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4th October 2011

RWE UK response to the Consultation on Possible Models for a Capacity Mechanism

RWE welcomes the opportunity to respond to this consultation. We are responding on behalf of RWE companies operating in the UK:

- RWE npower owns and operates one of the largest and most diverse portfolios of power generating plant in the UK with over 9,000 megawatts (MW) of large gas, coal and oil-fired power stations and cogeneration plant. Our retail arm, npower, is one of the UK's leading suppliers of electricity and gas with around six million customers.
- RWE npower renewables, the UK subsidiary of RWE Innogy, is one of the UK's leading renewable energy developers with an operational portfolio in the UK of 535MW and a potential UK development portfolio of over 8,500MW, including wind farms, hydro plant and biomass generation to produce sustainable electricity.
- RWE Supply & Trading is one of the leading companies in European energy trading and is responsible for all of RWE's activities on the international procurement and wholesale markets for energy.
- Our joint venture with E.ON UK, Horizon Nuclear Power, is developing up to 6GW of carbon free nuclear power.

We have carefully considered Appendix C of the White Paper "Consultation on possible models for a capacity mechanism". When viewed in conjunction with the rest of the White Paper we would suggest that a clear and transparent structure needs to be put in place to further develop the EMR proposals. We have separately submitted a suggestion for how this could be taken forward. This is necessary so that momentum is not lost for the timely delivery of the EMR White Paper proposals and associated legislation which is essential for investment needs.

We give detailed responses to the questions in the attached appendix and a summary of the main points below.

- The present market arrangements provide the appropriate signals for investment to take place in supply and demand, they should be further strengthened by addressing the known deficiencies and we have provided

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detail on this below.

- If a capacity mechanism is to be introduced it should take into account the cost to the consumer.
- It should be consistent with other policy objectives.
- A stable market is likely to be more attractive to investment; a capacity mechanism that is subject to continuous change would not be beneficial.
- The affordability of a capacity mechanism needs to be considered in the wider context of EMR.

We remain of the opinion that the case for introducing a capacity mechanism has not been made. Such an intervention in the market will undermine the capability of the market to deliver an efficient combination of generation capacity and demand response at lowest cost to consumers. It simply is not possible to define the future energy mix or response capability at the point at which a problem might arise, so any proposed solution is unlikely to achieve the desired outcome.

We believe that there is a significant cost to the consumer of bringing in a capacity mechanism. Our estimate of the incremental cost of holding a Last Resort Strategic Reserve mechanism is £300-650m[1] and for a market wide option, £7.5bn.[2] These are the direct costs of introducing such mechanisms, there are other indirect costs particularly associated with a market wide mechanism that stem from introducing an inefficient solution into the market.

Experience around the world suggests that capacity mechanisms have a number of undesirable effects on the economic and efficient operation of electricity markets i.e. they undermine price signals, damage liquidity, impact on the efficient development of demand-side response, are subject to continual refinement, forestall the innovative development of market-based solutions such as storage, interconnection and energy efficiency and are likely to adversely impact on the CO_2 intensity. Furthermore, there is no guarantee even with a capacity mechanism that overall security of supply will be enhanced if the subsidised capacity is of the wrong type, or in the wrong place.

In particular, robust price signals will play a critical role in the successful deployment of smart metering and the participation of the demand side in the electricity trading arrangements. Any intervention that dilutes or impacts on the price signals such as a capacity mechanism will threaten the success of this policy area, which will play an increasingly important role in balancing the system going forward and on which significant resources have already been committed.

As DECC have recognised in the White Paper, there are known issues with the present cash out arrangements that require review in the context of the increased penetration of intermittent or inflexible low carbon generation. These arrangements should be improved to make them more cost reflective of some of the actions that National Grid takes to balance the system. Examples of these are the methodology used to price the reserve contracts and the lack of any pricing signal when demand control is instructed. Correctly pricing these actions would produce imbalance prices that would provide signals to parties to balance the system either by increasing supply or reducing demand.

