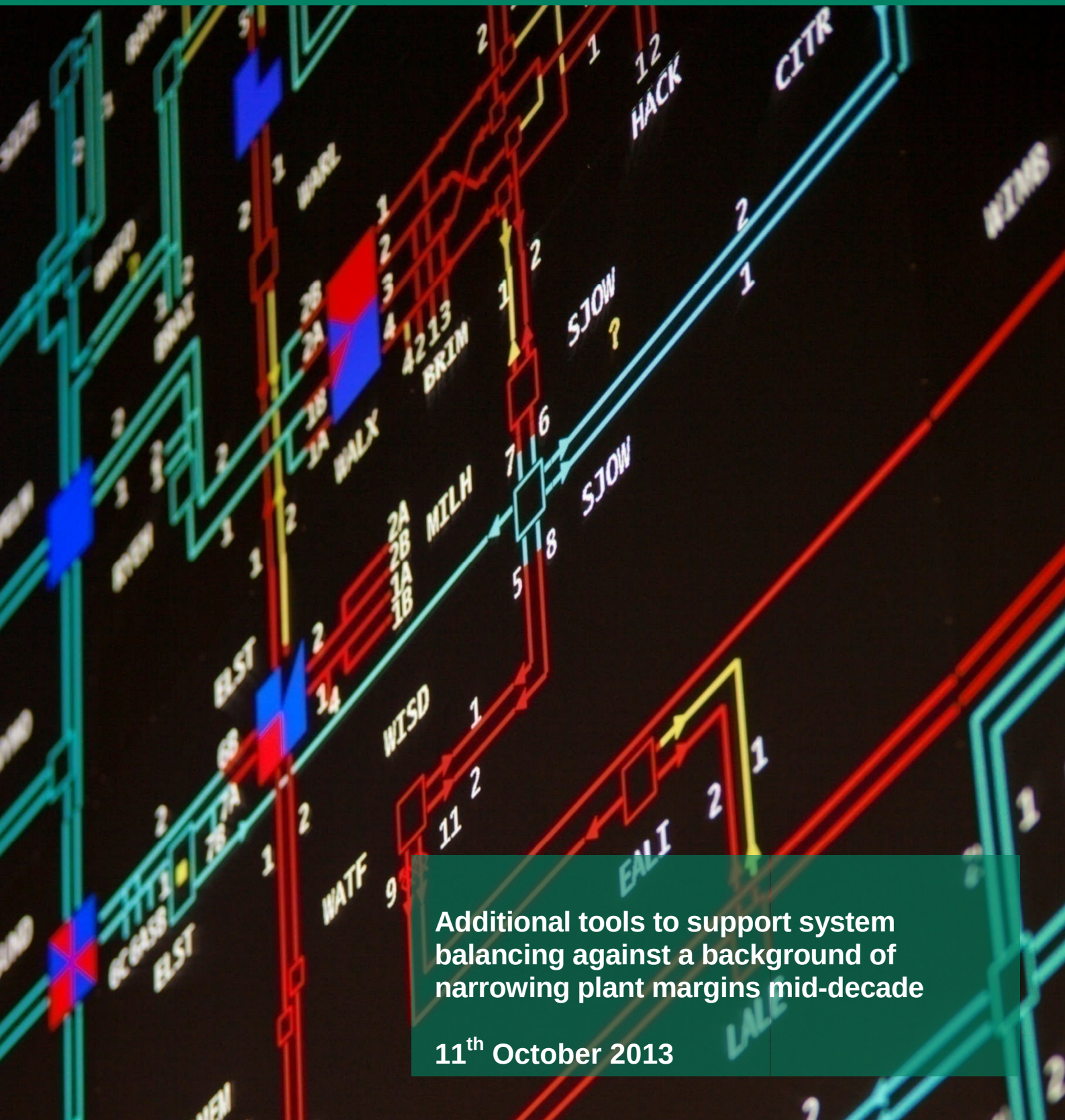
nationalgrid

Demand Side Balancing Reserve and Supplemental Balancing Reserve

Final Proposals Consultation



Additional tools to support system balancing against a background of narrowing plant margins mid-decade

11th October 2013

Final Proposals Consultation on Demand-Side Balancing Reserve and Supplemental Balancing Reserve

Summary

11th October 2013

I. On 27th June 2013, we published a consultation paper seeking views on the introduction of two new balancing services: Demand Side Balancing Reserve (DSBR) and Supplemental Balancing Reserve (SBR). These are intended as additional tools that could support us in balancing the transmission system against an anticipated background of narrowing plant margins in the mid-decade period.

