

Notes from BEIS & Ofgem workshop: Facilitating the deployment of electricity storage at every scale

A summary of discussions from a key BEIS and Ofgem workshop. Produced for members of the REA's Energy Storage, Solar, and Large-Scale Power & Markets Groups

Final edition, as of 22 May 2020. All comments have been anonymised.

Background to the briefing

This workshop was held virtually on 14 May 2020. Attendees were invited by BEIS and participated anonymously, but came from across the sector.

The REA's objective with these notes is to update members on the status of various BEIS (Department for Business, Energy and Industrial Strategy) and Ofgem workstreams, and to provide background as to the current policies and debates arising in the sector.

Introduction discussion

This meeting focused on regulatory barriers to facilitating electricity storage deployment rather than market flexibility. Rather than going into detail on current or proposed policies, the purpose of the meeting was to gather stakeholder's views about barriers and gaps in current policies, and use insights to continuously assess whether the approach is working or whether it needs adaptation to get more flexibility coming forward.

BEIS want to set out a framework for protecting consumers and driving consumption. They stressed that they recognize that aggregators are also important but want to make sure consumers are protected. BEIS will be inviting people to a workshop on aggregation soon.

BEIS is also keen to identify any technical barriers to demand side response.

Pan-storage discussion

The wider energy system

One popular point was the request that policymakers look at the energy system as a whole, rather than focusing only on electricity storage. The participant noted that as transport, heat and power become more integrated, each with storage capabilities that could support or act against the wider interest, it is essential to form a whole-systems approach now. This view gained a lot of support from other participants including those in the academic/non-profit group and supplier/aggregator group, for instance one person noting that paying for a storage asset in a badly insulated home is not economical.

Current policies

There was also some criticism of current policies, especially of the reformed TRC (Targeted Charging Review) and CLASS (Customer Load Active System Services). One participant argued that the reformed TCR discourages investment in urgently required flexibility, pointing out that 'homes and businesses which have taken steps to install on-site renewables and smart devices such as storage will face higher costs to use the grid network'. The participant, from the supplier/aggregator category, said this will

increase costs for generators by around £5/MWh, while premises that have not installed renewables will not have an increase in costs. Other participants agreed, with one person saying that 'as long as the UK's regulatory regime is in a state of flux, large scale investment is and will be delayed', and 'for example, it is not possible to fully understand the impact of the TCR proposals without knowing the overall effect of charging reforms and where they will ultimately end up'. In short, 'Government should commit to introducing charging reforms in parallel, or providing a much clearer indication of what the overall situation is likely to be in the future'. This view was supported by others who asked for clarity on future costs and opportunities.

Another supplier/aggregator stated that the proposed position on CLASS could undermine storage business cases, which was widely agreed with by others. One person claimed that it would undermine investor confidence and represent a market distortion and a departure from competition principles.

Additional points

Further points raised included a suggestion that the Government needs to look more closely at ethics and human rights in the supply chain, as this will become more of a concern in the future, that enhancing the NOA (Network Options Assessment) approach to improve flexibility needs to be accelerated with improvements to network charging signals, and the point that the half hourly settlement will be vital for domestic storage and delays to this market reform will reduce take-up of relevant tariffs and thereby impact negatively on the take-up of storage.

Storage at a Domestic Level discussion

Metering

There was some debate about how important FFR (Firm Frequency Response) costs were. One person argued that domestic storage will be unable to compete if FFR costs are too high, with several participants in agreement. One said 'there is currently no economic argument to buy a domestic battery even with flexibility income from FFR. Need to consider changes to VAT for retrofit batteries especially'. However, a couple of participants disagreed and said that domestic storage can and does take part in FFR.

There was also some debate about the current charging structure – with some saying that it creates distortions and others in disagreement if its smart-based because AI and price predictive analysis can help with balancing. Another stated that 'the risk exists only if the network charging is not cost reflective. Batteries can support distributional issues if given the right issues'. It was also noted that 'domestic BTM (behind the meter) storage still faces higher costs', and that 'metering costs need to be proportionate for domestic batteries'.