Successful resolution of these issues will not only provide signals in the short term but will, via forward markets, feed into future investment decisions on capacity and delivery of demand-side initiatives such a smart metering and associated tariffs, without the unintended and adverse effects of a capacity mechanism.

[1] Present Value 2015 to 2025, real 2010
[2] Present Value 2015 to 2025, real 2010

We recognise that the government is minded to introduce either a "Targeted Mechanism" or a "Market Wide Mechanism". From the information given in the white paper we have found it difficult to understand how a "Market Wide Mechanism" could operate with the present market arrangements. We believe that of the two proposals this is most likely to have the most damaging effect on the market and prove to be the most costly for the consumer.

However, a "Last Resort Strategic Reserve Capacity Mechanism" could be made to work within the scope of the present market arrangements as a form of safety net arrangement.

We see the key components being;

- A statement of the "strategic need" requirement and this conditions under which the mechanism would be triggered.
- A definition of the "last resort" circumstances in which the capacity would be utilised.
- A reflection of utilisation into the cash out arrangements that reflect the marginal cost of the capacity at prices above the price of maximum generation and just below the Value of Lost Load.
- Last Resort Strategic Reserve is available for dispatch by the System Operator subject to pre-established rules and procedures.
- Remuneration of the capacity under a contract outside the balancing mechanism i.e. providers will not receive cash out price.
- Capacity contracts will include payments for availability and penalties for non performance.
- Independent institutions responsible for procuring and managing the capacity.
- Recovery of the costs of the capacity from all customers on non discriminatory terms that do not distort wholesale or retail competition.
- Embedding the service within core industry codes, this would make it subject to industry governance arrangements rather than change by government.

To conclude, our priority would be to improve the signals that come from the present cash out arrangements, this will deliver investment in both supply and demand response at least cost to the consumer. Should the government introduce a capacity mechanism then we believe that a "Last Resort Strategic Reserve Mechanism" is the next best solution. The issues of slippery slope and adjustments to price and utilisation can be overcome as we have described in our response. A market wide capacity mechanism will be most detrimental to the market and is most costly to the consumer and should not be introduced.

We would be happy to discuss our response further.

Yours sincerely,

[redacted]

Wholesale Economic Regulation Manager

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.

Respondent Details	
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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

