



**Non-traditional business models: Supporting
transformative change in the energy market -
Ofgem**

Prepared by The **Electricity Storage Network**

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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, suppliers, users, developers of electricity storage projects, electricity network operators, consultants and academic institutions.

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

Introduction

We seek to accelerate the introduction and deployment of electrical energy storage. While the regulatory issues related to electricity storage present the greatest barrier to widespread deployment, our assessment is that its adoption rate is heavily dependent on the financial model and the underlying business case. The present market arrangements are complex and lead to anomalies in trading which, in general terms, disincentivise electricity storage.

The domestic user of storage, and indeed storage applications on the customer side of the meter, are to a large extent independent of market conditions, as essentially the business model works on the displacement cost of purchasing electricity from an external supplier in lieu of time shifted self-supply. However applications of storage on the supply side of the meter are critically influenced by arrangements for trading energy and power. We therefore welcome an approach to review business models, and specifically to examine those non-traditional models that would encourage storage to be deployed.

Storage is a key part of the future smart grid, and active network management relies on strong signals to incentivise behaviour, and if necessary control signals to direct electricity production, consumption and also storage.

The current market model has been inherited from the days of the nationalised industry, with a half hour trading period, which sufficed to meet the needs of the 1950s and 1960s. A simple tariff which only put value on energy and ignored the cost of balancing the system was satisfactory as there were only, in effect, a monopoly supplier and consumers who accepted dictated prices. Electricity storage does not have a significant role in this system of the 1950's, with the only electricity storage being the large scale "national" assets of pumped hydro.

As the system evolves to one with dispersed generation on the distribution network, so electricity storage is needed at this level to help manage the network and reverse power flows due to variable generation. Electricity storage needs to capture multiple income streams in order to have a strong business case. Non-traditional business models are more likely to present the investment opportunities needed for electricity storage.

We maintain that half hour trading periods do not reflect the needs of a modern smart grid. Summing the energy flow over a half hour period can lead to distortions at the beginning and end of each period as participants seek to balance their position. Overseas, many markets are 15 minutes, some 10 and some 5 minutes. Clearly this leads to increased volatility, but this volatility is through prices being more responsive to time of day supply and load requirements. Electricity price volatility is a positive driver towards the adoption and reward for electricity storage.

Response to Consultation

<p>Chapter One: What is your view on our definition of non-traditional business models?</p>	<p>The definition is adequate, but new business models should be seen in a very wide ranging context. Some of the discussion has been based on extension of the present arrangements, rather than a complete re-writing of the methods of doing business.</p> <p>We suggest that ‘Those offering these services’ be altered to ‘Those offering or seeking to offer or to use these services’, because:</p> <ul style="list-style-type: none"> • many NTBMs cannot be in fact offered at present, for regulatory reasons • the motivations of the users are just as important as those of the providers. <p>Care is needed as many NTBM may not yet have been thought of or developed, so any definitions need to allow for future innovation in business models.</p>
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<p>Chapter Two:</p> <p>We would like to hear your views on the drivers for market entry. Do you think there are other important drivers?</p>	<p>We see numerous drivers for NTBM and we also feel that a one size fits all approach will not suffice, that in the future there will be numerous models for different market segments. There needs to be an examination of business models that will support the deployment of the smart grid using the tools of active network management, and in particular to encourage the deployment of strategic tools such as electricity storage.</p>
<p>Chapter Three:</p> <p>Have we accurately described the NTBM environment? Have we missed something? We'd like to learn more about organisations using NTBMs.</p>	<p>We suggest that you examine market models where storage has been deployed, either in a trading, or in a non-trading environment. Much can be learnt from studying such systems and examining their role, especially when they are used in a distributed manner or in community or shared ownership models.</p> <p>Such models need to accommodate different ownership styles, such as ownership by DNO. Merchant developers, community groups, supply companies and private individuals.</p>

