The voice of the energy industry

Energy UK Response to the Department of Business, Energy and Industrial Strategy's Capacity Market Consultation – Improving the Framework

8th September 2017

About Energy UK

Energy UK is the trade association for the GB energy industry with a membership of over 90 suppliers, generators, and stakeholders with a business interest in the production and supply of electricity and gas for domestic and business consumers. Our membership encompasses the truly diverse nature of the UK's energy industry – from established FTSE 100 companies right through to new, growing suppliers and generators, which now make up over half of our membership.

Our members turn renewable energy sources as well as nuclear, gas and coal into electricity for over 26 million homes and every business in Britain. Over 619,000 people in every corner of the country rely on the sector for their jobs with many of our members providing lifelong employment as well as quality apprenticeships and training for those starting their careers. The energy industry adds £83bn to the British economy, equivalent to 5% of GDP, and pays over £6bn in tax annually to HMT.

Executive Summary

Energy UK and our members welcome the opportunity to respond to this consultation on Improving the Framework of the Capacity Market. The energy industry's innovation necessitates change to rules and regulations.

We and our members broadly support the proposals set out by the Government on battery de-rating and believe it is essential that it is implemented ahead of this winter's auctions. However, there are some concerns about the approach of resolving this issue in isolation and would encourage an additional wider review as soon as is practicable. We appreciate the Government's reservations regarding unproven DSR but have detailed a more measured and appropriate response.

Energy UK has strong concerns about the proposal to introduce a new termination event for failure to demonstrate satisfactory performance. The current proposals may be rather too blunt an instrument to deal with the issue. Similarly, the Government's recommendations pertaining to testing have the potential to build significant and unnecessary costs into the development.

The introduction of different technology classes for different types of batteries is sensible as it caters to differing capabilities. Furthermore, since post-subsidy and unsubsidised PV and wind generators are likely to become viable soon, it would be sensible to add technology classes for those, too. While the introduction of more detail in the set of technology classes is to be welcomed, they should really be applied to the generating units within a CMU rather than at the level of the whole CMU (as a CMU may include more than one generating unit of different technologies). Although we acknowledge that this could create logistical issues for National Grid's management of the Capacity Market Register, we consider that it is the job of the Delivery Body to facilitate an effective Capacity Market: the design of the market should not be compromised simply to make things easier for the Delivery Body.

Energy UK supports the proposed metering reassessment set out in the consultation as this fixes issues within the Capacity Market Rules.

Response to Questions

Q1.	**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?**

For some members, the review of de-rating factors for storage is welcome and the prioritisation the Government has given to the issue is appreciated. However, some of our members have concerns about the approach of resolving this issue in isolation and would encourage an additional wider review as soon as is practicable.

Other incentives may determine the likely level of charge and speed at which discharge might take place. For example, the relative attractiveness of the available 'spill price' during a system stress event might incentivise rapid discharge in a settlement period that is known to be a system stress event rather than 'rationing' the energy over several settlement periods. Batteries that are providing relevant balancing services are doing what is required as outlined by those contracts.

More broadly, the opportunities for batteries to provide ancillary services such as Enhanced Frequency Response (EFR) can currently be met most economically with batteries able to deliver large amounts of power in a short period of time, thus driving deployment of batteries with a short duration, typically in the region of ½ - 1 hour. Although this may change over time, there are likely to remain strong drivers for batteries that are capable of delivering power quickly, even if they may not necessarily always be used in this way.

The Government should consider how a battery that increases its capacity should be dealt with under the CM Rules. Currently the rules do not allow for a change to the de-rating factor of a Capacity Market Unit (CMU) if it is able to upgrade its capacity. Energy UK is committed to ensuring that the rules put all technology on a level playing field; this includes the ability of storage to update its capacity in the future.

Q2.	**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?**

Energy UK encourages BEIS to consider the responses to this question which our members have individually submitted.

Q3.	**Do you agree that de-rating factors for storage should be amended to reflect duration? Are there other technologies we should consider in future?**

Some members agree that de-rating factors for storage should be amended to reflect duration. Short duration capacity such as storage, certain types of DSR and fuelled plant share these characteristics and we appreciate that as such may pose a problem to the Government. A number of our members believe that CM participants should be allowed to provide their own derating factor also accepting the commercial risks associated with doing so. In such an eventuality ensuring that penalties remain appropriate to delivery could prevent gambling and avoid onerous testing however we recognise that such a change in penalties would represent a very radical shift.

Operators can discharge batteries for as long as they choose, so it is not necessarily reasonable to assume that batteries will deploy at full discharge at the beginning of the CM event. Since the CM is being a load-following obligation, it would make sense for operators to discharge just enough to meet their de-rated load-following obligation. We believe that National Grid should consider this within their modelling.