II. The DSBR product is designed to facilitate demand-side participation in balancing the system, by offering non-domestic consumers payment to reduce their demand on occasional winter weekday evenings.

III. The SBR product is designed to secure additional reserves from generation that would not otherwise be available to the market, such that this could be despatched by the system operator as a last resort in the unlikely event that there is insufficient generation available to meet demand.

IV. This consultation process is aimed at developing these two new balancing services and considering whether to seek the necessary approvals from Ofgem that would enable their procurement and use.

The Initial Consultation

V. The initial consultation published in June attracted a great deal of interest. We received 35 responses providing a broad range of comments and feedback and we would like to thank respondents for their valuable input. Some respondents were broadly supportive whilst we also received a variety of comments on specific aspects of the proposals.

VI. For DSBR, a number of respondents suggested that because of low up-front payments and the short term nature of the scheme, the product was not sufficiently attractive to bring forward the quantities that would make it worthwhile. Respondents also saw DSBR as a potentially unreliable resource that could undermine the demand side market and viewed DSBR as an unwelcome and confusing addition to an already active demand side sector. It was also suggested that efforts would be better focused on delivering the transitional arrangements for Demand Side Response (DSR) under the Government's proposed Capacity Market.

VII. For SBR, a number of respondents suggested that the Capacity Market should be brought forward and if this could not be achieved we should buy more Short Term Operating Reserves (STOR) as an interim measure. Concerns were expressed that SBR would undermine price signals and distort the market and that while the intent may be to use SBR only as a last resort, in practice it might be used more often.

Summary

11th October 2013

Revised Product Designs

VIII. Bringing forward the Capacity Market is a matter for DECC rather than National Grid and we believe that buying more STOR would cause more market distortion and be less economic than the SBR product. Thus, despite the reservations of some respondents, we remain of the view that it is prudent to develop and have additional tools available that could be deployed if required. We have, therefore, refined the design of the two reserve products, taking on board many of the comments received through the June consultation process.

IX. For DSBR, we have confirmed that small embedded generation could participate and fixed the upfront set-up payment at £10/kW. We have added the ability to recover these payments if the capability to deliver a DSBR service is not established, both as an additional safeguard and to protect consumer interests. We have refined the calculation of the baseline against which delivery is measured and included a contract threshold of one MW to encourage intermediaries such as aggregators and suppliers to group individual consumers together into material quantities of DSBR. Whilst we accept that there are challenges in recruiting new demand-side resources, we believe that DSBR should be given the opportunity to stimulate growth in this sector and support us in providing additional reserves over the next few years.

X. For SBR, we have removed the 50 MW threshold and clarified the requirement for SBR to be under the direct control of the system operator. Tenderers for SBR contracts must declare that their plant would not otherwise be available in the electricity market or for the provision of balancing services, regardless of whether it is successful in the tender. We have clarified how we would determine the requirement for SBR, and that where economic and efficient to do so, we would aim to procure a sufficient quantity of SBR to meet this requirement at least cost.

XI. SBR contracts would initially be for one or two years during 2014/15 and 2015/16, and SBR plant would be held outside the energy and balancing markets for the duration of these contracts, thus minimising any market distortion they might otherwise cause. We maintain that SBR would only be despatched as a last resort, where we believe that we would otherwise need to invoke emergency measures to maintain a secure balance of supply and demand in real time. This would be enshrined in our Balancing Principles Statement, which we are obliged to follow under our transmission licence.

XII. We believe that we have designed the SBR product to minimise any market distortion and that SBR represents a sensible provision to support us in balancing the system against an uncertain security of supply outlook during the mid-decade period.

XIII. It is important that price signals are not capped or diluted by any use of the DSBR and SBR products. As such we propose that Ofgem's Electricity Balancing Significant Code Review should incorporate these services into the calculation of imbalance prices, thus sharpening the

incentive for market participants to balance their positions. In the meantime, cash out prices would not be diluted by their use.

Consultation Process

XIV. This consultation document sets out our final proposals for the design of the DSBR and SBR products. We would welcome your views on these proposals and the questions posed in Section 7 of this document by Monday 11th November 2013, sent to balancingservices@nationalgrid.com. Please indicate whether your response should be treated as confidential and whether we can share your response with Ofgem. Non-confidential responses will be published on our website.

XV. We propose to hold another workshop to discuss these proposals towards the end of October, and would ask that you register your interest by emailing Clare Mason at clare.mason@nationalgrid.com. Details of the workshop will be made available closer to the time.