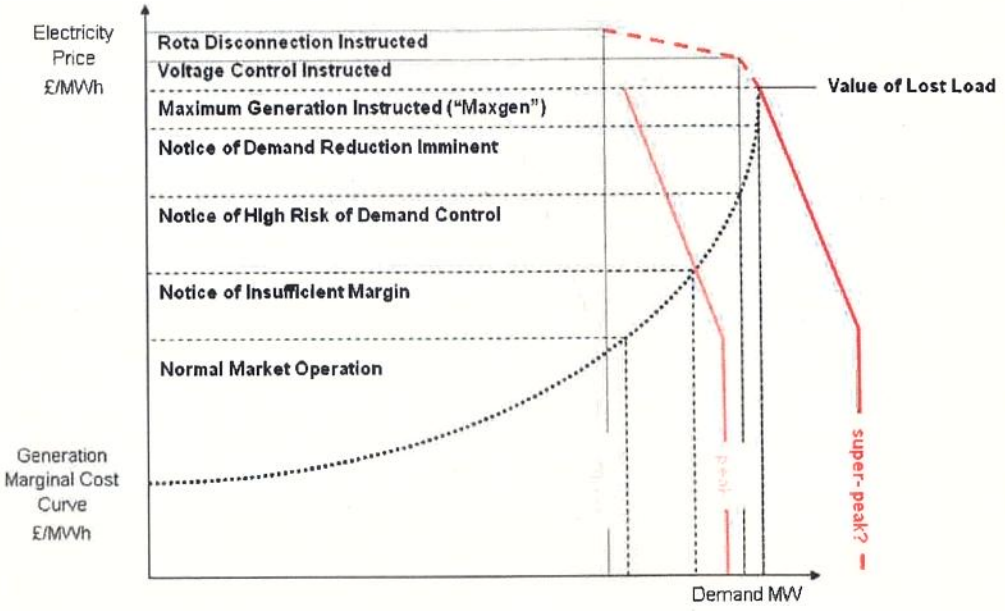
Consultation questions

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

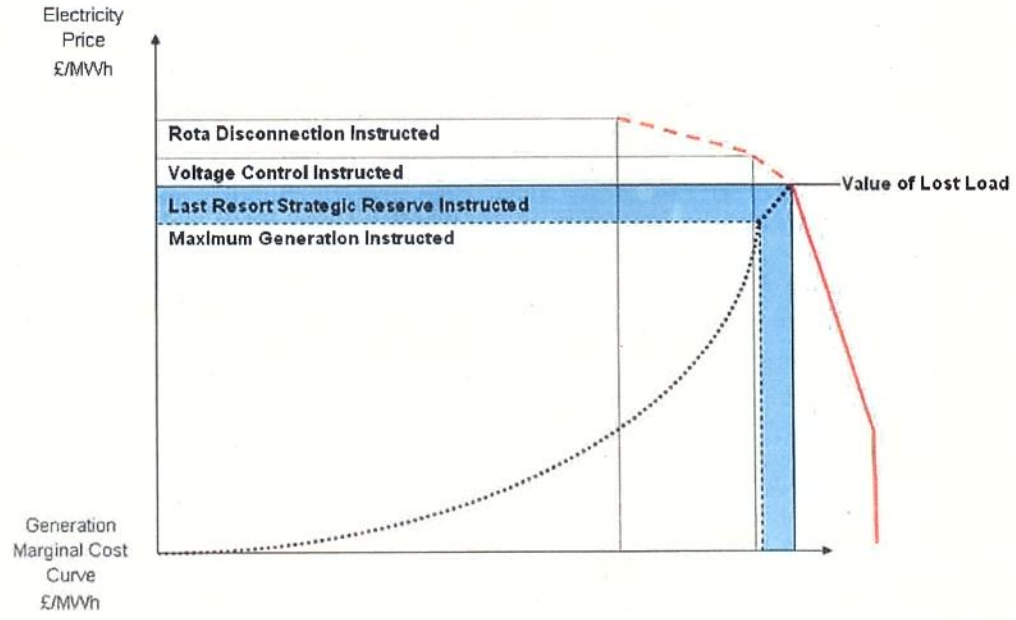
Targeted mechanism

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	**Market Distortion** Figure C3 captures a number if the key concerns that might arise from a targeted Capacity Mechanism. The most important outstanding issue is the need to ensure that any capacity mechanism should not interact directly with the existing electricity market at all. Above all, there should not be any de-facto cap on prices resulting from the existence of the strategic reserve. Therefore, the mechanism must be considered as a strategic holding of capacity that is only ever used in defined circumstances as a last resort after all other market solutions have been fully utilised. This means that all feasible offers have been utilised in the balancing mechanism, demand side has responded to the market signals and maximum generation has been dispatched. A last resort strategic reserve can only, therefore, be used as a measure that is required to avoid involuntary demand reduction in emergency circumstances. In the two diagrams below we show how such a mechanism could fit into the despatch order.

Current market operation



Last Resort Strategic Reserve used to avoid voltage control at 'super-peak': priced between Maxgen and VOLL



Furthermore, to ensure the correct market signals the price of strategic capacity in the balancing mechanism should be in excess of the last offer instruction based on normal market operation but below the value of lost load.

It should be noted that the current cash out arrangements require further consideration particularly with respect to marginal pricing, dual cash out and pricing of demand control to ensure that the correct market signals are maintained in a system with considerable intermittent or inflexible generation.