Q4.	**Do you agree with the proposed banding of duration categories?**

In principle, we agree but it will be necessary to see the outcome of National Grid's modelling before to be certain about this. Following discussion with our members we would urge caution and would encourage keeping this under review.

Energy UK and our members would appreciate detail on why four hours has been decided as the period of time to base the model around.

Q5.	**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?**

Participation in other revenue streams may be uncertain or linked to contracts that are shorter than the duration of a capacity agreement. Therefore, some members believe that it will be very difficult to take such revenue streams into account, even though they should be, in principle.

The Capacity Market works on the basis that if a CMU is providing a MW of Enhanced Frequency Response (EFR) then it is also providing a MW of capacity as it displaces a MW of generation that no longer needs despatching. A battery delivering a Relevant Balancing Service such as EFR may be able to sustain this for a much longer period than it would be able to generate at full power. Therefore, some members believe that it should not be de-rated on the basis of its duration while it is providing the Relevant Balancing Service.

Other members believe that whilst it is true that the provision of ancillary services by short-duration storage (or other technologies for that matter) could mean that such services are not required from conventional plant on any particular day, this should not detract from the fact that the product that is being procured through the CM auctions is the product that has the ability to deliver energy during times of system stress. Many technologies compete to deliver ancillary services, and there is no guarantee that any specific short-duration storage system will hold an ancillary service contract in a future delivery year or be called upon to provide such a service during a system stress event.

Q6.	**Which is your preferred option for verifying duration? Please provide a justification.**

We recognise that some form of testing will be necessary to provide the appropriate level of assurance on duration. However, the Government should recognise that there is a cost associated with testing on developers; most battery technologies can only support operators on the system as a finite number of charging cycles, so any "duration tests" would be costly. We recommend that testing only be used when absolutely necessary.

Q7.	**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?**

We would refer BEIS to our answer to question six. However, for legacy pumped hydro plant, getting a guarantee for an OEM would be difficult and it might be more appropriate to us a Director's guarantee instead as there is a cost associated with undertaking a full cycle for any plant when it is not needed for market purposes.

Q8.	**Do you agree that the changes will have the expected impacts? Please provide evidence to support your views.**

The changes are likely to have some impact on the economics of battery deployment; this may potentially slow down the development of batteries in the Capacity Market in the short term. However, we do not expect battery storage to be developed purely on the basis of Capacity Market revenues and it is likely that this will be reflected in the pricing of other services provided by batteries. We believe that the rates of performance improvement and cost reduction in battery technology will be far more significant drivers of the long term deployment of batteries than changes to Capacity Market Rules.

Other than the fact that Energy UK expects there to be an impact on the economies of battery deployment, there are two distinct views from Energy UK membership with regards to this question. One is that the policy change proposed in this consultation was foreseeable, and the other that the policy change was not foreseeable. BEIS should consider whether policy changes are foreseeable and whether they are providing effective signals for the direction of energy policy for industry. As per Energy UK's response to the Targeted Charging Review [1], we are supportive of arrangements that provide enough lead time for the industry to respond to changes.

Ultimately, Energy UK is fully supportive of the Government's intention to move towards a low-carbon, flexible network and we would encourage cognoscence of the access to revenue streams required in order for developers to invest in this range of technologies. It is also important that other ancillary services reflect the value that batteries can provide to the market.

Q9.	**Will the changes have other impacts that we have not foreseen? Please provide evidence to support your views.**

While, as answered in question 8, we expect that the economics of some battery deployment will be effect, it is understood that the rates of performance improvement and cost reduction in battery technology will be far more significant drivers of the long term deployment of batteries than changes to Capacity Market Rules.

BEIS should support a timely process around and speed up the reformation of the Ancillary Services Review that National Grid is undertaking. Ensuring that there are is a stable, transparent and competitive AS Market will could provide more reliable revenue streams for storage.

It is also likely that these changes may increase the attractiveness of deploying batteries behind the meter as DSR resources relative to deploying them directly in the Capacity Market. We also believe that it may be necessary to give further consideration to the appropriate treatment of co-located resources such as generator plus battery.

Deploying batteries behind the meter is something which developers might do at their own risk, considering pending change proposals. Ofgem is already addressing potential over-rewarding of behind the meter generation through their Targeted Charging Review, Significant Code Review.

Whilst the new de-rating factors will be published in January ahead of the auction, developers must provide credit cover by early December and credit cover is worked out on de-rated capacity. Under the proposed arrangements this necessitates excessive credit cover which acts as a barrier to entry for smaller, new entrants. Either, the Government shouldn't request credit cover from storage until the amended de-rating factors are published, or de-rating factors should be published before the beginning of December when credit cover needs posting.

