DEPARTMENT OF ENERGY & CLIMATE CHANGE

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 4 October 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

Summary and key points

The CHPA welcomes the opportunity to respond to the Government's consultation on a capacity mechanism. The CHPA represents CHP, district heating and energy services businesses in the UK and, therefore, has a wide array of interest in this area.

Before setting out specific responses to questions, we set out key issues and areas for exploration that need to be considered before addressing the operational design details.

Definition: Capacity, in the context of a capacity market, is an umbrella term for a wide array of potential services. Capacity may be secured to cover significant in-feed loss, renewable intermittency or peak time generation constraints. In reality, all of these and other issues need to be addressed in the electricity market to ensure that security of supply is maintained. Contracting for these different forms of capacity can be very different with the timescale and speed of response varying from seconds to days or weeks.

Whilst recognising the variety of capacity, the consultation, does not set out what it intends the capacity mechanism to achieve nor does it set out the variety of markets which it intends to see served. The CHPA is concerned that the lack of necessary detail in the consultation will lead to a variety of interpretations over what the Government is seeking and, therefore, responses to a given question may, in fact, be answers to fundamentally separate questions.

Principles:

The CHPA has set out below, three defining principles for a capacity mechanism that, we advocate, will help to deliver consumer value, greater efficiency and limit market interference.

1. Develop a market wide mechanism (not a strategic reserve): A mechanism across the market in which all that can offer services can compete and be rewarded is vital to prevent the capacity mechanism further harming what is already an illiquid market. Should the capacity mechanism be available to plant that receives other subsidies then, in order to avoid rents, the level of those subsidies should take account of the value of the capacity mechanism to that plant.
2. Ensure that 'consumer-side' action and investments – specifically distributed generation (DG) and demand-side response (DSR) - can play a role. Companies aggregating and offering DG and DSR services in other markets have demonstrated the capacity and reliable 'deployability' of these services. These companies consistently state that a mechanism that operates on a strike price will fail to deliver demand response. To ensure that DG and DSR can play a role, the CHPA encourages government to do two things:
    a. Establish a DG and DSR contact group in which those who wish to operate in the capacity market can provide insight to ensure that the intention to include DSR is

delivered into a genuine delivery of DG and DSR capacity services across a range of capacity markets.

b. Establish a trial of DSR and flexible DG.

3. Facilitate new entrants on the generation and demand side of the market. The reforms of the electricity market risk hindering new entrants and a capacity mechanism should actively seek to include participation by new market players through:
   a. Avoiding a supplier obligation as this will reinforce existing market power
   b. Ensuring simplicity – minimising cost, risk and complexity for those who are not current participants or large enough to support substantive regulatory teams.

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	The CHPA is concerned that the proposed mechanism has a number of significant flaws which will limit its value and harm the market. The CHPA recommends that the Government adopt a different market wide mechanism rather than attempt to remedy the problems associated with a strategic reserve

Consultation question	[page 168]
2	**How long should the lead time for Strategic Reserve capacity procurement be and why?**
Response	The CHPA is strongly opposed to a strategic reserve model of capacity mechanism. The lead time for capacity procurement for new generation plant should be a sufficient time margin to allow for the complete process of development from planning through to commissioning and synchronisation of new plant but needs to ensure that demand side response (DSR) is fully encouraged where it can provide an equivalent service at lower cost (but see Q14). The question of lead time presents a significant challenge for all capacity mechanism designs, but is most acute under the Strategic Reserve. A long lead time is necessary to allow for development of new, low-carbon generating capacity, without which the market will default to existing, written-down plant. However, exclusive use of long lead times will militate against the development of smaller distributed generation (DG) and DSR capacity, which by its nature is developed primarily in response to an energy consumer's requirements and may not be identified sufficiently far in advance to participate in arrangements with long lead times. Nonetheless, this DG and DSR capability may have the capability to provide a low-cost contribution and must be accommodated through flexibility in the arrangements.

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	No comment. The CHPA is strongly opposed to a strategic reserve model of capacity mechanism and considers that DECC should focus its efforts on developing viable approaches under alternative forms of a capacity mechanism.

Consultation question	[page 169]
4	**Which criteria should providers of Strategic Reserve be required to meet?**
Response	No comment. The CHPA is strongly opposed to a strategic reserve model of capacity mechanism and considers that DECC should focus its efforts on developing viable approaches under alternative forms of a capacity mechanism.

