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GRID-SCALE ENERGY STORAGE WILL BE ECONOMICALLY VIABLE IN THE UK

Bloomberg New Energy Finance study finds that rapid falls in the price of technology and appropriate regulatory support could create a significant opportunity for the use of storage in the electricity network

London and New York, 24 January, 2012 – Energy storage has long been regarded as a transforming technology for the future, enabling the better integration of intermittent renewable electricity such as wind and solar power, without requiring more high-cost peaking capacity.

A new report by analysis company Bloomberg New Energy Finance, published to clients this week, has found that the breakthrough for storage could be closer than previously thought - thanks in large part to an expected drop in battery prices over the coming few years. Other storage technologies which may also see significant growth include traditional approaches such as pumped hydro and novel ones like flywheels.

The study says that while niche markets for energy storage are already viable in the UK today, mainly to relieve bottlenecks in the transmission and distribution of power, more substantial penetration of energy storage within the grid system will become economic within the next five years. However, the report also points out that the key to the successful roll-out of energy storage within the UK electricity system in the next few years will be putting in place an appropriate regulatory framework - something that has not yet been achieved.

Specific forecasts in the report are that energy storage will be able to meet economically the need for fast reserves and short-term operating reserves, two grid services purchased by National Grid to maintain grid stability, in 2014 and 2017 respectively; and that using storage to manage energy prices could make sense for large power consumers in the next year and for smaller ones by 2016.

The most exciting development in storage worldwide is in the price of lithium-ion batteries. In the long-term, as more and more electric vehicles are made and sold, the cost of batteries used in these vehicles will fall, and this technology will be directly transferable to the grid system as well. Most grid-scale lithium-ion battery projects today cost more than $1,000/kWh, but with battery manufacturing capacity likely to outstrip supply in the short term, Bloomberg New Energy Finance is forecasting significant price drops in the next 36 months, towards $600/kWh by 2015.

By 2020, according to Bloomberg New Energy Finance, energy storage could be in widespread use in the UK across the transmission and distribution systems, at customer sites and perhaps co-located with wind farms and solar parks.

The successful adoption of storage technologies over coming years depends critically on there being a supportive policy regime in place. Some of the current regulatory rules prevent storage from being

exploited fully to its potential. For instance, at present, regulated transmission and distribution utilities are simply not allowed to use storage to sell services to National Grid, even if there is an overall system benefit in doing so.

Shu Sun, energy storage analyst at Bloomberg New Energy Finance, said that the benefits from the effective introduction of storage in the UK could be very substantial, such as enabling the country to generate a much higher percentage of its electricity from renewable sources, and enabling industrial and large commercial users - and households with smart meters - to avoid having to purchase power when it is at its most expensive.

“The prize may be within sight, but there are obstacles that need to be cleared before the UK can attain it," he commented. "In the short term, we will see a small number of demonstration projects being built in the UK using funding from schemes such as the Low Carbon Networks fund. For more widespread adoption of storage in the transmission and distribution networks, appropriate mechanisms need to be built into RIIO (revenue equals incentives plus innovation and outputs), the new regulatory model which aims to promote innovation and the use of new technologies within the UK power networks."

The report ‘Energy storage valuation study: UK’ is published by Bloomberg New Energy Finance as part of its Energy Smart Technologies Insight Service.

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