THE ELECTRICITY STORAGE NETWORK™

# Barriers to securing long-term contracts for independent renewable generation investment

Prepared by the

Electricity Storage Network™
Dairy Farm
Pinkney
Malmesbury
Wiltshire SN16 0NX

Telephone:
Email:

## The Electricity Storage Network™

The Electricity Storage Network™ is the UK's industry association for the promotion of electrical energy storage. Current members include electricity storage manufacturers and suppliers, developers of electricity storage projects, users, electricity network operators, consultants, academic institutions and research organisations.

The Electricity Storage Network™ works on behalf of its members to respond to and address issues affecting the development and utilisation of grid-scale electricity storage within the UK power system. This includes special interest meetings, liaising with the media, responding to consultations, providing a unified point of contact for those interested in electricity storage and promoting the value of storage within the UK power system.

We strongly support UK energy storage solutions for the UK electricity system and by promoting local innovation in electricity storage we support wider UK industry.

## Introduction

Thank you for the opportunity to respond to this consultation, which although directed at independent renewable generation investment, is relevant to energy storage, a renewable energy technology. Energy storage shares many characteristics of investment with renewable generation and is tightly linked in a number of areas. Electricity storage technologies support a move to low carbon generation and efficient use of existing power infrastructure. The implementation of electricity storage is impeded by a number of barriers, mainly commercial and regulatory. In order for storage projects to secure investment (at a satisfactory rate), investors need to see an adequate rate of return. Although the potential benefits of electricity storage are beginning to be understood by policy makers, regulators and network operators, an electricity storage project, by itself, is not recognised in any meaningful way as a renewable technology (while not necessarily being "generation"). Significant barriers to market entry for storage are the absence of a clear definition for storage in legislation and the inability to access the multiple income streams due to storage.

## Response to Consultation

We have reviewed both the Annex B Feed in Tariff with Contracts for Difference Draft Operational Framework and LCP's Assessment of the Dispatch Distortions under the Feed-in Tariff with Contract for Differences Policy. The LCP report indicates that in 2030, 1 GW of storage could be worth £25M to the NETSO in high wind - low demand situations, avoiding negative prices. Further, the same report suggests that storage technologies should be supported directly, rather than indirectly through market mechanisms such as Contracts for Difference (CfD).

We also note the select committee comment in their report on the Draft Energy Bill, which states:

"190. On storage specifically, the Electricity Storage Network (ESN) highlighted that existing legislation does not explicitly define or address the role of storage in the electricity market, and that this causes confusion and uncertainty about its treatment. The ESN suggested that it is not appropriate to include electricity storage simply as a generation activity, as it can provide other services such as absorbing power at times of excess production by wind and other intermittent generation. ABB, with experience of deploying the UK's first battery energy storage device, also identified "significant legal challenges" that need to be overcome in relation to the treatment of energy absorption and resupply to the grid.

191. As innovative technologies, demand-side response and storage technologies should be recognised and defined explicitly in the Energy Bill. Support for innovation is given to the supply-side, for example by the banding of the Renewables Obligation, and the Bill should provide similar support to demand-side and storage technologies. DECC should investigate the legislative and other barriers to storage identified by our witnesses, and remove any that prevent it from competing fairly in the market."

We agree with their findings of the importance of non-generation or quasi-generation technologies in the sustainable energy mix.

Specific Issues

1. Lack of clear market signals: the only applications for grid connected storage which are going ahead are recipients of demonstration funding such as LCNF. Projects which are not eligible for grants and subsidies struggle to reach economic viability, have long gestation times and to date have not been generally successful. Where clear market signals have been provided, such as ROCs for wind or FiT for solar, investment has followed. Continual changes in the electricity market and ongoing changes to rules and requirements for subsidies inhibit investment as they add uncertainty to a project's business model.

2. The absence of long term contracts, especially for ancillary services depresses confidence in the sector. Even before the withdrawal of long term STOR contracts, market prices for ancillary services had declined to below the level which would sustain a new entrant.

In April 2010 National Grid introduced long-term, 10-15 year contracts for STOR. Such long-term contracts offered investors the option of a secured income for a period of 15 years and storage projects began to reach economic viability. However in October 2010 long-term contracts were withdrawn as National Grid had managed to secure 393 MW of STOR out to a period ending April 2025. The majority of the STOR contracts will have presumably gone to conventional high-carbon generation (National Grid is not required to identify the source of successful tenders nor the carbon nature of the tender) and presumably National Grid is now contracted until April 2025 to obtain STOR from these high-carbon sources.