XVI. Our procurement and use of balancing services is governed by the statements we are required to publish under Standard Condition C16 of our Transmission Licence, which cover: the Procurement Guidelines; Balancing Principles Statement; Balancing Services Adjustment Data Methodology; System Management Action Flagging Methodology; and the Applicable Balancing Services Volume Data Methodology ('the C16 Statements'). These statements will require modification in order to implement the proposed new balancing services, and these modifications must be consulted on before being proposed to Ofgem for approval.

XVII. Therefore, in parallel to this consultation, we have published a formal consultation on the necessary changes to the C16 Statements in accordance with Standard Condition C16 of our Transmission Licence. This document consults on three options for implementation of both DSBR & SBR, implementation of SBR only, and implementation of DSBR only, based on the product designs set out in these final proposals. It should therefore be noted that proposed changes to the C16 Statements associated with the procurement and use of one or both of the proposed products may be taken forward and presented to Ofgem for approval. The formal C16 consultation can be found at the following link, www.nationalgrid.com/uk/electricity/balancing/consultations/.

XVIII. If you have any questions on these proposals please contact Peter Bingham on 01926 655568 or via email at peter.bingham@nationalgrid.com.

Summary

11th October 2013

Next Steps

XIX. In light of responses to both this and the formal C16 consultations, we will decide on whether to take either or both of these products forward for approval. The formal process requires that, if we decide to proceed, we present the proposed changes to the C16 Statements to Ofgem within seven days of the formal consultation closing, after which Ofgem has up to twenty eight days to decide whether to accept those changes. As part of our submission to Ofgem, we will present a report summarising the design of the product or products and the issues raised by both this and the formal C16 consultation.

XX. If Ofgem approves the changes, we will proceed with implementation. This will involve finalising the tender process and associated contracts, assessing whether there is a need to procure and establishing the quantity required. This will also involve seeking a modification to our licence to allow for the funding of these activities. If we decide to procure, we will then establish the systems and processes necessary to enable these products to be used.

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Section 1 – Introduction

1. On 27th June 2013, we published a consultation document (the "June consultation paper") seeking views on the introduction of two new balancing services, being Demand Side Balancing Reserve (DBSR) and Supplemental Balancing Reserve (SBR), which are intended as additional tools to assist with balancing the electricity transmission system against an anticipated background of tightening margins in the mid-decade period.

2. A stakeholder event was held on the 17th July 2013.

3. The consultation closed on 26th July 2013 and we received 35 responses, of which 5 were confidential. We thank respondents for providing us with their comments. This document discusses these comments and the changes we intend to make to our proposals as a result, and invites views on these final proposals.

4. Our procurement and use of balancing services is governed by statements which we are required to publish under Condition C16 of our transmission licence and which cover Balancing Principles, Procurement Guidelines, Balancing Services Adjustment Data Methodology, System Management Action Flagging Methodology and the Applicable Balancing Services Volume Data Methodology (the "C16 Statements"). To implement our proposals, we need to modify these statements, and any modification is subject to us undertaking a formal consultation and to approval by Ofgem. We are publishing the formal consultation on the changes to the C16 Statements necessary to implement the proposals in parallel with this document. This formal consultation can be found at the following link, www.nationalgrid.com/uk/electricity/balancing/consultations/.

5. Whilst the changes to the C16 Statements would permit us to procure and use these new balancing services, whether we actually purchase and use the new balancing services would depend on us establishing a need for the services and undertaking an evaluation of the tendered services, in accordance with the modified C16 Statements.

6. The structure of the remainder of this document is as follows: Sections 2 and 3 give a summary of our revised proposals for DSBR and SBR; Sections 4 and 5 discuss our initial proposals as described in the June consultation paper, the comments we received and rationale for the revised proposals; Section 6 explores costs and funding arrangements; Section 7 sets out our questions for this consultation; whilst Section 8 describes the next steps. Appendix A includes a more detailed discussion of why we have not proposed merely procuring additional amounts of Short Term Operating Reserve (STOR), as suggested by a number of respondents; Appendix B gives more detailed discussion of the proposals concerning the application of the stepped payment schedule for DSBR; Appendix C gives a more detailed discussion of the proposals for non-delivery charges for SBR; and, finally, Appendix D lists the non-confidential responses we received.

