

Consultation on Possible Models for a Capacity Mechanism

Response form

Responses are welcome by email or post. You may find this document helpful for structuring your response, but can reply in a separate document if you prefer. If replying in a separate document please make clear which questions you are answering.

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Tick this box if you are requesting non-disclosure of your response. ☐

Please return by 30 September 2011 to:
Department of Energy & Climate Change, Electricity Market Design – Security of Supply 4th Floor, Area D 3 Whitehall Place, London, SW1A 2AW
You can also submit this form by email to: DECC.capacity.mechanism@decc.gsi.gov.uk

Consultation questions

Note: the references in square brackets refer to page and figure numbers in the consultation document where more information can be found, and the questions are set out in context. The consultation document is Annex C of the Electricity Market Reform White Paper, and is available here:

http://www.decc.gov.uk/en/content/cms/consultations/cap_mech/cap_mech.aspx

Targeted mechanism

Consultation question [page 167]	
1	Does this table [see Figure C3] capture all of your major concerns with a targeted Capacity Mechanism? Do you think the mitigation approach described will be effective?
Response	We have a number of concerns specific to DSR participation, described in detail later in this consultation response.

Consultation question [page 168]	
2	How long should the lead time for Strategic Reserve capacity procurement be and why?
Response	The lead time for Strategic Reserve capacity should be varied, as different technologies that could participate in a Strategic Reserve programme could offer different benefits. While we understand that new build would require a long lead time, DSR would require a short lead time product. This is due to the nature of DSR resources, their changing load shape, operational processes, decision making, and ease of implementation. From a DSR perspective, a short lead time is highly preferable.

Consultation question [page 168]	
3	Should the length and nature of contracts procured by the Strategic Reserve procurement function be constrained in any way?
Response	We believe that the length and nature of the contracts should be constrained primarily by the system needs.

Consultation question [page 169]	
4	Which criteria should providers of Strategic Reserve be required to meet?
Response	We believe that providers of Strategic Reserve should meet requirements around the following parameters:

	<ul style="list-style-type: none"> • Term • Capacity commitment • Availability • Dispatch limits • Event duration • Response time • Proven track record • Sound plans for having the MWs committed available within requested time frame – in the case of DSR, sound marketing plan <p>However, these parameters should be structured so as not to exclude DSR from participation.</p>
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Consultation question [page 169]	
5	<p>How can a Strategic Reserve be designed to encourage the cost-effective participation of DSR, storage and other forms of non-generation technologies and approaches?</p>
Response	<p>A Strategic Reserve programme can be designed in a way that maximises flexibility for DSR participation. If it is agreed that there is a benefit to the grid for DSR to participate, whether that takes the form of real time load reduction or simply not activating a piece of equipment that would otherwise be activated, allowing for different baseline methodology would encourage cost-effective participation of DSR.</p> <p>Longer notification lead time is also helpful for encouraging DSR, as there is much more capacity that can be provided with a 1 hour warning than a 20 minute warning, and still more than can be provided with a day-ahead notice. A low number of expected utilisations (as the Strategic Reserve seems to stipulate) will also allow for participation of DSR that may not otherwise be able or willing to respond on a more frequent basis. Flexibility on availability parameters, such as ability to opt out of windows.</p>

Consultation question [page 175]	
6	<p>Government prefers the form of economic despatch described here. Which of the proposed despatch models do you prefer and why?</p>
Response	<p>On the assumption that the last-resort despatch would have to be despatched at VoLL, we find the economic despatch preferable to the last-resort despatch. We believe that an economic despatch mechanism would send clearer price signals to participants, rather than a theoretical value at which load comes off the grid. It would be difficult to envision a future with smart meters and real time pricing where the last-resort despatch would work better than an economic despatch programme.</p>

Consultation question [page 175]	
7	How would the Strategic Reserve methodology and despatch price best be kept independent from short-term pressures?
Response	We suggest that one way to accomplish this is through having the payments for availability and despatch be determined differently. That is, availability payment could be determined in advance through an auction process, while despatch price could be determined in real time, based on locational marginal price. There are a number of precedents for this model, one of which is the ICAP market in the NYISO programme.

