

[REDACTED]  
[EMR-condoc@decc.qsi.gov](mailto:EMR-condoc@decc.qsi.gov)

*Promoting choice and value for  
all gas and electricity customers*

Direct Dial: [REDACTED]

Email: [REDACTED]

Date: 4 October 2011

Dear [REDACTED]

**Ofgem response to EMR consultation on possible models for a capacity mechanism**

Thank you for the opportunity to respond to the Electricity Market Reform (EMR) White Paper consultation on possible models for an electricity capacity mechanism. We welcome the EMR, we appreciate the level of engagement to date, and we remain committed to working with the Government to deliver the EMR objectives at best possible value for consumers. While we have not addressed each of the consultation questions from Annex C individually, our response attempts to capture the range of issues upon which Government is seeking input.

In our February 2010 Project Discovery consultation document we highlighted the risks to electricity security of supply. As thermal plant will need to operate at lower load factors to accommodate an increasing proportion of subsidised intermittent plant, it will increasingly rely on high prices during periods of system scarcity to make an adequate return. As part of our appraisal of the current market arrangements we raised concerns that short term cash-out (imbalance) price signals may not rise sharply enough during periods of scarcity, which in turn may impact new investment decisions. While we did not put forward a preferred policy solution, we recognised the arguments for addressing this so called 'missing money' problem via some form of capacity mechanism.

We therefore welcome the Government's focus on security of supply as part of the EMR. Our focus is now on exploring the various options put forward for a capacity mechanism, and coming to a view on the design that best protects current and future consumers in GB.

In our response to the December EMR consultation document we raised concerns with the particular form of targeted capacity mechanism put forward. Along with a number of other respondents, we were concerned that it could distort investment decisions in the energy market, leading to a 'slippery slope' in which ever increasing volumes of capacity are contracted through the mechanism. We therefore welcome the Government's consideration of a wider range of options in the White Paper.

Although we recognise the need for investor certainty, these are potentially fundamental changes to the market arrangements which require careful consideration. While it will be important for Government to signal its policy intent, given the challenging timeframes it may not be possible to lock down all the detail in time for primary legislation in early 2012. Indeed, if the mechanism is to strike the appropriate balance between providing investor certainty on the one hand, and sufficient flexibility to adapt over time on the other, it may not be desirable to include significant levels of detail in legislation. In our view, to achieve this balance the details of the capacity mechanism should be implemented as part of the

1 of 7

existing market arrangements (i.e. through codes and licences), which are subject to regulation and prescribed modification processes. Such an approach would also ensure that the mechanism appropriately interacts with other closely related elements of the market arrangements such as electricity cashout, reserve procurement, and constraint management.

As the White Paper identifies, there are close interactions between the capacity mechanism and a number of existing and potential Ofgem projects. For example:

- There are clear links between any capacity mechanism and Ofgem's potential *Electricity Cashout Significant Code Review (SCR)*, which will explore the case for further sharpening of price signals in the balancing mechanism.<sup>1</sup> As part of the review we will also consider the appropriate role for the Value of Lost Load (VoLL) in the arrangements, which has direct implications for security of supply.
- There are clear interdependencies between Ofgem's *Liquidity project* and the EMR. The liquidity project is concerned with making sure that participants in the GB power market have the products and signals they need to operate effectively – and this should take into account any new mechanisms introduced as part of the reform package, including the capacity mechanism.
- As part of our *Transmit* project we are considering the effectiveness of the current system of transmission charging, which has implications for GB security of supply and the efficient pricing of constraints.

Below we set out our high-level views on the two broad capacity mechanism design options put forward by Government in the White Paper. Further detail is provided in the Annex.

#### *Strategic reserve:*

- To avoid distorting investment in the market, strategic reserve should only be dispatched as a last resort, at a reasonable estimate of the Value of Lost Load (VoLL).
- New capacity funded through the strategic reserve mechanism should not be allowed to re-enter the energy market, and consideration should be given to the appropriate treatment of non-new capacity upon expiry of the strategic reserve contract.
- Setting a dispatch price for strategic reserve below VoLL could preclude and potentially undermine Ofgem's pending review of electricity cashout.
- It is unlikely that DSR or storage would be able to meaningfully participate in a strategic reserve mechanism.
- A strategic reserve might be useful as a means of providing physical assurance alongside a purely financial reliability contract mechanism.

#### *Capacity market:*

- Financial-only reliability contracts could be an effective market-based mechanism for incentivising investment in new capacity.
- With the correct design, cashout reform and (potentially) a small physical strategic reserve, the risks of financial-only reliability contracts are manageable.