<p>Chapter Four:</p> <p>Our main focus in this paper is on regulatory issues arising from future energy market transformation, but we recognise that there are relevant issues within current regulation. Please let us know if there are any other issues?</p>	<p>Chapter 4 provides a comprehensive overview of many regulatory issues, but does not comprehensively describe the commercial and technical challenges faced in understanding existing regulations and licensing conditions when introducing new business models or trying to own and operate electricity storage under the current regulatory regime. A full overview of the issues facing electricity storage can be found in the papers of the Distributed Generation and Storage Sub-group of the Ofgem-led Work Stream 6 of the DECC and Ofgem Smart Grids Forum. We would be happy to share these papers if they are not easily accessible within Ofgem.</p>
<p>Chapter Five a:</p> <p>What are the benefits of different NTBMs to energy consumers?</p>	<p>NTBM will encourage innovation and potentially facilitate the deployment of new approaches and new technologies, like electricity storage. Electricity storage enables the system, at a variety of levels, to operate more efficiently and securely.</p>
<p>Chapter Five b:</p> <p>Are these benefits experienced by all energy consumers or only those directly receiving the NTBM's services?</p>	<p>Electricity storage deployed through NTBM would provide benefits to whole system and not just to those providing or using the service locally.</p>

<p>Chapter Five c:</p> <p>Are there additional wider benefits to the energy system and beyond it?</p>	<p>Yes, a NTBM which encourages more local generation and consumption would reduce system losses, which would be of benefit to the whole system. Equally it would enable increased consumption of electrical energy without the need for costly reinforcement of the DNO networks. Increasing the efficiency of the whole system will bring commercial and environmental benefits. Such a model could also enhance the uptake of electrical energy storage, which would facilitate the management of flows locally.</p>
<p>Chapter Five d:</p> <p>Which of these benefits should be taken account of in regulatory policy-making and decision-taking and why?</p>	<p>NTBMs that result in a sustainable, secure and affordable electricity system should be given priority. Local generation, storage and supply is likely to result in lower costs and a more efficient system. The incorporation of storage (electrical or thermal) into local (distribution level) networks will help manage flows on the system, perhaps reduce the need for reinforcement and reduce costs.</p>
<p>Question Five e:</p> <p>Are there energy system costs or risks from any of the NTBMs?</p>	<p>Where a community develops a project that involves generation (storage) and supply, this will necessarily be “unbundled”. This may not be an issue at the small scale, but may be an issue at larger scale.</p> <p>Competition and security in local markets needs to be ensured and this may mean facilitating the ability to have two suppliers: the local supplier and the “supplier of last resort” for occasions when local generation cannot meet local demand (although demand response services would be expected to alleviate</p>

	some of these situations). Currently metering, billing and settlement do not support two suppliers.
Question Five f: How will NTBMs help to drive innovation within the energy system?	We see NTBM as being an important part of the innovation process. For example, we believe that the deployment of storage would increase substantially if the current business regime were changed to reflect parity between all users on the power system in an open and transparent market, unconstrained by the parameters of the past.

<p>Chapter Five g: How could NTBMs potentially transform the energy market and what fundamental challenges to regulatory arrangements could this entail?</p>	<p>NTBM have the potential to be highly disruptive to current supply arrangements. NTBM have the ability to offer competition in the supply market, since new models and their developers are likely to be more agile than the incumbent suppliers. NTBM are likely to support novel partnerships to deliver a better, more cost effective and locally relevant services.</p> <p>Resolving the regulations around electricity storage will encourage deployment and enabling “microsupply” (analogous to the approach taken with generation and microgeneration) and would empower community groups so that NTBM based around communities would allow them to engage with their own energy use and purchasing.</p>
<p>Chapter Five h: How could regulatory arrangements change to accommodate NTBMs?</p>	<p>See above for suggestions.</p>
<p>Chapter Five i: What role do NTBMs and other parties have in managing energy market transformation and regulatory change?</p>	<p>Interested stakeholders should be involved in developing regulations. This may be difficult as some NTBM may be proprietary, which would hamper discussions.</p> <p>We believe that the regulatory regime has to be “light touch” and responsive to ensure the widest scope for innovation.</p>