Business Models and Equality of Access

It was also noted that there are distributional issues around equality of access to energy storage – particularly when groups are excluded eg by living in flats with inadequate space or PRS (Private Rented Sector). Remote ownership or access to storage was floated as a solution. Another participant suggested that social benefit schemes such as ECO (Energy Company Obligation) and WHD (Warm Home Discount) should be used to help 'capital poor' consumers to access value. Another argued that low cost commercial business models are already in effect.

There were a range of views about the suitability of current business models. Some argued that storage is some way off being at the level of uptake required for Net Zero and therefore 'more compelling' business cases are needed. One said that a similar incentive is needed for energy storage as existed for solar under FiT. While another said that the tech is commercially viable now for consumers, but more certainty is needed about the return of investment. It was re-emphasized by others that clarity on the future of policy is needed to encourage investor confidence.

Half Hourly Settlement

A few points were made about the critical importance of the HHS in incentivising the uptake of storage beyond early adopters and that this should be coupled with smart meter uptake. It was argued by one participant that incentives for domestic storage should avoid outcomes like those of the FiT (Feed-in Tariff) scheme where a small proportion of the population were paid above the going rate, paid for by increases to other consumers. There was some disagreement about HHS being critical, however. One supplier/aggregator said it is a question for some suppliers about whether it is worth their while setting up an elective HHS if a market-wide one is coming. The same person said market-wide HHS should be mandatory.

Fuel Poverty and Consumer Protection

Concerns were raised that HHS could create risks of strong losers and winners, due to some consumers being unable to deploy storage. Not everyone agreed with this, but there was some sense that consumers unable to access storage should not pay for it. One supplier said that although heat batteries are overlooked, they are a key part of tackling fuel poverty and of decarbonisation so should be a part of the future. One person suggested that options such as installing solar on tower blocks and at ground level should be explored, or SAP (Standard Assessment Procedure) points being granted to tower blocks.

There was consensus that consumer redress schemes need to be implemented and that there are currently 'cowboys' in the market selling flexibility systems on the basis that it will provide greater returns than is realistically possible. The risk of mis-selling grows as a wider range of complex products comes on to the market.

ESO FFR reforms

There was consensus that the planned ESO FFR reforms need to come through and go live to the market as soon as possible as this is discouraging growth.

Integrated Approach

It was also argued that 'sufficient signals through network charges is crucial, as an alternative route to flexibility value' and that it's unlikely that Live Access and Forward-looking SCR (Significant Code Review) will deliver these signals.

In addition, one participant argued that SEG (Smart Export Guarantee) should encourage payments for export from onsite generation and storage, which can also charge from the grid if needed.

Another participant saw the lack of cohesion between different renewables incentives schemes as an issue. The storage, heat, solar and EV schemes should be tied together in a way that makes it easy for the domestic consumer to understand, in their view. The same participant also said that the 'platforms

developed to help consumers manage these are extremely poor', and that these need to be improved for consumers to realise the value. This received a lot of support from other participants.

Storage at a commercial/industrial level discussion

Investment problems due to Coronavirus

There was consensus that there is a significant risk of investments slipping down the priority list with cash flow problems facing most industries, unless there is a green recovery programme. Generators argued that for the most part, customers are willing to move to green energy, but it needs to be easy for them to do so or they will not take it up and payback time needs to be understandable within the same realm as non-energy business terminology.

Project CLASS

Several participants commented to the effect that the DNO (Distribution Network Operator) bidding in competitive markets displaces battery assets on price and undermining market functions, which puts off existing asset owners and aggregators to invest more to satisfy new ESO FFR services, when project CLASS undermines expected returns. It was thought that there are clear and hidden costs of CLASS, and argued by one person that there is a risk of anti-competitive conduct in CLASS that could 'deter new market entry' and increase risks to existing investments. It was also argued that CLASS, along with new FFR services, could suppress the need for ancillary services downstream and this could result in storage assets becoming redundant.

Generation License removal and BtM assets

Two participants felt that the Generation License for removal of FCL's (Final Consumption Levy) does not help BtM assets at all, as they still pay levies for efficiency losses and energy exported, and although P395 might help this the only present solution is standalone assets.