<sup>1</sup> We expect to consult on the scope of a potential Electricity Cashout SCR in the coming months.

- Financial reliability contracts ensure that customers are broadly protected against the consequences of very high spot prices, while a strategic reserve could provide the required physical insurance. This allows cash out to be reformed to reflect the full value of security of supply, and ensures appropriate availability incentives on holders of reliability contracts. The only potential 'losers' would be speculators.
- Although a physical capacity mechanism could deliver the desired capacity margin, it would likely require a costly and complicated monitoring process to prevent gaming. It is not obvious why fines for non-availability would be substantively more compelling than the financial exposure under non-physical contracts.
- DSR and storage should have similar incentives to generation under a market-wide mechanism.<sup>2</sup> However if a physical capacity mechanism is chosen, physical verification of DSR would be particularly challenging.

We are committed to working with the Government to deliver the EMR objectives at the best possible value for consumers. We intend to continue our engagement with the Government at all levels to provide constructive and expert input across the whole spectrum, to ensure the interests of existing and future consumers are protected. We look forward to engaging with the Government to understand our enduring role as the consultation progresses.

If you have any further questions regarding our response please feel free to contact either [REDACTED] or [REDACTED]

Yours sincerely,

[REDACTED]  
Senior Partner, Markets  
Ofgem

<sup>2</sup> Although the extent of likely participation from storage in a capacity mechanism is unclear.

## **Annex: Detailed views on capacity mechanism design**

### *Strategic reserve*

#### **Summary:**

- To avoid distorting investment in the market, strategic reserve should only be dispatched as a last resort, at a reasonable estimate of the Value of Lost Load (VoLL).
- New capacity funded through the strategic reserve mechanism should not be allowed to re-enter the energy market, and consideration should be given to the appropriate treatment of non-new capacity upon expiry of the strategic reserve contract.
- Setting a dispatch price for strategic reserve below VoLL could preclude and potentially undermine Ofgem's pending review of electricity cashout.
- It is unlikely that DSR or storage would be able to meaningfully participate in a strategic reserve mechanism.
- A strategic reserve might be useful as a means of providing physical assurance alongside a purely financial reliability contract mechanism.

Our view is that the introduction of a strategic reserve of any given design implies acceptance that the energy-only market (possibly with financial reliability contracts) will continue to be relied upon as the main mechanism to deliver electricity security of supply. Strategic reserve can be thought of as an 'insurance policy', recognising that the social (or political) costs of firm disconnection may be greater than the private costs (the 'value of lost load' or VoLL). With this in mind, a strategic reserve should be dispatched as a last resort in the Balancing Mechanism (BM) at a reasonable estimate of VoLL. It should therefore not interfere at all with market-led investment, avoiding the 'slippery slope'. While we recognise the potential political sensitivities associated with idle plant, long term credibility is of utmost importance to market-led investment.<sup>3</sup> Indeed, if the Government is minded to introduce a strategic reserve, in our view if the plant is never dispatched (and there are no firm disconnections), the mechanism should be considered a success.

As an alternative, strategic reserve could be dispatched as an instructed imbalance in the BM. There could be clear rules established to ensure the strategic reserve is only dispatched after the System Operator (SO) has exhausted all other balancing options, and only in preference to involuntary voltage reduction and/or firm disconnection. This could avoid the need to specify a strategic reserve dispatch price, with cashout prices remaining at the prevailing price prior to strategic reserve dispatch, and only going to VoLL if firm disconnection is still required.

Most importantly, this discussion on the dispatch price for strategic reserve should in no way pre-empt Ofgem's potential Electricity Cashout SCR, which we expect will explicitly consider the pricing of non-costed SO actions such as voltage control and firm disconnection (and thus estimates of VoLL).

Strategic reserve may not be the best mechanism to bring on any significant increase in DSR or storage. While DSR could in theory participate, it would have to be in the form of 'emergency' rather than 'commercial' DSR. There may be some large customers who insist on maintaining a firm load from a commercial perspective, but who could live with being disconnected in an orderly fashion by the SO in an emergency (for a fee). However if the

---

<sup>3</sup> We note that such political sensitivities could be ameliorated if financial reliability contracts are implemented alongside a limited physical strategic reserve. Such contracts would effectively hedge customers against extreme high prices (i.e. above some pre-determined 'strike price').



strategic reserve is only to be dispatched at VoLL, then any voluntary DSR would have already come off the system (assuming cashout is reformed). Similarly, we would expect storage operators to actively arbitrage in the market prior to the cashout price going to VoLL.

