



Energy.security@beis.gov.uk

Energy Security Team

Department for Business, Energy and Industrial Strategy

1 Victoria Street

London

SW1E 5JD

NRG Management Consultancy provide commercial advisory services to energy start ups including project developers and storage technology providers. We attach our response to BEIS's consultation on changes to the capacity market. If you are interested in discussing these ideas further please contact Nic Rigby on 07989 494432.

Question 1. Can you provide evidence that current economic and market signals will tend to drive the deployment of batteries that can generate at full capacity for less than four hours? How might this change over time?

Response: New technologies that can provide long term storage (>4 hours capacity) will in time become the technology of choice for many storage applications particularly for grid scale (as oppose to domestic) applications. In the short term though short duration storage such as Li ion is currently the technology of choice for projects that are applying in the current CM (Capacity Market) auction. Currently (and this situation may never change) CM revenue is the only long term revenue stream that storage can obtain so a failure to ensure that storage is appropriately rewarded in terms of its ability to provide capacity support over a typical stress period will distort the storage market towards short term storage. Hence NRG Management Consultancy support the principal of different de rating factors depending on the nature of support provided.

Question 2. Do you agree with our assessment that, under the current rules, displacement of enduring capacity by short duration storage in the CM creates security of supply risks?

Response; Short duration storage has a key role to play in terms of future security of supply in particular in relation to frequency response. Short term storage is though constrained in terms of its ability to provide capacity during periods of system stress given that such periods typically last for periods up to 4 hours. Hence we agree that under the current rules short duration storage in the CM creates a security of supply issue. The wider impact of resetting de-rating factors should be recognised though. For example EFR (Enhanced Frequency Response) or future equivalent product prices will rise as the prices bid in the first EFR auction were based on the current CM rules. Also there is a danger that the lack of long term (as in > 10 year) contracts or reduced income from those contracts (due to de-rating) may impact on the number of Li ion storage projects that are developed. This will also be a security of supply issue given the role that frequency response plays in managing a secure system and the fact that Li ion and other short term/high power technologies (including those that are currently in development) will be the preferred providers of EFR. Hence we propose that

NRG Management Consultancy Ltd, 10 Belmont Road, Twickenham, TW2 5DA, UK
Company Number 09936515



consideration is given to a more fundamental change to the Capacity Market, see additional comments.

Question 3. Do you agree that de-rating factors for storage should be amended to reflect duration? Are there other technologies we should consider in future?

Response: For the reasons set out in BEIS's consultation and as we state in 1 we support the use of different de-rating factors depending on the ability to respond to system stress incidents. The driver for the new factors is the capacity of the providers rather than the fact that they are storage units. Consideration should therefore also be given as to whether other technologies could be constrained in terms of their ability to provide MW over an extended period. For example if an oil fired plant did not install fuel storage (or a means of accessing fuel) to enable 4 hours continuous running or if a CHP plant can only deliver its CM MWs by turning off a hospital's only source of heat or an interconnector that is constrained by its ability to find MWh to export from other markets. These reflect a random set of circumstances but to ensure the CM is adequately future proofed it may be appropriate to designate all technologies as 4 hour minimum running or otherwise they should be grouped with storage. This would not be a significant change to the current approach but it would effectively give more emphasis to future performance rather than the current mix of past and future performance. This would also future proof the CM to simplify the process of accommodating another technology that may appear in the future

Question 4. Do you agree with the proposed banding of duration categories?

Response: Our expectation is that few plants will be built in the categories other than minimum 30 minutes and minimum 4 hours but excluding these categories prevents those few plants participating in the CM so the proposed categories are in our view correct.

Question 5. Do you agree that we should take additional factors, such as participation in other commercial revenue streams, into account when calculating the values of EFC (Equivalent Firm Capacity)?

Response: Participation in other services may be a way of addressing the point re long term contract/ financing in which case we do not agree as this is likely to create other distortions. This may be necessary as a short term fix but the more effective solution is to change the scope of the CM as set out in Additional Comments.

Question 6. Do you have any evidence or sources of information about breakdown rates for short-duration storage that can be used to calculate their de-rating factors?

Response: No but we would comment that the lack of evidence re breakdown rates should not result in lower de-rating factors for innovative technologies.

Question 6a . Which is your preferred option for verifying duration? Please provide a justification.

Response: As per our answer to 7 we believe that most projects will prefer to verify duration based on performance but we support both approaches being offered.



Question 7. Would all storage facilities, including pumped hydro, be able to provide a suitable guarantee(s), and would these be a reliable way of verifying duration on their own?

Response: The provision of a guarantee without credit support has no value. Putting long term performance back to the OEM (Original Equipment Manufacturers) will increase costs particularly for new suppliers for whom credit support will be significantly more expensive. Hence making guarantees an obligation is an innovation killer. Guarantees is one route to provide consumers with security of supply so it should be made available as a methodology that can be chosen to demonstrate capability.