We recommend that the Strategic Reserve should be reflected into cash out at a fixed and transparent Offer price above the price of maximum generation but below the price of the Value of Lost Load. The dispatch should reflect the prevailing conditions on the transmission system. The existing NGC notifications (Notice of Insufficient Margin, High Risk of Demand Reduction and Demand Control Imminent) provide a framework for the dispatch decisions and we would not envisage that Strategic Reserve would be instructed until a market notice that Demand Reduction is imminent has been issued to the market (this may depend on whether demand control is reflected into cash out).

We also recommend that Strategic Reserve is not remunerated through offers in the balancing mechanism, though it may be instructed by National Grid using the balancing mechanism processes (i.e. as an offer). Strategic Reserve should be remunerated by payments for availability and reliability as well as short run dispatch costs through a "capacity payments mechanism" with these costs recovered equitably from customers.

Transparency and Oversight

We believe that it is possible to design a Strategic Reserve option that can be procured by a "body independent of commercial and political conflicts", such that the measures will be able to deliver an incremental level of capacity over and above that which the market would normally deliver. A public good level of capacity.

Critical to the creation of the strategic reserve option is a clear understanding of the circumstances (how, when and the circumstances by which the price may be adjusted) the strategic reserve will be utilised.

It is possible to give the market confidence that government will not be able to adjust the prices and parameters of the service by embedding the service within existing codes e.g. Grid Code, Balancing Principles Statement, National Grid Transmission Licence and the Balancing and Settlement Code. Each of these documents has a governance process associated with it that would need to be adhered to before the service could be changed. We have provided more detail on this in our answer to Q7 and in a separate note to DECC.

We believe that work is required to understand the interaction with normal market operation and in particular how the dispatch features in the calculation of cash out prices. It is essential that strategic reserve is considered as a "last resort service" which will be utilised once all other market solutions have been exhausted at times of system stress. Once utilised that price exposure to market participants should reflect the extreme nature of the circumstances of operation with prices at or close to the accepted level of the value of lost load (VOLL). In the current market we do not believe that strategic reserve should be dispatched prior to the instruction of "maximum generation" offers and that the price should exceed these offers.

It should be noted that strategic reserve should not be remunerated at these prices but should be paid for maintaining availability and reliable operation. The high cash out prices represent a market signal of the imbalance costs for parties and thereby provide appropriate economic incentives for efficient market operation. This will help to minimise the strategic reserve requirement (however this is defined) and reduce

	the customer costs associated with holding strategic reserve. It is not clear under the "mitigation" measures what is meant by "regulated activity". It appears to be implied that the assets could be regulated assets (i.e. utility assets) and subject to some form of regulatory oversight. **Contract Flexibility** By its very nature the level and extent of the strategic reserve requirement (the capacity and duration) must be established in advance and approved by the appropriate regulatory authorities and the predetermined capacity requirement. Once this is defined the contracts are relatively straightforward with standard terms for availability and reliability (including penalties for "non delivery") and verification arrangements. It is crucial that once contracted to provide strategic reserve the capacity is disqualified from operating in the "normal" electricity market.

Consultation question	**[page 168]**
2	**How long should the lead time for Strategic Reserve capacity procurement be and why?**
Response	The energy bill suggests a forward looking capacity measure for the next four years which suggests that it will not be possible to procure strategic reserve further ahead than four years. This is not necessarily an problem as market participants will use this information as part of their decision making process which will consider a number of issues including lead times and capacity margins further out than four years. This should become another market signal; the issue will be how the central procurer of strategic reserve responds to this signal and how the market interacts with this. In most cases four years should give sufficient time for the market, either supply or demand to respond to market signals. If the need for a last resort strategic reserve is established, an economic and efficient procurement arrangement should be put in place. This should ensure that reliable capacity is available in the required timescales to meet the need requirement and should reflect investment lead times for existing or new capacity that is dedicated to the delivery of the Strategic Reserve.

