁴.

Elia will economically optimize the total cost of tertiary reserve per tariff period according to the modalities defined in the balancing rules. A minimum threshold for participation in peak/long off-peak or base is set each year. The candidates as dynamic profile providers must provide and be able to proof their unscheddable margin ⁵ for the various periods per delivery point.

¹ For more details see product sheet "Tertiary production reserve: a solution to major imbalances and congestion".

² Third-party service provider aggregating flexibility from various sources.

³ The distributed energy resources comprise generation, storage and demand response units connected to the distribution system.

⁴ The capacities that are contracted are split up per tariff period: peak/long off-peak/base. Peak hours: from 8h to 20h, Monday till Friday; Off-peak hours: from 20 h to 8h and from 8h to 20h during the weekend.

⁵ Unscheddable margin = Minimum amount of net active power offtake [MW] which cannot be curtailed (inflexible or unsheddable power) at the delivery point. Power Maximum = Maximum amount of net active power [MW] that can technically be injected at the Delivery Point.

I.4. Metering and settlement of the selected delivery point

R3 DP can be provided by different delivery points:

- Points with a valid and official AMR ⁶ meter (installed by the relevant distribution system operator or if applicable Elia);
- Points situated in a distribution grid with a submetering compliant to the contract;
- Points situated in a CDS grid (Closed Distribution System) with a meter used for settlement.

Before and during the R3 DP tendering procedure, the necessary analysis and studies are done to assess the technical feasibility and the grid impact of the changes in the profile of the concerned delivery points during the activation. This is in order to not endanger the grid stability and to avoid congestion and voltage problems.

Settlement is done based on the official, validated 15 min metering data. If the delivery points are situated in the distribution grid, the metering data will be provided by the local distribution system operator in an aggregated way per portfolio.

I.5. Activation of the R3 DP contracted volumes

The R3 DP contracted volumes are activated upwards: this means either an increase in production or a decrease in load to help balance the grid. The activation is "all or nothing": the complete contracted volume will always be activated.

The contracted volume must be fully activated within 15 minutes after the start of the activation.

The duration of the activation is limited by the following constraints:

- The activation is done per quarter hour;
- The **duration per activation** is limited to a **maximum of two hours**;
- Between the end of activation and the beginning of the next activation, there must always be a **minimum of 12 hours**.

The number of activation depends on the contractual period:

- The **number of activations** is limited to a maximum of **40** per year;
- The **number of activations** is limited to a maximum of **8** per month.

For the activation, Elia transmits a message from its control center to the participating dynamic profile provider's (grid users or aggregators), who must confirm with a "read receipt".

For the purpose of this communication, a reliable data communication must be established between Elia and the dynamic profile provider.

For settlement purposes, the dynamic profile provider has also to inform the system grid operator (distribution system operator or Elia) at the latest in D+1, which individual delivery points were activated.

II. Payment for the Dynamic Profile tertiary reserve

II.1. Remuneration for the contracted capacity

Elia has to make a payment (expressed in €/MW/hour of availability) to the dynamic profile provider providing the tertiary reserve. This payment, the size of which is specified in the contract, covers the entire contractual term. The fee is determined by the offer from the dynamic profile provider in the tendering process.

II.2. No remuneration for the activation of the R3 DP

R3 DP is a capacity only service from the dynamic profile provider. The corresponding energy is directly settled with the ARP at the relevant imbalance price. As a consequence there is no remuneration for activation.

II.3. Operations with an effect to the balancing perimeter: no correction

As a consequence of activation, the position of the ARP is changed with the effectively activated energy. The balancing perimeter of the ARP is not corrected with the effectively activated energy. Consequently, the corresponding energy provided to the system is directly settled with the ARP at the real-time price of energy at the moment of activation, i.e. the imbalance tariff.

⁶ Meter who is able to provide 15 min metering validated by distribution system operators or Elia.

The ARP-contract organizes the contractual consequences of the R3 DP's activation to the ARP:

- non-compensation for quarter-hourly imbalances of the ARP's balancing perimeter due to the activation of the R3 DP;
- specific information regarding the activated volumes provided in real time to the ARP when the R3 DP is activated;
- there is a ARP liability exemption for the imbalances caused by the activation of the R3 DP. Settlement of the ARP imbalance (positive or negative) is not considered as damage but as contractual obligation. ARP is thus not responsible for imbalance during the concerned quarter-hour(s) and uniquely resulting from the activation of the R3 DP.

The ARP is notified by Elia within 15 minutes after the start of the activation of the maximum amount of potentially activated power within its perimeter.

III. Legal and contractual basis

Volumes defined by Elia and approved by CREG

The content of the R3 DP contract is based on the stipulations of the federal Grid Code. Reasonable prices are one of these legal requirements. Every year, Elia sets a total volume for the R3 DP reserve. This volume must be approved by CREG.

European tender procedures

Elia concludes a General Framework Agreement (GFA) with suppliers of R3 DP that wants to participate in the tendering R3 DP.

The General Framework Agreement applies for 3 years and shall be signed again by all parties in case of important change.

Elia organise a European tendering for the needed volumes and procures the volume through tendering long-term (yearly) and short-term (monthly).

Only the parties with a signed General Framework Agreement can take part in the tendering procedure.

The selection of the dynamic profile providers is done according to the modalities defined in the balancing rules and based on an optimization to achieve total minimal cost of the tertiary reserves.

Tertiary reserve "Dynamic Profile" in 5 key points

- The R3 DP is a new type of tertiary reserves that allows distributed energy resources to participate in the ancillary services. Participation of delivery points connected to the distribution grid is subject to the contractual and technical prerequisites set by the relevant distribution grid operator and Elia.
- Different types of participants may offer this resource after having acquired the status of dynamic profile provider. The flexibility can also be aggregated by an aggregator from multiple energy sources to be offered to Elia.
- R3 DP requires 100% availability of the contracted power. There is a maximum duration of 2 hours.
- Because the R3 DP is a capacity-fee only product there is only a payment for provision of the reserve. There is no payment for activation of the reserve.
- The ARP's balancing perimeter is not corrected when R3 DP is activated but specific information is provided in real time to the ARP. There is an ARP liability exemption for the imbalances caused by the activation of the R3 DP.