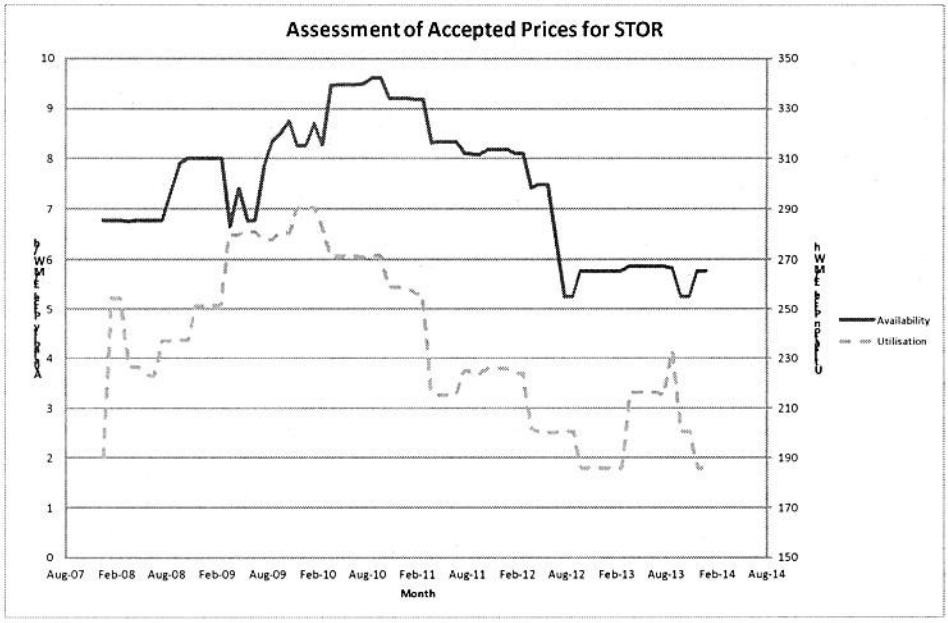
Additionally a significant proportion of reserve is now provided by diesel generators (high-carbon), which have low installation costs and while no account of the carbon implications of reserve providers is considered, storage cannot compete nor can the carbon emissions of peaking plant be reduced as required. This has also meant that availability and utilisation prices for STOR have reduced dramatically over the past 18-24 months. Such fossil fired plant increases emissions, and distorts the market between those reserve providers who are required to stay below operating hour levels, and those who have an exemption by virtue of their size.

The graph below shows availability and utilisation prices paid for STOR until June 2012 (National Grid Monthly Balancing Service Statements[1]). The data used from beyond July 2012 is taken from the accepted tenders in TR 17[2].

[1] http://www.nationalgrid.com/uk/Electricity/Balancing/Summary/

[2] http://www.nationalgrid.com/uk/Electricity/Balancing/services/STOR/

From October 2010 availability payments have dropped from a high of £9.61 to £7.49 per MW/h in June 2012 (availability payments were lower than this in 2008, but utilisation payments were much higher). Availability payments will fall further to £5.25 for the remainder of 2012 and out to 2014. Availability payments are a form of guaranteed income as this is received regardless of whether the service is utilised or not.




Utilisation payments (received when the service is used) have dropped from £291 to £200 per MWh and will fall further to below £186 per MWh for the period to early 2014.

These changes in the prices paid for STOR represent a near halving of the income for availability and over a third drop in utilisation and seriously impact on the ability of storage to find even a short-term market. Like many new technologies, including renewable generation, electricity storage is characterised by high initial costs, necessitating a long payback period, however the lack of long-term reserve contracts and diminishing returns makes investment in storage unattractive.

Additionally National Grid indicates that for year 7 (2013-2014) they were already holding a significant proportion of the reserve required[3], making securing a STOR contract far more challenging than is normally the case.

STOR represents only one potential market for storage, as there are other services such as frequency response and fast reserve, plus the ability to absorb energy (footroom, increasingly important to absorb wrong-time renewable generation) are other possible markets, however it is not possible to operate storage in multiple reserve markets in the current market framework.

Investors in renewable projects have been encouraged by the certainty of future prices (through RoCs). This has not been delivered in the same way for energy storage, with the result that few projects have been proposed and delivered.

[3] http://www.nationalgrid.com/NR/rdonlyres/CFCF7349-0284-46B8-B84E-8D4DF4550116/55400/TR17_MIR.pdf

3. Uncertainty in how market interventions will work: lack of clarity on how any market interventions will work and what technologies will be eligible provide a negative influence on new projects. Additionally since storage is not a focus of these interventions they are unlikely to provide the necessary incentives to develop storage on the system.

4. Storage is not well defined in the regulations and in legislation. This results in storage projects being artificially capped to meet pre-defined limits in regulations. The uncertainty about how storage can or cannot operate and whether it is classed as generation or not, represents a significant barrier to investment since projects will often need to undertake an assessment of the legal position (which is not clear). This is costly and increases risk, which does not encourage investment. Storage should be recognised as a class in its own right, and not grouped with other technologies such as generation.