

Power Responsive

Snapshot on shaping future market for demand side flexibility

This snapshot reflects a wide-ranging discussion on shaping future markets for demand side flexibility at the Power Responsive steering group meeting on 4 July 2017, held under the Chatham House rule. It considers the interplays between current markets for flexibility beyond Balancing Services, taking into account feedback from the Power Responsive Conference, and the views of customers and providers.

Existing Markets & Services

Asheya Patten (National Grid) gave an overview of existing markets and services. The System Needs and Products Strategy document, gives a future view on the needs for the system and services required, setting out some potential options to simplify and standardise Balancing Services. But there are other markets and ways of making money. The role of the Enhanced System Operator will include understanding how its actions and the actions of other actors impact on different markets.

The Balancing Mechanism (BM), Ancillary Services, Wholesale Market and Capacity Market (CM) all affect one another and the economics of providers. The markets have become decoupled. There is a question as to how they might be linked / reconfigured in future to deliver stronger investment signals in a more flexible, decentralised energy system where, rather than a few big players, there are a multitude of parties and new technologies.

There are also different and new market opportunities, in particular as Distribution Network Operators (DNOs) contract for local network services. Options include:

- Wholesale markets with nodal pricing within a distribution system,
- Dynamic distribution use of system (DUOS) charging,
- Distribution system balancing platforms,
- Local energy markets.

Balancing Mechanism

The BM allows the System Operator (SO) to balance supply and demand within gate closure. BM parties provide bid & offer prices, the SO chooses most economic solution to manage residual balancing. The BM facilitates access to mandatory frequency response and obligatory reactive power. There is some question as to whether gate closure is at the right point.

The number of BM participants is reducing. BEIS is looking at options to widen access to the BM – including the role of aggregators and how to encourage end consumer engagement. There are various proposals for addressing spill and developing a BM Lite option. There could be significant opportunity for flexibility through an opened BM. But participation is difficult for smaller parties. Consideration is needed on the benefits and risks of non-locational Balancing Mechanism units (BMUs).

Wholesale Market

Most trading of electricity is over the counter, or via power exchanges (10-15% traded volume each month). Ofgem's secure and promote initiative has increased liquidity, making it easier for smaller players to trade. But baseload products dominate and most trading happens in market-making windows. Should there be further obligations on parties to balance their position; and how could peer-to-peer trading affect the market (e.g. Blockchain)?

Capacity Market (CM)

The CM is intended to drive investment with a cleared auction price to deliver capacity 1 to 4 years ahead. Parties receiving renewable subsidies are precluded. Currently, it tends to provide a long-term signal with shorter-term signals from the Wholesale Market and Balancing Services. There are challenges with low levels of competition in Demand Side Response (DSR) auctions. It was suggested that the CM was designed with power station thinking, and little understanding of aggregation, whereas STOR has progressively become more and more suitable for aggregators.

There was a sense that although the CM is supposed to be ‘technology agnostic’ it is not because contract lengths, metering arrangements and baselines vary for different technologies. Some felt 15 year contracts are too long and referred to 1-year contracts in the US. Storage operators tend to want longer contracts and DSR providers look for shorter contracts, with everyone treated the same.

The System Needs and Products Strategy consultation is considering contract length for Balancing Services, with a straw poll at the conference showing an almost equal split between people wanting: long-term; short-term; or a mix of contract lengths. Long-term contracts can lock out innovation, and transfer risk to customers. It was noted that there have been European developments for pan-European day ahead and within day balancing tools and balancing products (Project TERRE), with the potential move toward shorter term markets.

Code Modifications

A number of relevant code modifications were highlighted:

- **P344** – aligns the Balancing and Settlement Code (BSC) with the European Balancing Project TERRE (Trans European Replacement Reserves Exchange). Offering a degree of BM access for customers.
- **P355** – introduces BM Lite to allow smaller generators to offer energy to the System Operator for energy balancing, in competition with the larger BM Units already in the market.
- **P354** – considers the issue of **spill and non-spill**. Demand side response is able to access some revenue on top of STOR prices. Power stations access special interest zone.

Exelon is looking at ways of communicating code modifications more clearly, and simply to customers. National Grid is also considering how to explain them and their interactions in lay terms.

Regional & Local Network Services

There will potentially be a shift to regional markets, with the transformation of DNO to DSO (Distribution System Operator) and a different way for SOs to interact. These new market arrangements will need to be tested (e.g. regional market prices, platforms). There was some question as to how responsive customers will be to more granular and localised price signals. The Energy Networks Association (ENA) is undertaking work to inform DNO pathways.

Electric vehicles will have an important role in local markets e.g. electric charging networks and electrifying taxi fleets. Virtual communities could develop and interact with markets (e.g. BMW drivers). Customer and community groups may become more active.

DNOs currently offer “alternative” connections (e.g. for distributed generation and storage) – which means a quicker and/or cheaper connection, by agreeing to reduce capacity under certain conditions. DNOs have various different connection arrangements, and approaches to local network services. Customers expressed concern about the layering of additional mechanisms, with added complexity, and how distribution level balancing platforms would interface with the BM.

Route to Market for Customers

It was suggested that perhaps schemes could be designed starting from the customer perspective, where customers say what assets they have and what flexibility they can offer, through a platform. Markets will be driven by market actor need, but they could be designed with smaller players and customers in mind.

There is a risk for customers being sold a ‘pot of gold.’ With lots of new actors entering the market; the value for flexibility may not stretch far. Unrealistic propositions are sometimes made to customers from (certain) aggregators. A few careless or dishonest parties can damage trust in the industry as a whole. It is difficult for customers and investors to determine which propositions are credible. Investor expectations may also be unrealistic e.g. calling for long-term contracts and 10% rate of return.

Storage providers spend a lot of time undertaking due diligence and reviewing offers/Power Purchase Agreements, and they are seeing a big difference in offers made. The Crown Commercial Service (CCS) has a new framework for DSR, to support public sector access to markets, working with six aggregators. National Grid’s Business Development team is tracking people entering the market and the points where some drop out.

Industry-led Code of Conduct for Aggregators

There was support for the work of the Association for Decentralised Energy (ADE) to develop a voluntary, industry-led code of conduct for aggregators. This will give assurance that ethical business standards are adhered to; lets customers see which providers are meeting standards; and ensures bids/proposals include common elements so different products can be compared.

The code addresses five areas: sales and marketing; proposals and pre-contractual information; contract; technical due diligence and site visit; and complaints. It will be governed and enforced through a process of: 1. adjudication, 2. enforcement and 3. scheme removal. It has been developed through a committee of aggregators, suppliers, industrial customers and their representatives. Ofgem and BEIS attended as observers. It will be published shortly, and open to consultation.

Feedback from the conference focused on the importance of data security and protections, and ensuring the code has 'teeth'. There was also discussion about whether it is better to have a code that is like 'Trip Advisor' which includes all aggregators – with user ratings to see which are considered better than others, or to take parties off the list/code completely if they are in breach – to maintain quality.

Conclusion & next steps

Flexibility means different things for different players. There are large numbers of smaller players, asking for simplicity. But the definition of simplicity is important. Einstein said "everything should be made as simple as possible, but no simpler". We need to make markets sophisticatedly simple.

This discussion focused on the markets we have today and how they might evolve, but what might forward-looking markets look like – for energy, capacity, balancing and flexibility? Will markets remain separate or will they come together?

This discussion will continue during Year 3 of Power Responsive, with the anticipated BEIS & Ofgem Smart System's Plan and National Grid's upcoming Product Strategy, which will consider what happens in adjacent markets.

Sustainability First
5 July 2017