Tesla response to Ofgem Consultation – Enabling the competitive deployment of storage in a flexible energy system: changes to the electricity distribution licence

27th November 2017

Submitted by Tesla

While Tesla is neither a storage operator nor a DNO, we welcome the opportunity to respond to this consultation on changes to the electricity distribution licence. We have responded to those questions where we consider ourselves able to add most value while setting out our overall thoughts on the subject up-front.

BACKGROUND

Tesla has installed its stationary storage lithium ion battery system, Powerpack, in multiple countries across multiple continents. As such, we have seen Powerpack perform different services based upon the local needs of the energy network, and we have seen storage emerge as a cost-effective and reliable alternative to grid infrastructure upgrades that can lower the overall system cost.

Tesla agrees with the fundamental principle that ancillary services and other balancing mechanisms should be procured from a competitive marketplace as a commercial service. This stimulates competition, investment and ultimately ensures value for money for the end-user. Based on the current suite of balancing services offered by NGET, Tesla would agree that DNO participation could risk the competitive landscape and jeopardize investor confidence.

Tesla would also advise that storage is not 'generation', despite Ofgem's plans to include it under the generation license. In many parts of the world, storage is a fundamental part of the network, operating as a cheaper alternative to building traditional grid infrastructure.

With the transition to renewable energy and more distributed generation, TSOs and DSOs are facing unprecedented grid development challenges. The development of offshore wind farms together with new installations of photovoltaic and other renewable energy generation assets creates more diversity in the electricity mix and results in an increasing amount of intermittent generation on the grid. At the same time, aging transmission and distribution assets need to be replaced. Storage has real potential to save costs for the consumer when acting as neither generation nor consumption, but as an alternative to expensive grid reinforcements.

SECTION 2

Question 3: Do you agree that DNOs should be able to directly own and operate small-scale storage for the purposes of providing uninterruptible power supplies (UPS) at substations? Do you agree that DNOs should be able to directly own and operate small-scale storage for the time-limited purposes of emergency restoration and maintenance? Do you think DNOs should be able to directly own and operate storage for any other specific applications?

As mentioned above, Tesla agrees with the fundamental principle that ancillary services and other balancing mechanisms should be procured from a competitive marketplace as a commercial service. This stimulates competition, investment and ultimately ensures value for money for the end-user. Based on the current suite of balancing services offered by NGET, Tesla would agree that DNO participation could risk the competitive landscape and jeopardize investor confidence.

Tesla also believes that as aging transmission and distribution assets need to be upgraded or replaced, DNO/DSOs have an obligation to procure the most cost-effective and efficient solution. Large-scale storage can be deployed as a cost-effective and reliable alternative to infrastructure upgrades and expansions, which have extremely high upfront costs, long lead times, and carry significant risks regarding long-term forecast inaccuracy as well as acceptance risk by the public.

The role of the DNO in the UK is rapidly changing, and storage can be a valuable tool for a DSO to help store and balance electricity at the distribution level. Until DNOs have fully transitioned to becoming DSOs, it may be premature to assume that a commercial marketplace will be able to provide the highly specific, operational tasks that storage could perform to help DSOs balance their networks.

While abiding by a clear overall principle that DNOs/DSOs should <u>not</u> be allowed to own, develop, manage or operate energy storage facilities, Ofgem may want to consider enabling them to do so under the following exceptional conditions:

a) Other parties, following an open and transparent tendering procedure, supervised by Ofgem, have not expressed an interest to own, develop, manage or operate storage facilities;
b) Such facilities are necessary for the DNOs/DSOs to fulfil their obligations to provide an efficient, reliable and secure operation of the distribution system; and
c) Ofgem has assessed the necessity of such an exception taking into account the conditions under points (a) and (b) and has granted its approval.

In such exceptional cases, Ofgem should regularly – at least every five years – carry out a public consultation in order to re-assess the potential interest of market parties to invest, develop, operate or manage energy storage facilities. If the public consultation finds that third parties are able to own, develop, operate or manage such facilities, Ofgem and other relevant UK authorities should ensure that the activities of DNOs/DSOs in this regard are phased-out.

Tesla is clear that the circumstances under which DNOs/DSOs might be allowed to invest, develop, operate or manage storage facilities are exceptional, and only when a market failure would otherwise cause infrastructure rendering the system more expensive for consumers to be built in its place.

SECTION 4

Question 2: Are there any particular types of data that, if published, could facilitate entry of competitive parties? Is there any other information or data that you think DNOs hold about the deployment of storage on their networks that they could usefully make public?

Tesla welcomes the notion of DNOs being more transparent, providing clear signals to the market of the present opportunities for investment and providing additional information to increase the chances of successful and mutually beneficial points of connection. We think that more could be done to incentivise storage deployment, not just by increasing penetration but also by ensuring that locational advantages are properly recognised, signaled and rewarded.

It is clear that storage can play a positive role for DNOs, such as alleviating congestion in areas of constrained capacity, but at the moment there is no commercial mechanism or incentive for developers to factor in locational benefits. Tesla agrees with Ofgem's view expressed in point 4.6 that DNOs should facilitate the development of a new market where there is a clear benefit to do so, and we would suggest that this is one area that could be developed (Tesla notes and welcomes UKPN's recent tender to this regard).