Consultation question	[page 169]
5	**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?**
Response	The strategic reserve model is very unlikely to deliver significant DSR. DSR should be able to participate within the market before a high strike price is met, militating against a very volatile market and high price spikes. Those organisations that can provide DSR need to gain confidence in the market. To achieve such confidence, new DSR entrants will wish to commence with capacity contracts with week, day and several hour ahead requests for response. Through longer term, lower risk (to the DSR provider) response, confidence to act in shorter term, more reactive capacity contracts can be delivered.

Consultation question	[page 175]
6	**Government prefers the form of economic despatch described here. Which of the proposed despatch models do you prefer and why?**
Response	For any form of capacity mechanism, economic dispatch should be the driver rather than last resort despatch.

Consultation question	[page 175]
7	**How would the Strategic Reserve methodology and despatch price best be kept independent from short-term pressures?**
Response	The strategic reserve is likely to be influenced by short term pressures due to the sensitive nature of security of supply. A market wide mechanism is far less likely to be exposed to such pressures

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	The capacity mechanism operation should be reviewed triennially with the option of an emergency review if key indicators are breached. Such indicators should include an assessment of electricity market liquidity.

Consultation question	[page 176]
9	**Into which market should Strategic Reserve be sold and why?**
Response	This question highlights the need to refine the definition of that which is being sought by Government. It is probable that capacity should be sold in a range of markets and this is one reason why a strategic reserve is constrained in its ability to respond to the full range of capacity types that are needed in the market.

Consultation question	[page 178]
10	**Do you have any comments on the functional arrangements proposed for managing a Strategic Reserve?**
Response	The CHPA is strongly opposed to a strategic reserve model of capacity mechanism.

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	In light of the consultation document and DECC stakeholder meetings on capacity market, the CHPA does not consider the strategic reserve to be a viable option for the UK market.

Market-wide mechanism

Consultation question	**[page 182]**
12	**How and by whom should capacity in a GB market be bought and why?**
Response	A central body should be responsible for buying capacity although this should not happen through an auction. A central purchasing agency will be the only mechanism for ensuring that new market entrants can operate on a level playing field with incumbent actors. For demand side response, it is key that aggregators are able to interact with a central agency to deliver substantive demand side capacity by aggregating response from a number of sites. An absence of a central purchasing agency will reinforce existing market power and will further limit access to the electricity market. This is because a vertically integrated company (vertically integrated player - VIP) will have an incentive to control their risk of exposure to the capacity market and, therefore, will seek to invest in the capacity market. Once a VIP has those assets in place, it will have a legitimate interest in ensuring the best return from that plant and will, therefore, tend to utilise internal capacity rather than going to the market. A central body ensures that all plant operate on the same basis and can be despatched on a best value basis. The use of auctioning for capacity is, however, a high risk approach as auction winners suffer from the 'winners curse' in which the winning bids are based on over-optimistic price assumptions and plant are not developed. This problem manifested itself under the NFFO agreement in which only 25% of winning bids went on to be developed. The bilateral trading arrangements of the current electricity market have created a significant barrier to new entry to that market. It would be a mistake to replicate that model in the capacity market which will drive a low level of market liquidity and increase the opacity of the market, risking an effective exclusion of independent generators, distributed generators and DSR, risking reinforcement of the market power among the incumbents.

Consultation question	**[page 183]**
13	**What contract durations would you recommend for a Capacity Market?**
Response	There should be a range of contract durations available under the capacity market. For existing generation assets a 1-3 year contract should be sufficient. For new generation assets, a 20 year contract may be necessary to secure investment.

	For existing DG and DSR a 1-3 year contract should be offered. For new DG and DSR – i.e. new controls and systems to enable DSR, contracts of up to 20 years should be available to ensure that DSR can compete with generation-based capacity on a level playing-field. DSR contracts should include onsite generation and power export from distribution connected embedded generators.