Business rates and BtM assets

It was also pointed out by a range of participants that business rates are high for BtM assets because they do not have the same exemption that front-of-meter assets. One person suggested that business rates should consider energy storage in a 'more complete manner'.

Large-scale/longer duration storage discussion

Incentivising investment and APEX vs. Forecast revenue

The main focus of this discussion was on incentivising investment. There was agreement that rather than focussing on high upfront costs as an issue for this part of the sector, the main barrier to investment is capital expenditure vs. the forecast revenue streams. One person noted that in America long-term storage is being deployed through long-term contracts at a good price for asset-owners, considering the value given and the role played in retiring thermal plants. The same person said that the UK's Capacity Market and focus on short-term flexibility doesn't facilitate the growth of this sector. Several said that a de-risking mechanism would be useful. There was consensus that more clarity around the future of investments and long-term contracts would improve investor certainty. However, one person noted that there also needs to be a floor and cap to RoR.

Another participant also suggested that the most recent modelling on future demand would be useful to encouraging investment, and said that Contract for Difference-type investments would be very useful in this area. This was echoed by two other participants, who highlighted that other young technologies have benefitted from CfD-type agreements and that battery investors should also be given this kind of security. Storage at Scale competitions would also 'overcome the barrier to commercialization' and Capacity Market reform would also help, as would a clearer definition of what classes as long-term storage. More than one person said that the market in California is very well-developed and should be used as an example from which to draw ideas.

There was also a concern that short and medium term storage impedes the development of a viable business model for long-term storage. Clarity on how much long duration storage will be needed in the future would also be useful.

The Cap and Floor Regime

Some thought that the Cap and Floor regime which supports the development of interconnection through a 25-year contract should be expanded to include large scale storage that have a similar high capital investment profile. Another person noted that pumped storage hydro projects could benefit from a cap and floor regime because construction risks would sit with the developer rather than final customers, the cost of capital would be minimised, consumers would be protected by the cap, and the upper and lower price bands could be considered when estimating revenue. Additionally, as large-scale projects take a long time to develop and the shape of the market is difficult to predict, it would provide security.

Pumped Storage

A debate happened around pumped storage. Most thought that the market needs to move away from favouring pumped storage to encourage growth of other kinds, noting that different BM arrangements for pumped storage means that the playing field is not level. One person criticised bilateral spin generation contracts, saying that there is no transparency around these, and that National Grid spin contracts should include large scale batteries to encourage investment.

However, another person disagreed with the notion that market arrangements currently favour pumped storage, saying that no new pumped storage capacity has been delivered in recent years. 'while investment in other storage types has increased substantially'.

Additional Comments discussion

There were additional comments on a range of topics, including about the DNO connection costs and the role of local authorities in deploying storage.

A key theme from this section however, was the environmental affects of the storage supply chain and of the Capacity Market rules. One participant pointed out that a current flaw in Capacity Market rules is the ability for European generators to feed in coal-based electricity into the grid, bringing into question claims that the UK is close to achieving coal-free generation. Others emphasized the need to ensure that production and disposal of energy storage needs to be regulated and monitored to ensure the best environmental outcomes. Issues raised included the need to create clear guidelines for decommissioning and disposal and a set of actions for breaches such as fly tipping, more

discussion around emissions brought in via international supply chains, and a drive to continue developing better technologies.

Another theme that emerged was a desire for more clarity around the ENA DNO work on flexibility and queue management. At least one participant described a need for developers to be able to understand the DNO's wider connection needs.

A couple of participants also asked when Ofgem's response to the storage definition consultation would be published. It is likely to be published within the next few weeks.

Conclusion

There is broad consensus that greater clarity on the future of demand, regulations and government incentives is required. Although there are areas of disagreement within the energy storage industry as a whole, there is universal consensus that encouraging investment and a wider uptake will require more certainty about what the market will look like in the coming years. There is also concern that some programmes, such as CLASS, are actually impeding investment in storage in their current form. Some participants would like to see reform of the Capacity Market and CfD auctions. There is a clear need for definitions of how a technology is classified, an integrated approach to development and accessible language around domestic storage.