Question 8. Do you agree that the changes will have the expected impacts? Please provide evidence to support your views.

Response: Some of the expected responses listed avoid recognising that this measure will be challenging for a nascent technology. In essence, these changes reduce the revenue streams available to storage and steps to replace those revenue streams will take longer to implement.

At this stage in the development of a new technology there are significant risks associated with these steps. In detail our views on the outcomes are as follows:

- It is true that other business models will be found but government and regulators need to indicate which models and revenue streams they support and which they might change. Also the issue of long term contracts needs to be addressed.
- It is not entirely true that participants had been expecting these changes. If BEIS believed this then they should have encouraged Ofgem to issue a statement stating that this issue needed to be investigated. This change has been brought in late and part way through a CM auction process whilst we cannot undo history we can learn from it. So industry should have been more explicit in terms of its messages in relation to the capacity market and storage in general and government needs to listen more to the providers of nascent technologies and less to those who have a vested interest in the status quo.
- Whilst CM is a lesser source of revenue for storage it is the only long term revenue source and therefore reducing the revenue will have significant negative consequences. See Additional Comments for our suggestions on this issue.
- We agree with the other outcomes.

Question 9. Will the changes have other impacts that we have not foreseen? Please provide evidence to support your views.

Response: As suggested by our response to 8 there are significant dangers associated with the way this change has been implemented. BEIS has to implement this change but it should be wary of the impact. BEIS, Ofgem and National Grid (and some DNOs) now clearly recognise that storage and others forms of flexibility are key to the future energy system. The following steps would be helpful to ensure that the development of these nascent technologies get through this challenging period:

- More signposting by BEIS, Ofgem, National Grid and DNOs as to what changes they are considering.



- Urgent steps being taken to address the long term revenue stream issue (see Additional Comments)

Question 10. We would welcome views on how we can best balance facilitating the participation of robust new DSR (Demand Side Response) resources in the CM with the need to understand their delivery progress, and any likely failures, before it is too late to secure alternative replacement capacity?

No response as others are better placed to comment.

Question 11. Should the DSR metering and testing deadlines be brought forward as suggested to mitigate against the risk of non-delivery? If not, please outline alternative solutions.

No response as others are better placed to comment.

Question 12. We would welcome views and evidence on the likely impacts of the above option. For DSR providers: how would the suggested deadlines impact your ability to recruit DSR clients/components? Do the component reallocation proposals help or would you instead look to enter more capacity in the T-1 auctions?

No response as others are better placed to comment.

Question 13. Do you agree that failure to demonstrate satisfactory performance within the relevant Delivery Year should be added to the list of termination events in the Capacity Market Rules?

Response: We are supportive of the CM taking a strong position on parties who are not able to deliver their CM obligations and the approach proposed seems appropriate. We do though have two provisos one is that parties should be able to trade those obligations and secondly that parties that whose contracts are terminated should be able to re-apply to the CM short term auctions.

Question 14. Do you feel that the termination fee level for the proposed new termination event should be set as category T5, with a fee of £35,000/MW? If not, what category/fee level would be appropriate and why?

Response: The termination fee should be proportionate in terms of the cost of finding replacement capacity hence the importance of enabling failing providers to buy their way out of the problem. If parties fail to trade out of their position then a termination fee at the level proposed would seem appropriate.

Question 15. Do you agree with the proposal to require at least one SPD (satisfactory performance days) to be demonstrated in January-April of the Delivery Year?

Response: National Grid as the party responsible for ensuring delivery of capacity should have the ability to ensure that SPDs are carried out so as to provide them with the confidence they need that parties will perform their CM obligations. On the assumption that this change is driven by such a requirement then we are supportive. We would also suggest that there needs to be a mechanism to ensure SPDs also occur early in the winter period.



Additional Comments

Development of storage, particularly products that involve significant investment, is suffering due to the lack of long term contracts that provide confidence in revenue at a reasonable level. Similarly there are many that state that the Capacity Market (CM) is failing as it is not bringing forward high investment projects including CCGTs. There are also parties who are concerned that the CM does not represent good value to consumers. We therefore propose a solution to these three challenges.

If the CM was changed into a cap and collar pricing arrangement then CCGTs and Storage could bid so as to receive revenue certainty at a level that enables them to bring projects forward. Alongside that if peak prices are above the “cap” then consumers will benefit from a payment from contracted generators. This approach is similar to the one that has been used with interconnectors so it is a reasonably well understood approach. It is recognised that this approach will need to be further developed before it could be implemented but we would be delighted to discuss this concept further with BEIS.

5 September 2017

Nic Rigby