Consultation question [page 175]	
8	Do you agree that a Strategic Reserve should be periodically reviewed? If so, who would be best placed to carry out the review and how often should it be reviewed?
Response	<p>We agree that there should be a periodic review of the Strategic Reserve. This review should be open to all stakeholders and be presented in a working group format. The working group should be run by an independent entity, and the recommendations of the working group should be reviewed by a committee that has the ability to implement the changes recommended.</p> <p>We suggest that at least while the programme is still new, these working group meetings should take place frequently, perhaps on a monthly basis, to ensure open communication and feedback. Once the programme is better established, we would recommend a longer lead time for implementation of programme changes to allow participants to plan and manage accordingly.</p>

Consultation question [page 176]	
9	Into which market should Strategic Reserve be sold and why?
Response	Our position is that Strategic Reserve can be sold into either the Day Ahead market or the Balancing Mechanism, as long as the parameters and flexibility described previously in this document are present. Either market can have parameters in place to meet the conditions required for DSR to participate effectively. Regardless of the market, DSR should receive both an availability payment and an utilisation payment for participation.

Consultation question [page 178]	
10	Do you have any comments on the functional arrangements proposed for managing a Strategic Reserve?
Response	Please see consultation question 11.

Consultation question [page 179]	
11	Given the design proposed here and your answers to the above questions, do you think a Strategic Reserve is a workable model of Capacity Mechanism for the GB market?
Response	We don't believe that there is enough detail and clarity provided in the White Paper to sufficiently capture all of the parameters that we would need in order to ascertain if this is a workable model of the Capacity Mechanism for the GB market. If the decision is made to proceed with a Strategic Reserve mechanism or a Market Wide Capacity Mechanism, there will be a lot of stakeholder engagement required in order to delineate the final rules and operational parameters of the programme.

Market-wide mechanism

Consultation question [page 182]	
12	How and by whom should capacity in a GB market be bought and why?
Response	We believe that having a central institution buying capacity in an auction process will minimise risk of gaming and prevent conflicting interests. Involving suppliers in this process may disadvantage DSR, by creating an additional barrier for participation. In addition, it may be more difficult to resolve issues, which has been the case in a number of markets in North America where suppliers and utilities have made it administratively difficult for DSR resources to participate.

Consultation question [page 183]	
13	What contract durations would you recommend for a Capacity Market?
Response	We would like to see a number of options for contract duration. For example, the Ontario DR3 programme offers DSR participants flexibility with regard to maximum hours of participation as well as contract lengths. Participants are compensated differently based on the options selected. A longer contract length allows for market participants to lock in price, for demand to make upgrades and spend money on enablement, and will present an overall most attractive payback.

Consultation question [page 184]	
14	How long should the lead time for capacity procurement be? Should there be special arrangements for plant with long construction times?
Response	The lead time for capacity procurement should be varied. The options should be made available for different types of technologies. However, in the case of DSR, we propose a pilot programme for DSR

	<p>participation. This programme should reflect the parameters intended for a wider rollout. In the United States where capacity mechanisms have been developed, all were preceded by Demand Response programmes.</p> <p>One feature of a longer lead time might be a ramp up schedule that allows for portions of the committed capacity to be declared available according to a pre-agreed timeline. This would be the equivalent of a new build plant being built with turbines becoming operational in a staged manner rather than all at once.</p>
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Consultation question [page 185]	
15	Should there be a secondary market for capacity? Should there be any restrictions on participants or products traded?
Response	<p>We view secondary markets as very beneficial to the programme. However, secondary markets alone are not enough to ensure that DSR participates in the programme, as the terms of the secondary market, such as pricing, could be significantly different from the terms of the primary market. Our concern is to ensure that opportunities for DSR exist primarily in the primary market, though we view the secondary market as favourable.</p>

Consultation question [page 186]	
16	What are the advantages and disadvantages of making a central, administrative determination of (i) the capacity that can be offered into the market by each generator; (ii) the criteria for being available; and (iii) the penalties for non-availability? In outline, how would you suggest making these determinations?
Response	<p>Making a central, administrative determination allows for a straightforward approach with clear delineation of responsibility and oversight.</p> <p>The capacity that can be offered by each generator should reflect the de-rated capacity of the generator. For DSR, this can be demonstrated performance during a test. Capping a DSR resource's capacity at the previous year's peak, which has been tried in several other markets, does not always work, as end-users energy demand may vary significantly from year to year.</p> <p>For DSR, availability is usually measured by the provision of meter data. Tests of DSR availability should be conducted to ensure that the DSR resources are indeed available.</p> <p>With regard to penalties, the government has suggested a penalty structure under which in the event of a default, the participant would have to buy back capacity at the difference between real time prices and strike prices. To protect against the risk of having to pay back more than they earn, generators have an incentive to sell their power in the reference market. If a capacity provider is not active in the market it cannot receive revenue to hedge itself against repayments it would have to repay to the reliability option holder. This is quite problematic for DSR, creating a major risk for</p>

	<p>participants. This kind of penalty structure could result in out of pocket penalties, making the risk too high for effective DSR participation.</p> <p>On an annual basis, availability will likely comprise the majority of the payment due to DSR for its participation. In most programmes like these, there is a significant penalty if the committed availability is not provided. That is, if the DSR resource was available for the entire year, but was unavailable once for whatever reason, we are keen to avoid a situation where the whole of the availability payments earned throughout the year would be wiped out.</p>
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Consultation question [page 191]	
17	How should the reference market for reliability contracts be determined and what would be an appropriate reference market if it is set by the regulator? How could any adverse effects of choosing a particular option be mitigated?
Response	The regulator should specify the reference market for all contracts. This prevents conflicts of interest and helps to ensure a level playing field for all participants.