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 Strategic Reserve contracts should reflect the need requirement established by the independent procurement body. These contracts should be in a standard form and include clauses with respect to availability and payment. The contract should ensure that the capacity is exclusively dedicated to the delivery of the Strategic Reserve and does not allow the capacity to operate in the normal electricity market while

	it remains under contract. This will ensure that Strategic Reserve is available at all times to perform the function for which it has been contracted. We believe that it would be wholly inappropriate to enable dedicated and contracted Strategic Reserve capacity to operate in the normal electricity market. The length and duration of contracts should be decided by the procurement body. They will need to consider the risks of locking themselves in to long term contractual arrangements that may end up being uncompetitive. It may be better for consumers to have shorter term flexible arrangements.

Consultation question	[page 169]
4	**Which criteria should providers of Strategic Reserve be required to meet?**
Response	The criteria that Strategic Reserve providers should meet is intrinsically linked to the need established by the independent procurement body. For example, if the need is to meet a specific peak demand requirement then flexible characteristics may be important. However, if the need is associated with winter anticyclones and non availability of variable generation then the need may be associated with extended operation over periods of high demand. We would envisage that the procurement body would procure a range of different types of capacity from both supply and demand, with differing technical characteristics related to ramping rates, minimum on time, warming periods and length of sustained running. We also believe that the criteria should be extended to include wider energy market elements related to security of supply that reflects the strategic nature of the capacity. This must include for example the ability to store fuel on the site to enable independent operation for a defined period, such operation for extended periods during the two week winter anticyclone. In addition, the criteria should reflect the fact that the times when the capacity is likely to be utilised may coincide with periods of peak demand in the gas market so that the ability to operate with alternative fuels is extremely important. There should also be locational criteria. The last resort strategic reserve should not be the wrong side of transmission constraints and thus unable to fulfil the service for which it has been contracted. With respect to payments under the contracts we would expect that the performance characteristics of the plant would be remunerated solely through the contracts by for example payments for hot standby. Finally the criteria should not exclude the possibility that a significant proportion of the capacity could be delivered by "demand side response, storage and other forms of non generation technologies and approaches" as noted under question 5.

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	We believe that the most effective delivery of Demand Side Response, storage and other forms of non-generation technologies and approaches is through the existing energy market in response to market signals and so a Last resort Strategic Reserve option is the best way of achieving this. The smart metering programme will give considerable scope and the incentives for an active demand response which will reduce costs to consumers. Likewise reform of cash out to strengthen incentives to balance will strengthen the role of demand response in the day ahead market. However as noted above we believe that the criteria and need requirement may enable demand side response, storage and other forms of non generation technologies and approaches to participate under strategic reserve. However, it should be noted that such activities should be confined to those that are over and above a normal market response.

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	We do not understand what is meant by "economic dispatch" described under section C2.19. It appears as though it is envisaged by DECC that Last Resort Strategic Reserve will be dispatched at a level that would cap prices in the balancing mechanism to a level just above that of the last economically despatched offer. In our view this would not send the correct signals to the market to make flexible generation or demand available. As noted above we believe that the System Operator should instruct the dispatch using the normal market mechanisms (this may allow for warming of capacity). Flexibility of dispatch may be required since it is difficult to define all emergency circumstances under which the capacity could be used. It may be appropriate to utilise the existing tagging methodology to manage the way the capacity offers are used in cash out provided that it can only be used in emergencies and if all available market solutions have been exhausted. The "economic dispatch" model appears to us a variant of the last resort model in the consultation document. However, the key issue that seems to be underlying these sections is the cash out pricing signal. As noted above we believe that the price of strategic reserve reflected into cash out should always be above maximum generation but below the Value of Lost Load to ensure that the correct market signals are maintained. The circumstances of the utilisation should then determine the actual dispatch decision. We strongly dispute the idea that (in GB) an individual generator can benefit by with-holding capacity. It is not sensible for the strategic reserve to also be presented as a means to address perceived market power issues, such as the idea that generation companies can manipulate prices by withholding capacity. This is not the case in the competitive GB market and, given the high level of transparency required in the market, such practices would be self-defeating. In any case, trying to address two policy objectives with a single instrument is not advisable. Market power issues should be dealt with

	under normal ex-post competition law and market integrity procedures.