For the mechanism to be effective there needs to be a credible commitment from Government to keeping the strategic reserve out of the market. This commitment should also extend to contract durations – as if at contract expiry the strategic reserve is allowed to re-enter the market and extract energy-only rents from incumbents (perhaps attractive to policy makers in the short term), long term investment signals could be damaged. In this respect, for new capacity funded through the strategic reserve mechanism, it may best be considered a 'one-way street'. Consideration should also be given to treatment of non-new capacity at the expiry of the strategic reserve contract.

### *Capacity market*

#### *Summary:*

- Financial-only reliability contracts could be an effective market-based mechanism for incentivising investment in new capacity.
- With the correct design, cashout reform and (potentially) a small physical strategic reserve, the risks of financial-only reliability contracts are manageable.
- Financial reliability contracts ensure that customers are broadly protected against the consequences of very high spot prices, while a strategic reserve could provide the required physical insurance. This allows cash out to be reformed to reflect the full value of security of supply, and ensures appropriate availability incentives on holders of reliability contracts. The only potential 'losers' would be speculators.
- Although a physical capacity mechanism could deliver the desired capacity margin, it would likely require a costly and complicated monitoring process to prevent gaming. It is not obvious why fines for non-availability would be substantively more compelling than the financial exposure under non-physical contracts.
- DSR and storage should have similar incentives to generation under a market-wide mechanism.<sup>4</sup> However if a physical capacity mechanism is chosen, physical verification of DSR would be particularly challenging.

We believe that Government should give due consideration to financial reliability contracts in its assessment of design options for a market-wide capacity mechanism. Financial reliability contracts can provide (oblige) a more effective allocation of risk between generators and suppliers, with the stability in cash flows provided by the 'option' fees serving as a catalyst for new investment in capacity.<sup>5</sup> In this respect they can be thought of as a more effective market-based mechanism for incentivising capacity investment (relative to energy-only prices), which is in accordance with Government's objectives.

However, while financial reliability contracts may provide the right incentives to build physical capacity, there is no firm guarantee that the Government's 'desired' physical capacity margin will be delivered by the mechanism alone. At the margin there may be some parties willing to take a punt – that is, accept the option fee without physically hedging against the possibility that reference prices will exceed the strike price. This incentive may increase as the perceived scarcity on the system reduces (i.e. as the

<sup>4</sup> Although the extent of likely participation from storage in a capacity mechanism is unclear.

<sup>5</sup> In theory, the strike price should approximate the short-run marginal cost (SRMC) of the marginal plant on the system, and the reference market should be set as close to real-time as possible.

capacity margin becomes greater). Sharpened cash out and compensation (at VoLL) for firm disconnection can enhance further the incentives to physically hedge. However, we recognise that it would still be possible for parties take a 'naked exposure' for short term gain. Financial (rather than physical) collateral requirements would thus become important in the mechanism design.

While there are clearly a number of design issues to be worked through (including impact on liquidity, price setting etc), in our view the risks associated with financial reliability contracts appear manageable. By allowing potential generation investors to exchange a volatile for a stable set of cash flows, there could be a significant increase in the capacity margin relative to that provided by energy-only price signals. However, given that the new equilibrium will be market-based, there could be a gap between this new equilibrium and the Government's desired physical margin.

If Government considers any firm disconnection to be unacceptable (even if customers are compensated at VoLL), it could put in place a limited physical strategic reserve alongside financial reliability contracts. The strategic reserve could be dispatched at VoLL, thus effectively acting as an equally costed alternative to firm disconnection. The combination of these two mechanisms should not only ensure that the desired margin is delivered, but that the political pressure on use of the strategic reserve is minimised. This is because with financial reliability contracts consumers would only ever pay the strike price for their energy, and are therefore protected against the extreme high prices that may concern Government. Such an approach would allow cash out to be reformed to reflect the full value of security of supply, and ensures appropriate availability incentives on holders of reliability contracts. The only potential 'losers' would be speculators.

We recognise that a physical market-wide capacity mechanism could also deliver the Government's desired capacity margin (and we note the international examples). If physically backed reliability contracts were introduced, scarcity on the system would likely be reduced to such an extent that paybacks above the strike price would become rare. In such a system the main function of the paybacks would be to curtail the exercise of market power, however we recognise that they could also potentially act as an additional incentive not to game the physical availability testing regime. Further administrative penalties for non-availability during periods of system stress may then be appropriate.

