

DEBUNKING MYTHS

ABOUT DEMAND RESPONSE AGGREGATION

Myth 1

AGGREGATORS DO NOT SELL ANY ENERGY; THEY SELL FLEXIBILITY!

Traditionally, power markets have featured rigid demand, which is unresponsive to price changes. Today, with an increasing share of intermittent renewable energy, demand side flexibility provided by demand response (DR) helps the system to be more efficient. However, the **link between flexibility on one side and energy generation and supply on the other is often overlooked in the DR debate**. While DR provides flexibility to the system, its core function is to improve the matching of demand and supply in electricity markets. This holds true in the case of DR offered by independent aggregators: it effectively ensures that electricity is delivered to a third party customer by reducing demand of the customer contracted by the aggregator. However, its effectiveness critically depends on the ability of the suppliers to stick to the amount of electricity that they scheduled and committed to provide on the basis of the forecasted demand of their consumers. This means that, effectively, **aggregators sell electricity that is procured in the first place by suppliers**. Should suppliers decide to adapt their supply in real-time, the aggregator would have nothing to trade – and the DR potential would be hampered.



Aggregators should compensate suppliers for the related electricity sourcing costs because ultimately they sell this electricity in the market.

Myth 2

SUPPLIERS HAVE TO DEAL WITH CONSUMPTION CHANGES FROM THEIR CONSUMERS; DR IS NOT DIFFERENT

As discussed in Myth 1, should suppliers decide to adapt their supply in real-time, the aggregator will have nothing to trade – and the DR potential will be hampered. In this sense DR is fundamentally different from customers' random consumption changes.

To ensure efficient supply and system stability, suppliers forecast beforehand the electricity demand for their complete customer portfolio and source electricity accordingly. Deviations from the demand forecast represent additional risks and potentially additional costs in terms of balancing power. Uncoordinated activation of DR by independent aggregators may lead to forecast errors resulting in potential costs. Suppliers would need to include these additional risks in their price calculation.



The impact of DR differs significantly from normal changes in customers' consumption. Adequate market rules are needed to correctly allocate the imbalances between aggregator and supplier and address the cost of energy sourced by suppliers.

Myth 3

IF AGGREGATORS MUST PAY FOR THE ENERGY THEY WILL NOT HAVE A BUSINESS MODEL, THE RETAIL MARKET WILL BE LESS COMPETITIVE; AND CONSUMERS WILL NOT BENEFIT FROM ADDITIONAL SERVICES

For DR to be beneficial for the power system, the gains associated with its activation must be higher than the actual costs – otherwise, DR creates an inefficiency in the system. As such there is no doubt that DR activation with compensation makes the aggregator's business model less attractive, but a flawed business model based on free-riding would lead to increased costs for the system. Energy regulators represented by ACER & CEER explicitly recognise that *'payment for resold energy is necessary to serve system efficiency and ultimately to keep consumer bills down'*.¹

Compensation should allow suppliers to recover their sourcing costs, determined by market prices. DR activation will be efficient only if prices in the intraday or balancing market exceed sourcing costs as well as potential balancing additional costs. Given the increasing share of intermittent renewable energy and the associated uncertainty of generation, it is a fair assumption that both intraday and balancing markets will increase in importance, and that price spreads will be high enough to guarantee efficient DR activation.



An efficient DR framework should properly allocate imbalances and ensure compensation for the sourced energy. In this framework, independent aggregators have a sound business model activating DR when it is needed in the system.

¹ see their Whitepaper on 'Facilitating flexibility' from May 2017

Myth 4

AS AGGREGATORS WILL CONTRIBUTE TO LOWERING THE PRICE IN THE WHOLESALE MARKET, THE SOURCING COSTS OF SUPPLIERS WILL BE LOWER AS WELL; SO THEY WILL DIRECTLY BENEFIT. THEY SHOULD NOT BE PAID FOR THE SOURCED ENERGY ON TOP OF IT. ²

At its core, DR allows for a demand reduction of consumers when prices are high – and thus in principle, DR should contribute to lowering prices in electricity wholesale markets. To what extent this effect will materialize in practice and in which markets depends on various factors: only if the (temporary) demand reduction takes effect with sufficient anticipation, it will have an impact on the day-ahead market. Generally, it can be assumed that its impact will be stronger in the intraday and balancing markets than in day-ahead markets. Those suppliers that procure energy in the day-ahead-market or under bilateral contracts are thus less likely to profit from price effects induced by DR.

Importantly, though, any price competitive market generally benefits every market participant and should not lead to special privileges to certain market actors. In addition, the inevitable distortion of the level playing field that ensues from uncompensated DR will eventually lead to a market consolidation: suppliers with too much exposure to aggregator activities will fail or merge with suppliers less affected by aggregators – e.g. suppliers in markets with compensation (as is conceivable under different regimes in EU Member States). In the long-run, markets with a high concentration of suppliers are less likely to serve their customers well. Usually, price levels rise above their competitive level and quality of supply suffers. In contrast, in a model with compensation of suppliers, the efficiency gains of DR will most likely benefit consumers directly: efficient DR activation will prevail and as compensation does not affect price formation, potential price reductions in wholesale markets can take effect.



Demand response may bring price decreases to the market, as any other competitive technology. In order to avoid an unequal exposure of suppliers – those "with" and "without" aggregators being active on their portfolio's consumers – to the potential impact of DR aggregation, it is important to establish a sound framework including compensation of sourcing costs and fair allocation of imbalances.

² As argued e.g. by the Regulatory assistance project in their paper "Benefiting customers while compensating suppliers"