Consultation question [page 192]	
18	For a Reliability Market, how should the strike price be determined? If using an indexed strike price, which index should be used?
Response	Considering the options of fixed or indexed, we would prefer a fixed strike price. An indexed strike price may introduce a bias towards the technology whose costs are used as the reference index, whereas a fixed strike price should produce a more level playing field for capacity providers.

Consultation question [page 193]	
19	For a Reliability Market, what level of physical back up (if any) should be required for reliability contracts and how should it be monitored?
Response	<p>There must be some regulatory oversight over the level of capacity that capacity providers may offer into the market. One limit that may work is the nameplate rating for generators already installed. For those not installed, sound plans should be used.</p> <p>In parallel, the DSR providers and aggregators should not be required to have physical contracts with end users, particularly if the programme start date is years away. Other markets have addressed this issue by requiring the DSR provider to present information to verify that the DSR provider is a credible counterparty, assurances, and sound and credible marketing plans for how the MWs committed will be enrolled.</p> <p>We also propose a ramp up schedule so that the MWs committed can come online and become available incrementally. This would further promote DSR participation and all the market to gain the greatest benefit of maximising</p>

	DSR participation.
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Consultation question [page 194]	
20	Do you agree that a vertically integrated market potentially raises issues for the effectiveness of a Reliability Market? If so, how should these issues be addressed?
Response	Our position is that a vertically integrated market would certainly have implications for the effectiveness of a Reliability Market. In order to mitigate these conflicts of interest, suppliers should not be in a position to procure reliability contracts on behalf of the consumers.

Consultation question [page 195]	
21	What could we do to mitigate interactions between a Capacity Market (especially if a Reliability Market) and Feed-in Tariff with Contract for Difference without diluting the effectiveness of either?
Response	NA.

Consultation question [page 196]	
22	How can a Capacity Market be designed to encourage the cost-effective participation of DSR, storage and other non-generation technologies and approaches?
Response	<p>Whether a Strategic Reserve or a Market Wide Capacity Mechanism, there are a number of concerns specific to DSR participation in the Capacity Mechanism. DSR should be included in both the primary and secondary markets. We do not believe that having DSR measures take part solely by subtracting these from suppliers' capacity targets maximises the benefit that DSR can bring to this market.</p> <p>Additionally, the following issues are of particular concern, as the product can be defined in such a way as to preclude DSR from effectively participating:</p> <p>Qualification – We are concerned about a qualification process that would require DSR providers to have committed customers' contracts several years ahead of the programme start. Some programmes in North America handle this by requiring a valid marketing plan from the DSR provider in order to award them the MWs. The parallel to this with a power plant is having sufficient plans and permits, not necessarily having steel in the ground.</p> <p>Notification – A very short notification time would do little more than replicate</p>

STOR, from a DSR perspective. Thus, those resources that are currently unable to participate in STOR would continue to be unable to participate in the new Capacity Mechanism. We advocate for a Capacity Mechanism that is complimentary to STOR, as STOR is a balancing product and the Capacity Mechanism should represent a capacity adequacy product. Most capacity programmes in North America offer a longer notification period for capacity programmes compared to reserve programmes. Specifically, there is often a day ahead or at least 2 hours ahead notification of an event.

Availability Requirements and Event Duration – The event duration should be defined as a period of time that is realistic for a DSR resource. For example, a 24-hour period of response would not be viable for a DSR resource. Presumably a 2 or 4 hours period would be the kind of duration sought for the capacity mechanism, though this needs to be clarified. One option is to provide flexibility via programme options. That is, allow DSR providers the option of a 2 hour or 4 hour duration commitment.

Baseline Methodology – The baseline methodology should be defined in such a way as to maximise DSR participation capabilities. Specifically, ensure that DSR can provide value to the capacity mechanism by not turning on something that would otherwise be turned off, not just a real-time reduction in consumption.