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	Given that DG and DSR are likely to be among the lowest cost forms of capacity and the market for DSR needs to be especially encouraged if it is to develop, lead times for capacity procurement should be sufficiently short to encourage this form of available capacity. It is clear, however, that new capacity generation plant will need to be encouraged and that this has longer lead times. Full development lead times for large capacity plant are between 7 and 8 years. Special arrangements for the construction of these plants would allow for their development but in a controlled manner ensuring that other lower cost and lower carbon options such as DSR and DG - such as embedded CHP plant - could be developed preferentially. When considering contracts for new and existing plant, the Government should give consideration to the impact of the plant's operation on carbon emissions targets. The Industrial Emissions Directive and its derogations may lead to a significant volume of high carbon, inefficient plant which may operate for more hours than was anticipated and harm the attempts to decarbonise the power market. In addition, unless intentionally avoided, new reserve capacity is likely to be relatively low efficiency OCGT plant. Whilst the capacity mechanism must have a primary aim of maintaining power flows on the grid, consideration must be given to its interaction with carbon targets. For fossil plant, CHP will represent the lowest-carbon source of capacity and, in many cases, these plant can be managed to be highly responsive. In addition, given that these plant are always operational to meet onsite heat and power demand, their reliability is also very high when called to provide capacity. When considering despatch under the capacity mechanism, Government should seek to ensure that lower carbon plant and responses are called before higher emission plant.

Consultation question	[page 185]
15	**Should there be a secondary market for capacity? Should there be any restrictions on participants or products traded?**
Response	The establishment of a capacity market will naturally lead to the development of a secondary market. The question is, therefore, whether the Government should prevent the emergence of such a market. Secondary markets can provide an effective mechanism

	for mitigating uncontrollable risk such as unplanned outages. For example industrial CHP sites may have to cease operations for safety reasons and, in such cases, the ability to procure capacity in a secondary market is vital to ensure that the site can mitigate this risk. A failure to be able to mitigate such a risk would deter many if not all plant that could operate in such a market. A secondary market would be a vital option for aggregators of demand response and as a mechanism for increasing liquidity. Provided that the market is open and transparent (through a central, purchaser) the existence of a secondary market should drive towards better price discovery. The Government should focus efforts on developing the primary market and ensuring that it is as close to a perfect market as possible. Once the model has been developed, a period of trialling the system using market experts should occur to determine how the primary and secondary markets will function in reality. To ensure that participants in the market are not purely financial, the CHPA suggests that at least one party in a contract is backed by a physical ability to meet the capacity requirements in the contract.

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	Through a central body, all capacity forms can compete on a level playing field facilitating new market entrants. This would, potentially, enable energy consumers to benefit from the capacity mechanism. Ii/iii There is insufficient detail in the capacity mechanism proposals to answer these questions comprehensively but the CHPA would stress that consideration of penalties should ensure that investment is not discouraged because of uncontrollable risks.

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	Establishing a reference market for the capacity mechanism assumes that a suitable reference price exists in a well functioning and liquid market. The CHPA has previously highlighted that the current electricity market is illiquid and that we are concerned that the CfD arrangements will only serve to make the market less liquid. Whilst we recognise that Ofgem has been targeted with improving market liquidity, the current proposals appear unlikely to be sufficient to mitigate the risk of worsening liquidity in the face of the

	new incentives framework. The spot market in the UK is the most liquid part of the market due to the necessary churn to mitigate cash-out price exposure and, therefore, this may be the best option for providing a reference price. This, however, creates a challenge for products that are traded further out.

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	A central price setting mechanism for reliability contracts would ensure that plant is built and can operate. A pay as bid auction would likely lead to a failure of capacity to materialise and has been demonstrated to be a poor mechanism in the past under NFFO.

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	The CHPA believes that purely speculative financial capacity offerings should not be permitted in the market. To minimise the cost of development, the CHPA suggests that name-plate capacity be used to ensure that products offered to the market have a form of physical back-up. The penalty for failing to deliver must be sufficient to encourage the development of reliable capacity or sourcing of that capacity through the secondary market. Provided that there is a mechanism for mitigating the risk of incurring a penalty due to unforeseen events, investment could still be encouraged.

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	There are risks that the vertical integration of the market would limit the effectiveness of a reliability market. The use of a central contracting agent (rather than a supplier obligation) and the removal of the option for bilateral trades would be a significant help to mitigate risk. Ensuring that system is transparent and simple is also key to facilitating multiple new market players.

