



COMMISSION
DE RÉGULATION
DE L'ÉNERGIE

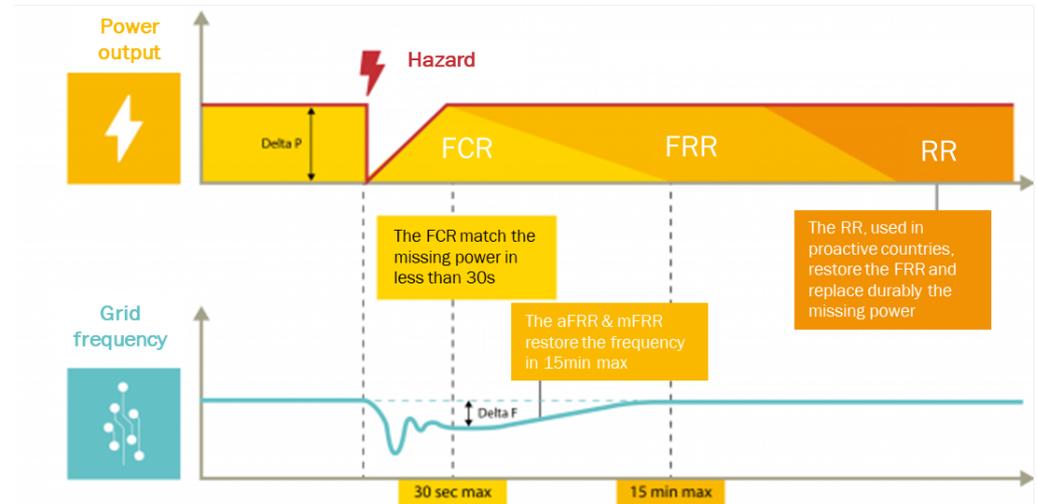
PRESENTATION

03/06/2021

**RES & Ancillary services : grid
stability**

ELECTRICITY BALANCING & ANCILLARY SERVICES

- EU TSOs have the responsibility to maintain the frequency of the grid around 50 Hz by balancing the injections and the withdrawals.
- To balance the grid, TSOs use balancing products offered by balancing service providers (BSPs) on the different balancing markets (FCR, aFRR, mFRR, RR)

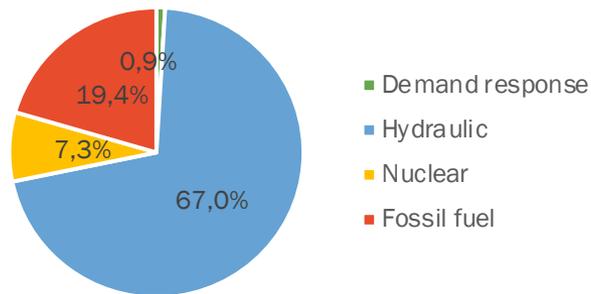


- A part of the ancillary services are contracted by the TSOs before real time to ensure to have at its disposal a sufficient capacity to balance the grid in case of an hazard, but BSPs can also offer “free” bids to the market.
- The activation of the balancing products shall be made according to a common merit order list in order to maximise the social welfare and to incentivise BSPs to offer bids at the correct prices.
- In a well functioning balancing markets, BSPs shall price their bids according to their marginal prices and their opportunity costs.

THE IMPACT OF RES ON THE ANCILLARY SERVICES

A diminution of upward balancing bids that needs to be replaced

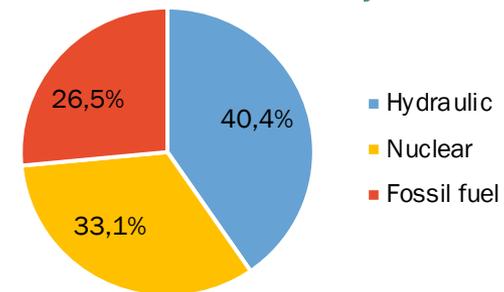
- Historically, the *upward balancing bids* are provided by *controllable powerplants*.
- *Renewable energy sources (RES)* cannot provide *similar services* at a reasonable opportunity cost as it would require to lose an important part of the potential electric production to provide upward balancing bids with RES.
- The *increase of RES in the electric production mix* requires to find *new sources of flexibility* to replace the loss of flexible generation.



Upward activated mFRR&RR bids (2018-2020)

An evolution needed for downward balancing bids

- Like upward balancing bids, downward balancing bids are historically provided by controllable powerplants, but unlike upward bids, RES can offer downward balancing bids at a reasonable opportunity cost.
- Although, there is no balancing bids from RES today (in France), as the current rules does not incentivise RES to participate to the balancing markets.
- In order to replace the loss of downward balancing bids from historical controllable powerplants, the participation of RES and of new sources of flexibility is needed.



