

# DISTRIBUTED FLEXIBILITY AND THE VALUE OF TSO/DSO COOPERATION

## FOSTERING ACTIVE CUSTOMER PARTICIPATION TO VALUE THEIR SERVICES ON THE MARKET – AN ENTSO-E POSITION

POLICY PAPER DECEMBER 2017



With the constant increase of distributed renewable generation and storage, and the expected rise of active customers, engaging in demand response, a key question must be addressed: how to integrate the flexibility services provided by these new assets and actors into the internal energy market? This position paper summarises ENTSO-E's key recommendations. TSOs' objective is not only to enhance system security for which they're responsible, but also to ensure that the value for end customers and distributed flexibility resources (DFR) providers is maximised.

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## INTEGRATION OF DISTRIBUTED FLEXIBILITY RESOURCES

DFR should be used – depending on time and location – where they provide the most value to the whole electricity system: whether it be in portfolio optimisation and trading for market parties at day-ahead and intra-day markets, in congestion management for solving transmission and distribution grid issues, or as balancing resources for TSOs to maintain power system security.

It is thus fundamental to develop a coherent and user-friendly overarching market design, ensuring seamless coordination between different market processes (from day-ahead and intra-day markets to balancing and congestion management). This is key to delivering at all time frames an optimal use of resources, maximum value for consumers, and robust security of supply. Furthermore, the market design should strive to minimise the number of different bidding processes and non-coordinated products and to achieve maximum liquidity, considering system requirements, technical capabilities and commercial interest of the providers.

DSOs and TSOs need to coordinate closely and exchange the necessary information for operating their network securely and ensuring market efficiency. Such coordination will, among others, avoid double or counter activation of the same service at the same time.

Local and national pilot projects are good steps forward as they allow testing different strategies within a fast-evolving framework. Nevertheless, economic efficiency principles must be considered at an early stage. It must also be ensured that solutions are consistent with EU market design principles. DFR integration should not lead to market fragmentation nor competition distortion, but should ensure neutrality, confidentiality and transparency. In particular, effective DSO unbundling is key to ensure neutral market facilitation and fair competition in procurement of flexibility services.

ENTSO-E highlights that the implementation and specific design questions of such a flexibility marketplace are up to national decisions. At the same time, ENTSO-E recommends defining and agreeing overarching market design principles at the EU level, ensuring a direct relation between any buyer and provider of a product, and avoiding a fragmentation of the market depending on voltage level. In that sense, DFR providers should be able to interact both with DSOs and TSOs<sup>1</sup>, depending on whom the service is sold. National implementations in which the flexibility of DFR providers can only be activated via their local connecting DSO should be avoided (a scheme often referred to as “cascading principle”), as it would inevitably fragment liquidity and prevent system wide aggregation in the balancing process.

**In the interest of both end consumers and operational needs, it is fundamental to ensure a coherent and integrated wholesale and retail market building on the IEM, and allow further cross-border opportunities.**

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<sup>1</sup> With regards to TSOs' access to data related to users connected to the distribution grid, different implementation options exist: via the respective aggregator or balancing service provider, via the connecting DSOs, or directly via the grid user for specific needs. See [www.entsoe.eu/Documents/Publications/Position%20papers%20and%20reports/entsoe\\_TSO-DSO\\_DMR\\_web.pdf](http://www.entsoe.eu/Documents/Publications/Position%20papers%20and%20reports/entsoe_TSO-DSO_DMR_web.pdf), TSO – DSO data management report, July 2016.

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## KEY RECOMMENDATIONS

We further detail our key recommendations for the integration of DFR in the market as follows with a focus on TSO-DSO cooperation:

### A SOUND DEFINITION OF PRODUCTS TO SUIT THE SYSTEM AND GRID NEEDS

- » DSOs and TSOs need to assess the potential needs for DFR in their network for congestion management. Such needs should be compared with existing and foreseeable capacities of the potential flexibility providers and defined clearly to attract the interest of all relevant market parties.
- » Suitable products should be defined jointly by DSOs and TSOs before NRA approval, in order to facilitate standardisation for efficiency purposes. A certain degree of flexibility may be needed to allow for more local specificities or certain technical parameters in implementation. The number of products needs however to be limited to minimise negative impacts on market liquidity.

### COORDINATION OF PROCESSES AND INFORMATION EXCHANGE BY TSOs AND DSOs IS KEY TO GUARANTEEING OPTIMAL USE OF RESOURCES AND SYSTEM SECURITY

- » Activation of DFR within the balancing or congestion management process shall not negatively impact the other processes. Therefore, TSOs and DSOs shall be able to set limitations or activate DFR to solve congestions considering the geographical location of the assets in a bid. Also, the availability of contracted balancing reserves to TSOs must not be endangered.
- » Coordination between System Operators on activation of flexibility providers' bids and possible limitations is essential especially close to real time.

### FLEXIBILITY SERVICES TO BE USED WHERE THEY GENERATE THE HIGHEST VALUE

- » Flexibility providers should be able to offer their flexibility by placing their bids in such a way that they can be activated where they have the highest value to them.
- » The market design should minimise the number of different bidding processes to answer the various needs of system operators. For instance, all congestion management needs for the TSO network and DSO network should preferably be fulfilled by a common bid submission process, which could possibly be merged with the bidding processes used for balancing.

### A SINGLE MARKETPLACE IS A POSSIBLE SOLUTION TO ADDRESS THESE CHALLENGES

- » A single marketplace at national level<sup>1)</sup> for collecting and activating distributed flexibilities may be a practical answer to different challenges: ensuring liquidity, building a level playing field for different service providers in a user-friendly way and allowing the coordination of different market processes such as balancing and congestion management.
- » It allows TSOs and DSOs to access all bids and to mutually coordinate activations.
- » It simplifies access to all markets for DFR and ensures that DFR providers can participate in all processes collecting the maximum value for their flexibility.

**Based on these principles, ENTSO-E recommends assessing different options and benchmarking them against each other, as a basis for agreeing on a future market design for DFR. ENTSO-E is looking forward to closely cooperate on this with DSOs and stakeholders.**

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<sup>1</sup> Possibly evolving even into regional solutions in the future



## ANY QUESTION?

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