Q10.	**We would welcome views on how we can best balance facilitating the participation of robust new DSR 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?**

We believe Government are right to consider this issue. With 1.4GW of unproven DSR secured in the last T-4 auction and potentially more in the next T-4 auction, we support efforts to ensure the appropriate level of due diligence is taken with regards to its participation in the market. We recognise that, over time, the consistent delivery of DSR into the Capacity Market may significantly reduce the Government's concerns. A key component in a flexible market, we are confident that DSR will play a key role in the future of the UK's energy mix.

Discussion with members who provide DSR in multiple international markets suggests that the 35% figure quoted in the consultation paper, based on the first transitional arrangements year, may not be representative. It was the first time DSR providers participated in the UK's Capacity Market, so there were a number of issues which should not reoccur in later auctions. Additionally, the level of credit

cover required was so low that it encouraged speculative bidding. In an enduring market, ten times more credit cover is required, ensuring participants will only bid for capacity they can deliver. Discussion with members who participate in multiple international markets suggests that no other capacity market has a problem with this.

Extrapolating from the first transitional auction would be an inaccurate representation of the enduring market's likely operation. What the Government has proposed is disproportionate to a problem which does not occur in established markets. Looking at the last five delivery years in PJM, the shortfall of DSR capacity was at most 1% of that which enrolled.

The monitoring regimes in ISO-NE (New England) and Western Australia may provide a useful model. Both are established capacity markets with multi-year-ahead procurement and significant levels of DSR operating. They both subject DSR to an adapted version of the reporting framework they use to monitor the progress of new-build generation. These reports include lists of confirmed customers and the pipeline of prospective customers, so that the System Operator can determine whether sufficient progress is being made, or some capacity is at risk, just as they do for new-build generation.

We would recommend removing the discrepancies in the monitoring regimes between DSR and generation and the differences in termination fees for the differing types of capacity. A technology-neutral, transparent, level playing field will ensure that the market can drive the right capacity to deal with the UK's future demand.

Q11.	**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**

Energy UK encourages BEIS to consider the responses to this question which our members have individually submitted.

Q12.	**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?**

See answers to questions 10 and 11 above.

Q13.	**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?**

Energy UK and our members share serious concerns about the potential impact of this proposal which represents a significant additional risk to existing and prospective capacity providers. We believe that it requires further consideration before implementation. While significant failures of, for example, large generating plants are rare, operators must bear in mind such risks when considering their participation in the Capacity Market, which may have a disproportionate effect on auction clearing prices. Similarly, for large-scale new-build plant, comparable extenuating circumstances could prevent prospective developers from securing affordable insurance or project finance in the first instance.

We believe that there is an opportunity to appoint an independent expert who could determine whether an SPD failure is as a result of an extreme incident, beyond the control of the operator otherwise developers face the risk of diligently maintaining their equipment only to face a termination event due to an incident beyond their control. Such incidents should be dealt with on a case-by-case basis. Please look to individual member consultation responses for more detailed views of options.

We are also concerned that, under current arrangements, generators have a limited number of means of determining their connection capacity, a problem which may be resolved when Ofgem's proposed change to the determination of connection capacity are brought into effect. We also note that Ofgem's approach includes the concept of partial termination where a capacity provider is only able to deliver a

proportion of their capacity and believe that such an approach should be considered in the case of termination for failure to demonstrate satisfactory performance.

Q14.	**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?**

For the reasons set out in our answer to Question 13, we believe that the approach to this new termination event should be reconsidered particularly given the limited pool of acceptable transferees. Without a liquid pool of acceptable transferees CM participants will find it challenging to mitigate risks before accepting them. If implemented in the currently proposed form, then we believe that a lower level of termination fee would be appropriate as the proposal is a significant departure from the original policy intent of not being at risk of more than 100% repayment of the annual capacity payments. Termination fees should also be equal across all technology types.

As per our response to question 13, greater confidence in the Capacity Market's incentive and penalty regimes if there was an independent expert who can determine whether there is an extreme incident, beyond the control of the operator and such incidents should be dealt with on a case-by-case basis.

Q15.	**Do you agree with the proposal to require at least one SPD to be demonstrated in January-April of the Delivery Year?**

We do not agree as there is no evidence that any technology types become less reliable over the course of the year.

For more detail about the questions posed within the consultation document please refer to the responses submitted by our members. Should you have any questions regarding this consultation response then please do not hesitate to get in touch via the details below.

I can confirm that this response may be published on the BEIS website.

Yours sincerely,

Joshua Atkins
Policy Manager, Generation
Energy UK, Charles House
5-11 Regent Street
London, SW1Y 4LR

joshua.atkins@energy-uk.org.uk