Downward activated mFRR&RR bids (2018-2020)

- The increase of RES in the electric generation mix requires an evolution of the balancing market rules to allow the participation of new sources of flexibility and incentives RES to actively participate in the balancing markets.

RES PARTICIPATION IN DOWNWARD BALANCING MARKETS

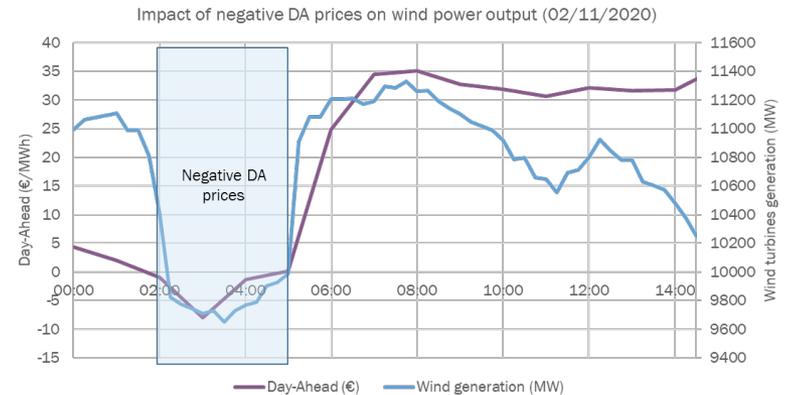
The participation of RES to the downward balancing markets should be fostered but will not be sufficient to compensate the loss of downward balancing bids.

Incentives RES to participate

- Historically, the subsidies have incentivised RES producers to produce as much energy as possible, whatever the needs of the markets.
- A first evolution have occurred in 2017 (in France) to take into account the increasing impact of RES on the electric markets and encourage RES generation units to stop producing when the price of the Day-Ahead market is negative.
- The increase of RES production also impact the availability of downward balancing bids for the TSOs that are provided by controllable powerplants replaced by RES. In order to ensure the security of the system and to incentivise RES or other sources of flexibility to participate in the downward balancing markets, RTE will contract a downward mFRR reserve from 2022.

Adapt the market rules

- To foster RES participation in downward balancing markets, the market rules are evolving to take into account RES specificities :
 - minimum bidding size of 10 MW on mFRR&RR markets is not adapted and will evolve;
 - dissymmetrical bidding on aFRR will be possible at the end of the year;
 - methods to control the activations are being tested;
 - the contracting period and the delay between contracts and delivery is being reduced on all the markets;
 - other adaptations, like the use of automatic controllers from congestion management are being analysed.



Need for other sources of flexibility

- RES cannot replace the loss of downward balancing bids from controllable powerplants on its own. Indeed, to increase the share of RES generation in the electric mix, it will be needed to maximise RES generation and reconcile electric withdrawals with RES generation curves that is not controllable.
- Therefore, other type of flexibility will have to participate to the downward balancing markets to compensate the loss of bids from the powerplants.

NEW SOURCES OF FLEXIBILITY FOR BALANCING MARKETS

The participation of new sources of flexibility to the balancing markets is necessary to safely increase RES electric generation share but barriers needs to be removed.

- **The participation of new sources of flexibility to the balancing markets is necessary** to increase the share of RES generation while ensuring a safe operation of the electric grid by the TSOs.
 - *Demand response (DR) and new storage facilities* are the two main possible substitutes to the decrease of balancing bids from electric powerplants.
- Those flexibilities can already participate to the balancing markets but **barriers still needs to be removed** to access their full potential and increase their participation:
 - Some *markets are still inaccessible to demand responses*;
 - a lot of *barriers limit the participation of demand response and storage to the balancing markets* and are being adapted:
 - *minimum bidding size on mFRR&RR (10 MW) is not adapted and will be lowered to 1 MW like other markets in the upcoming years*
 - *the rules of the different balancing markets are being adapted to the specificities of storage to allow storage facilities to offer their whole flexibility potential to the markets*;
 - *the rules for aggregated offers are also being adapted to the need of new decentralized flexibilities*;
 - *methods used to control DR activation have been largely improved but still needs adaptation to increase precision and facilitate DR participation*;
 - *dissymmetrical bidding will be possible at the end of the year on the aFRR market, facilitating DR participation.*
 - The *balancing markets need are evolving quickly* in line with the increase of RES generation and the arrival of new type of flexibility to the markets. **CRE is fully mobilised**, in cooperation with all the parties involved, **to implement the changes.**