Penalty Structure – The risk associated with under-performance should not be such that negates all benefits of participation. We are concerned about a situation where all of the availability payment earned for the year would be wiped out, or even negative. This level of risk may preclude DSR from effective participation. On an annual basis, availability will likely comprise the majority of the payment due to DSR for its participation. In most programmes like these, there is a significant penalty if the committed availability is not provided. If the DSR resource was available for the entire year, but was unavailable once for whatever reason, we do not want a situation where the whole of the availability payments earned throughout the year would be wiped out.

Run-up/Run-down Rate and other parameters associated with generation – While Demand Response has historically been made to fit into the parameters and programme rules usually designed for generation, there are some areas that make it difficult for DSR to participate. For example, whereas a generator may be at a level of zero production, ramp up to the committed level, and then ramp back down to zero, DSR may not be able to ramp back to the initial starting level. This feature obviously should not preclude DSR from participation.

Consultation question

[page 199]

23

Do you have any comments on the functional arrangements proposed for managing a Capacity Market?

Response	We believe that whatever the functional arrangements in place for managing the Capacity Market, sufficient oversight and regulation must exist to ensure a level playing field for all market participants.
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Consultation question [page 199]	
24	Do you think that a trigger should be set for the introduction of a Capacity Market? If so, how do you think the trigger should be established, and how should it be activated?
Response	<p>The Capacity Market should be introduced, for a central entity to manage. This would ensure that the Capacity Market is indeed triggered, and that this is not simply at the discretion of a single entity. Rather than a specific trigger, we propose a pilot programme to be implemented for DSR in advance of the formal introduction of the Capacity Market.</p> <p>This programme should reflect the parameters intended for a wider rollout and follow the same market construct as that intended for the Capacity Market. In the United States where capacity mechanisms have been developed, all were preceded by Demand Response programmes. We believe that a pilot for DSR can provide the following advantages:</p> <ul style="list-style-type: none"> • Condition customers to the product requirements and participation in such a market design • Provide the UK system operator with experience of DSR • Provide the DSR industry an opportunity to develop the capacity resource in the UK <p>In running a pilot programme, the UK system would immediately benefit from DSR participation, and by the time the full programme is rolled out, DSR participation would be well established.</p>

Consultation question [page 199]	
25	What is the most appropriate design of Capacity Market for GB and why?
Response	<p>We envisage that design of a Capacity Market for GB would be complementary to National Grid's Short Term Operating Reserves (STOR) and the wholesale market. In addition, we advocate for small and targeted system developments where future changes are easier and impact fewer players. Finally, to the extent possible, we hope to see a simple, relevant targeted rule book, sharp price signal to providers of capacity and ultimately an implementation of the cheapest option for consumers.</p>

Capacity mechanism Assessment

Consultation question [page 210]

26	What are your views on the costs and benefits of a Capacity Mechanism to industry and consumers?
Response	<p>A Capacity Mechanism is extremely important to the GB market. DSR should have a significant role in the Capacity Mechanism, so the mechanism must be established in such a way so as to take advantage of the potential DSR available.</p> <p>Last year, OFGEM published a Discussion Paper on Demand Side Response. The following is an excerpt from that paper: To assess the impact of demand side response, OFGEM has undertaken some modelling to estimate the indicative benefits of consumers shifting 5% and 10% of their electricity use in order to flatten peak demand. This analysis shows the following potential impacts, which are indicative only:</p> <ul style="list-style-type: none"> • £0.4m to £1.7m daily wholesale cost savings (based on a sample of days); • £129m to £536m annual avoided capital costs for new generation (based on a sample of days); and • £14m to £28m annual avoided capital costs for networks. <p>There are also potential environmental benefits. Provided that carbon is priced appropriately, this level of demand response would immediately lead to a daily reduction in carbon emissions of up to 0.5% (between 800 and 2,550 tCO₂ per day based on the same sample of days), which is equivalent to emissions from about 135,000 households or a town the size of Brighton.</p> <p>We believe that there are numerous benefits to consumers that warrant the encouragement of maximum possible DSR participation in the Capacity Mechanism, so of which are outlined above. There are additional ancillary benefits such as the avoidance of transmission losses for distributed generation and DSR participation.</p>

Consultation question		[page 211]
27	Which Capacity Mechanism should the Government choose for the GB market and why?	
Response	<p>Regardless of the final design of a Capacity Market, it is critical that it allows for the effective participation of Demand Side Response. DSR is increasingly recognized as an essential ingredient to well-functioning electricity markets, both in the context of organized wholesale markets and more traditional market structures.</p>	

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Thank you for taking the time to let us have your views.

The Government does not intend to acknowledge receipt of individual responses unless you tick this box. ☐