

Ofgem: Charging arrangements for embedded generation

The Electricity Storage Network is the UK's only industry group dedicated to supporting 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 has been working, since 2008, on behalf of its members to respond to and address issues affecting the development and utilisation of 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

Ofgem have concerns about the transmission charging arrangements for embedded generation, particularly in response to CUSC proposals CMP 264 and 265, which seek to reduce embedded benefits as soon as possible.

General Comments

Electricity storage is currently treated, as default as "generation". This means that in the absence of a new electricity storage asset class and a definition for electricity storage, it will be treated as generation, with significant impacts on the economics of storage projects.

It should be noted that nearly every single one of the over 60 bids tendered in the recent National Grid Enhanced Frequency Response tender related to distribution connected electricity storage projects. Just the announcement of the tender round for this service generated over 20 GW of speculative applications from electricity storage developers to connect to the distribution network. 0.5 GW (three projects) applied to connect to the transmission network. At least initially, electricity storage is likely to be deployed at the distribution level and embedded benefits are critical for ensuring the success of an electricity storage.

We accept that charging arrangements in all levels of the GB system are not fully cost reflective and would ask that full and holistic review is undertaken to assess the impacts of charging across the entire system to ensure that the charging approaches deliver the signals that will promote the creation of the secure, low carbon and cost effective electricity system.

We strongly object to the current piecemeal approach to addressing charging as this will have intended and unintended consequences and has the very real prospect of halting the deployment of electricity storage. We are also very concerned that this particular review appears to be driven by two code modifications from large centralised, transmission connected generators (CMP 264 and 265). It also appears to be a response to the

unwelcome and unintentional result of the Capacity Market that has resulted in diesel generators securing a significant number Capacity Obligations as “new” capacity, mainly connected at the distribution level.

Indeed, the recent approval of DCP 228 appears to make the previously very strong distribution tariffs (red, amber, green) less of signal by reducing red charges and increasing amber and green charges. Quite how this will encourage the efficient use of energy and demand side response is not entirely clear.

If the intention of the review is to restrict a particular technology (e.g. diesel generators), then Ofgem should ensure that any change in embedded benefits has the desired impact on only the technology of interest. This will be difficult, if not impossible, since the Regulator professes to be “technology neutral”, while the desired result of the review is very much not technology neutral. Care is needed to ensure that “good” technologies and approaches (such as DSR) are not unintentionally captured by the proposed changes.

Ofgem should also consider the impact the changes will have on demand side response and the role of business efficiency incentives/taxes in delivering the required energy efficiency goals.

There is also a current review of the Energy Technology List (ETL) by the Carbon Trust and care will be needed that the proposed changes to embedded benefits do not restrict the deployment of assets on the ETL.

The CUSC process does not allow those most affected by the proposed code changes to be involved, since the CUSC applies only to transmission connected assets and the proposed code changes will impact negatively on distribution connected assets, who are not party to the CUSC. The GB system has changed and with more distribution generation and a more active distribution network, it is no longer appropriate for transmission connected generation and the transmission system to have the sole role of controlling system developments. Closer interaction between the Transmission Network Operation, the Transmission System Operator and the Distribution Network Operators will be essential to deliver the GB system of the future.

Given the current transition of the GB system from the old centralised dominated approach to a more decentralised and distributed approach a Significant Code Review is merited, even given the speed at which Ofgem/Scottish Power/EDF want to push through CMP 264 and 265. It should be remembered that large incumbent centralised generators such as Scottish Power and EDF will receive material benefits, along with other transmission connected centralised generation, as a result of the adoption of these proposed code changes. Careful thought needs to be given to how these changes will impact on the wider development of the GB system and the distribution network and whether those changes will deliver the low carbon, low cost and secure electricity system we desire.

For electricity storage the codes changes will significantly impact on the economic viability of a project. The loss of income from participating in Triad avoidance represents a loss of a quarter of an electricity storage projects income. This also needs to be balance against the other negative costs an electricity storage project incurs, such as the unfair application of End User Levies, which is a cost every electricity storage project has to cover. Since electricity storage has not been defined as “not being an end user” for the bulk of the electricity it storage, this means the End User Levy has to be paid. This cost is either borne directly by the electricity storage operator/owner or the supplier serving that device and this cost will ultimately be passed on to the end consumer, who also pays the End User Levy, resulting in a double charge on the true end consumer. Various electricity storage developers have determined the End User Levy issue to cost them £12-20/MWh.

So the proposed changes to embedded benefits would remove an income stream from electricity storage, which is then penalised again by having to pay End User Levies. The impact of the two issues together, even

ignoring the wider issues of connection charges and use of system charges, mean that without protection for electricity storage, the deployment of this technology on the distribution network would be halted. Recent reports, such as the National Infrastructure Commission “Smart Energy” report (March 2016), indicate that the deployment of electricity storage in the GB system will save the country £2.4 billion year by 2030, or £50 per consumer per year in 2030.

For a 6 MW / 10 MWh electricity storage device connected in London:

CAPEX	£8.5 M	
Required Annual Rate of Return (ARR)	£1.28 M	
Triad avoidance income per year:	£0.31 M	24% of ARR
End User Levies:	-£0.11 M	8% of ARR and 35% of Triad avoidance income
Remaining potential income	£0.20 M	16% of ARR

It can be seen that without the Triad avoidance income and with the cost related to End User Levies the potential “benefits” are reduced to 16% of the required ARR. Obviously a developer would seek to secure income from other services (likely FFR/STOR), but the double impact of the End User Levies and the loss of Triad avoidance income means it is harder to make a project economic and investable.

If electricity storage is treated as “generation” for the purposes of embedded benefits the nascent deployment of electricity storage in our system will no longer occur and we would ask that electricity storage should be exempted from these changes to prevent a halt in deployment.

The speed with which Ofgem and the CUSC process is proceeding means that it is very unlikely that a full and proper assessment of the benefits and costs of embedded benefits and the wider impact on the entire system (such as the reduction in line losses arising from a more distributed electricity system) will be made, with the very real prospect that hasty and imperfect decision will be taken that will have negative and unintended consequences.

The very large number of broad issues, from the impact on electricity storage, demand side response, business energy efficiency, wider overall system development, speaks to the need for a Significant Code Review, which would allow for a full and proper assessment of all of these issues and would allow the widest participation of all stakeholders, at ALL levels in the system. This would ensure that any decision on charges would result in the promotion of the future system we need, rather than further hurdles preventing the delivery of the smart electricity system for GB

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