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	The CHPA remains concerned with the CfD FiT model as we believe that it will: a. Harm market liquidity b. Inhibit new entrants by reinforcing existing market power c. Not deliver the cost effectiveness anticipated (as compared to a premium FiT) due to 'a' and 'b' above. A reliability market has less scope for harmful interactions with the wider market and subsidy regime than the strategic reserve as it is a market-wide mechanism. The interaction between the CFD strike price and reliability strike price could be particularly complicated as there is the possibility that a generator could have to pay-back under two different mechanisms.

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	Encouraging DG and DSR within the capacity mechanism is key to ensuring that the costs of decarbonising are minimised and that emissions from reserve capacity are also limited. . To ensure that demand response can play a role, the CHPA encourages government to do two things: a. Establish a demand-side response contact group in which those who wish to operate in the capacity market can provide insight to ensure that the intention to include DSR is delivered into a genuine delivery of DSR capacity services across a range of capacity markets. b. Establish a trial of demand side response DG and DSR will, principally, be offered by new entrants and, therefore, facilitating new market entrants should be the first priority of the capacity mechanism. For many potential DG and DSR operators, their engagement with the electricity market is very limited. As a result the accessing the capacity mechanism needs to be: 1. Very simple – to enable non-market experts to explore the options for DSR 2. Low cost 3. Low risk Delivering simplicity at low cost and risk is a significant challenge within the UK power market which is already highly complex. For this reason, the value of aggregators in bringing forward DG and DSR is paramount. Aggregators can combine a range of DG and DSR services and capabilities, and bring these to market in larger volumes thus minimising transaction costs and widening access for DG and DSR providers. Demand side response (at industrial, commercial and community level) provides scope to utilise excess power generation through storage as such as batteries, pumped air or water storage or thermal stores – in the future, it is likely that power prices will tend to negativity

	at times of low demand and a capacity mechanism should facilitate the use of this electricity as a mechanism to minimise costly constraint payments. In countries with district heating networks, electric boilers coupled with highly efficient thermal stores facilitate the penetration of renewable power generation through providing a low cost balancing service at times of low power demand. This service results in low cost, free or income-generating heat provision – the value of which can be passed on to heat consumers. DSR is a new opportunity for the UK which complements DG and provides an opportunity for the energy consumer to derive benefit from the market transformations for which they increasingly bear the burden of both cost and risk. It is of paramount importance for the Government to develop a specific DSR work stream and contact group to ensure that the development of DSR within the capacity mechanism leads to a genuine and significant market for DSR actors.

Consultation question	[page 199]
23	**Do you have any comments on the functional arrangements proposed for managing a Capacity Market?**
Response	There is insufficient detail in the consultation to provide a detailed response to this question. The CHPA supports the principle of a central buyer model for capacity as set out above.

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	The capacity market should be introduced once it has been designed and substantially tested through 'gaming exercises'. A reliability market will grow gradually over time as plant are retired and renewable penetration grows. The period of expansion of the market will be valuable as a learning exercise to ensure that the model can be adjusted (but not substantively altered) in this initial phase. Any errors on the estimate for a capacity requirement would, therefore, occur when the market was small ensuring that the total costs of these errors were minimised.

Consultation question	[page 199]
25	**What is the most appropriate design of Capacity Market for GB and why?**

Response	In addition to the comments in response to the consultation above, the most appropriate design is a reliability market with a specific focus on delivering despatchable low carbon generation and DSR capacity. In addition, the market should be designed to address not only periods of generation scarcity but excess generation.

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	A capacity mechanism will be required at some point in the future. The EMR is the appropriate vehicle for the establishment of a mechanism that is fit for purpose for the coming years. The benefit of a mechanism is ensuring energy security which is not only economically vital but also politically necessary. Consumers and industry both need a mechanism to be developed but the key area that still fails to receive sufficient focus is how to deliver the mechanism at lowest cost to consumers and, at the same time, exploiting the opportunity to enable consumers (of all scales) to participate in, and benefit from, the capacity market.

Consultation question	**[page 211]**
27	**Which Capacity Mechanism should the Government choose for the GB market and why?**
Response	The most appropriate design is a reliability market with a specific focus on delivering DSR and despatchable low carbon generation capacity.

Please select the category below which best describes who you are responding on behalf of.

- ☒ Business representative organisation/trade body
- ☐ Central Government
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- ☐ Medium business (50 to 250 staff)
- ☐ Small business (10 to 49 staff)

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

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