Consultation question	[page 175]
7	**How would the Strategic Reserve methodology and despatch price best be kept independent from short-term pressures?**
Response	There is a solution to the issue of keeping this service independent from short-term pressures. By embedding the service in existing core industry documents it then becomes subject to their governance arrangements. We describe that process below. The provision of Last Resort Strategic Reserve will require a number of changes to core industry documents including: • The Transmission Licence: to enable the System Operator to utilise the capacity procured elsewhere; • The Grid Code: to provide system warnings associated with Last Resort Strategic Reserve and to establish how the service can be dispatched in the balancing mechanism; • The Balancing Principles Statement: to establish the circumstances in which Last Resort Strategic Reserve would be dispatched; and • The Balancing and Settlement Code: to establish the price of the Last Resort Strategic Reserve in electricity cash out and the settlement arrangements for bids and offers associated with dispatch instructions. It is envisaged that the Last Resort Strategic Reserve would be available to the System Operator for dispatch in defined circumstances using existing dispatch processes (bids and offers) and settlement but with administered prices used in electricity cash out. The following sections consider in greater detail the potential changes to the relevant core industry documents to deliver these arrangements. **The Transmission Licence** Changes to the Transmission Licence are required to enable the System Operator to use Last Resort Strategic Reserve as an additional balancing service. This reflects the fact that the reserve is procured by a third party and becomes available to the System Operator for dispatch in the GB balancing mechanism. Changes to the GB Transmission Licence are governed by Ofgem as detailed under the Electricity Act. Ofgem can propose changes and the licensee and other interested parties can accept these or seek a referral to the Competition Commission. **The Grid Code**

The Grid Code governs the operation of the GB electricity system and includes amongst other things arrangements for the instruction of Demand Control and Demand Reduction in OC 6. It is proposed that the OC6 arrangements form the basis of a new Grid Code section that deals with the circumstances surrounding the dispatch of Last Resort Strategic Reserve.

Industry parties can propose changes to the Grid Code which are discussed by the Grid Code Review Panel. They are then sent out for consultation to the industry and a recommendation is made to the Authority who makes the final decision.

The Balancing Principles Statement

The Balancing Principles Statement is a document produced under the Transmission Licence that sets out in broad terms the arrangements that govern the dispatch of balancing services in the balancing mechanism. The document is subject to National Grid governance under the terms of its licence. It is subject to audit and can be changed from time to time following industry consultation by National Grid. The statement is approved by Ofgem.

It is proposed that a new section is introduced into the Balancing Principles Statement that describes the circumstances under which Last Resort Strategic Reserve would be utilised (this is derived from the current provisions which relate to Demand Control).

The Balancing and Settlement Code

The Balancing and Settlement Code (BSC) is a legal document which defines the rules and governance for the balancing mechanism and imbalance processes of electricity in Great Britain.

Changes are required to the Balancing and Settlement Code to introduce an administered price that is associated with electricity cash out.

If implemented, the price of Last Resort Strategic Reserve can only be altered though a modification to the Balancing and Settlement Code. This may be achieved through a normal process which takes several months or through an urgent process which may take several days or weeks. In either case the process includes a consultation with industry, a determination by the Panel and a final decision by the Authority. This decision may be subject to an appeals process.

Summary

We have set out at a high level how the utilisation of Last Resort Strategic Reserve within the current industry rules. Changes are required to the Transmission Licence that would enable the System Operator to access the reserve. Changes to the Grid Code and Balancing Principles Statement are required to define when the reserve can be operated. Finally changes to the Balancing and Settlement Code are required to introduce administered cash out price for Last Resort Strategic Reserve and enable the payment of the