April 2022

Market Design

The market design of electricity must be completed with the introduction of long-term price signals for delivering an adequate level of investment in RES and security of supply. The market design been implemented since mid 2000s has focused on the integration of day-ahead, intraday and balancing. This focus has brought increased efficiency i.e., reduction of short-term dispatching costs: in each moment the price of electricity expresses the minimum short-term marginal cost (fuel, variable O&M and CO2 costs) to cover the demand. At the same time, this mechanism does not provide strong and stable investment signals for intermittent generation (i.e. PV and wind).

The decarbonization of the electricity sector requires that short-term energy markets, which provide competition-in-the-market, be complemented with long-term price signals, which provide competition-for-the-market. Competition-for-the-market means market instruments that are able to select the projects with the minimum long term price signals, i.e. the lowest full cost of generation, and remunerate them at lowest price.

Considering that in the retail market are present different types of customers, retailers, generators and DSR providers in the European market, a mix of different solutions can be introduced at European level.

On the one hand, some industrial customers can use **PPAs** with RES generators. Their deployment at European level can be facilitated thanks to:

1. Reduced cost of guarantees through state and European resources (i.e. EIB or EIF) and/or the introduction of a Central Counter Part
2. Contract standardization
3. Aggregation of demand and supply of PPAs
4. Exchange of PPAs
5. Improvements in GO and sustainability criteria

On the other hand, some long-term renewable energy could be procured through **RES auctions**. Compared to the current ones, RES auction could be also improved in order to facilitate the deployment of RES and storage solutions in which the price received is a function of system demand.

Finally, long-term price signals could be developed in a **fully decentralized way,** introducing obligations on suppliers or final customers to satisfy their demand through an array of long-term solutions: decentralized generation, PPAs and auctions.

The presence of long-term price signals allows a two-stage market. In the first stage, the projects with lower total costs are selected thanks to auctions and decentralized mechanisms (e.g. PPAs). In the second stage, Day-ahead, intraday and balancing markets continue selecting available resource with the lower cost, ensuring an efficient dispatch.

The two-stage market also allow the benefit of system marginal prices and pay as bid mechanisms. The final remuneration of a power plant is based on the result of the long-term price instrument (for example the strike price of the auction), the dispatching is based on system marginal price, that allows a level playing field among all market participants (each participant bids its true cost). The result is a system that avoids windfall profits and ensure investment predictability.