The administrative burden associated with physical availability testing, monitoring and enforcement (for industry, SO and regulator) should not be under-estimated. This is particularly the case in a system the size of GB, with a bilateral market. In our view this is likely to need a heavy-handed and interventionist system, which may be both unnecessary and undesirable. Further, even with all this administrative expense, such a system could still be far from perfect – it does not guarantee physical security (e.g. recall the examples of 'cardboard generators' from the Pool days). Careful thought would need to be given to the incentives provided to ensure physical back-up of contracts. Once the existence of physical plant is verified, a system of additional availability incentives would do no more than sharpen the financial incentives that already exist. It would not guarantee physical availability. Anything stronger (e.g. licence breach, civil or criminal offence) would need to be able to distinguish between 'fraudulent' gaming and the innocent technical failure that besets even the most reliable plant. This would not be a trivial exercise.

In principle a market-wide mechanism should be open to all capacity on the system, including plant receiving support under a Contract for Difference (CfD).<sup>6</sup> However this obviously raises the issue of potential over-payment for fixed costs. While a seemingly straightforward solution may be to prevent CfD supported plant from participating in the

<sup>6</sup> The extent to which inclusion in the capacity mechanism is desirable may differ by technology. For example, given the inherent variability in wind output, it may not be desirable to allow wind plant to bid into the reliability contract auction. This is because these plant may simply choose not to participate, which could in turn lead to an excess capacity on the system. Rather, it may be better to estimate the contribution that wind plant makes to security of supply on an aggregate basis in the capacity assessment, then remove this de-rated capacity from the reliability contract volume requirement.

capacity mechanism, we would be concerned if despatchable low carbon plant (i.e. nuclear, CCS, biomass) is not sufficiently incentivised to be available at times of system stress. This will obviously become more important as the volume of CfD plant on the system increases.

Therefore the central question appears to be whether and to what extent there will be double payment if CfD plant are allowed to sell reliability contracts. In our view the optimal solution would be to design the CfD and capacity mechanisms together such that double payment could be avoided.<sup>7</sup> However if this cannot be achieved, we would expect the CfD strike prices to adjust (or be adjusted) so as to appropriately take account of the revenues and risks associated with the reliability contract.

We are aware of concerns that the selection of the reliability contract reference market may impact on liquidity. For example, if the reference market is the balancing mechanism, the incentives to forward contract may be affected. One approach may be to exercise the reliability contracts on volumes net of forward contract volumes (to minimise any distortion to forward trading). While this approach may be possible, it would come at the risk of introducing a complex verification scheme which could undermine the mechanism itself. If a physical capacity mechanism is chosen, it is not obvious how physical verification would work under such a scheme, as all forward contracts would also have to be physically backed.

In our view the reliability contract reference market selection does not necessarily introduce any distortion to the incentives to trade forward. The best solution may be to allow the forward market to adapt to the presence of reliability contracts. For existing forward contracts, this would be less problematic under financial reliability contracts because the suppliers with forward purchase contracts at fixed prices could, themselves, sell reliability contracts. If there was a need for physical verification, while future forward contracts could adjust to take account of the risk of paybacks, there may need to be a period of transition for existing forward contracts. This is because generators would be unlikely to use such contracts for a reliability contract, largely due to the difficulties mentioned above with being able to 'verify' their capacity.

Both financial and physical reliability contracts should provide equivalent or even enhanced incentives for DSR to participate alongside generation. However experience from other systems indicates that physical verification of DSR will be particularly challenging and may be prone to gaming. While a financial reliability contracts mechanism could avoid the need for physical verification of the 'firmness' of DSR, the complexity of such a scheme may favour aggregators over individual direct-connect customers.

Finally, it should be recognised that physical interconnector capacity cannot be reserved with market coupling, therefore non-GB generators could not participate in a physical capacity mechanism in GB. In our view the best approach would be to take account of 'de-rated' interconnector capacity in the assessment of capacity need in GB. Provided the capacity mechanism does not distort GB prices (i.e. by providing an explicit cap), market coupling will ensure imports at times of system stress (up to GB VoLL). On the other hand, under a financial reliability contracts model non-GB parties could in theory participate, but given the inability to hedge market risks in GB with non-GB assets (in turn, given the risk of the market prices de-coupling), it would be a highly risky proposition.

---

<sup>7</sup> For example, by avoiding any physical link to availability or output in the CfD design.