Section 2 – Summary of Final DSBR Proposals

7. After further consideration following the responses to the June consultation, our revised proposals for DSBR can be summarised as follows:

Participation

(i) DSBR to be provided by: (a) non-domestic consumers able to reduce or shift demand; (b) non-domestic consumers able to increase 'behind-the-meter' generation; and/or (c) small embedded generation or storage accruing to a supplier's consumption account;

(ii) DSBR to be tendered by non-domestic consumers directly or by third parties, including suppliers, aggregators or other intermediaries; in each case able to deliver demand reduction when instructed by the system operator;

(iii) demand reduction[1] to be provided through meters that are half-hourly metered and settled;

(iv) minimum demand reduction for a single collection of meters forming a 'DSBR Unit' to be one MW;

(v) sites providing Flexible STOR to be eligible to participate but to not be available to provide STOR when available to provide DSBR;

(vi) sites providing Committed STOR, and other committed reserve services to not be eligible to participate;

(vii) participation conditional on National Grid having access to half-hourly metered settlement data, including data for 12 months prior to the provision of DSBR;

Product

(viii) DSBR providers to have the ability to reduce demand, as instructed by the system operator at any time in the period between 4pm and 8pm on non-holiday weekdays in the months November to February ("availability windows");

(ix) DSBR providers to declare:

(a) the Meter Point Administration Number (MPAN) for each site forming a 'DSBR Unit';

(b) their demand reduction capability in MW;

(b) the times during the period 4pm to 8pm that demand can be reduced; and

[1] Note that we refer to 'demand reduction' throughout the description of DSBR, although this encompass increased exports from small embedded or onsite generation.

(c) the maximum duration for which any reduction in demand can be sustained, with such duration to be at least one hour;

Despatch

(x) DSBR to be despatched by the system operator by a smartphone, PC-based application or other suitable method;

(xi) DSBR instructions to be "all or nothing", i.e. DSBR providers will be instructed only to provide demand reduction equal to the declared MW capability;

(xii) DSBR instructions to have a start time and an end time;

(xiii) DSBR instructions are physically firm in that, once instructed, demand reduction will not be cancelled;

(xiv) DSBR instructions may be extended, although the obligation to respond to any instruction does not extend beyond the declared maximum duration;

(xv) demand reduction may be instructed outside the availability windows, although there is no obligation on DSBR providers to respond, and any demand reduction so provided to be paid at the nominal utilisation rate up to the declared MW capability;

(xvi) instructions to be given with as much notice as can reasonably be given, in order to maximise the opportunity for DSBR providers to respond;

(xvii) for the convenience of the system operator, DSBR Units may be despatched in tranches, with tranches being defined by utilisation rate and any relevant operational matters, e.g. location;

Payment

(xviii) DSBR providers to be paid a utilisation fee for demand reduction that is despatched and delivered;

(xix) for each DSBR Unit, DSBR providers able to tender one of a number of nominal utilisation rates: £1000/MWh; £1,500/MWh; £2,000/MWh; £3,000/MWh; £4,000/MWh; £5,000/MWh; £7,500/MWh, £10,000/MWh; £12,500/MWh; and £15,000/MWh.

(xx) except under certain circumstances, the utilisation payment to each DSBR Unit to be calculated according to a stepped payment schedule whereby: the first 25% of demand reduction is not paid; the second 25% is paid at 50% of the nominal utilisation rate; the third 25% at 150% of the utilisation rate; and the last 25% being paid at 200% of the utilisation rate; with demand reduction in excess of the declared capability not being paid unless a Max-DSR instruction has been given;

(xxi) the circumstances under which the stepped payment schedule is not applied are: (a) where less than two hours notice of an instruction is given; (b) where the demand is instructed to reduce for less than one hour; and (c) when demand reduction is requested outside the availability windows. When any of these exceptions apply, delivered demand reduction to be paid up to the declared MW capability at the nominal utilisation rate;

(xxii) a Max-DSR instruction may instruct demand reduction in excess of the declared capability; with any delivered demand reduction in excess of the declared capability to be paid at the nominal utilisation rate;

(xxiii) DSBR providers may tender to receive a set-up fee of £10/kW for demand reduction that can be sustained for at least two hours given at least two hours notice, with the set-up fee being pro-rated for demand reduction that can be sustained only for a period of less than two hours;

Measurement & Verification

(xxiv) demand reduction to be calculated from half-hourly settlements data by reference to a baseline which is determined as the aggregate consumption in each half-hour settlement period that the sites making up the DSBR Unit would have taken had demand reduction not been instructed;

(xxv) for each DSBR Unit, the baseline to be calculated as the average of the consumption in the corresponding settlement periods in the previous ten days of highest peak system demand on which demand reduction was not called from that DSBR Unit on a rolling basis over the previous 12 months;

(xxvi) National Grid to have the right to undertake a number of checks, including:

(a) that the supplier and address of each site in the DSBR Unit is consistent with meter point registration data for each site;

(b) each site is only represented in one DSBR Unit;

(c) that all meters for a site are included in the DSBR Unit

(d) that all MPANs are half hourly metered and settled;

(e) that the declared capability of each site of the DSBR Unit is consistent with the maximum demands and, where relevant, the maximum export capacities at the relevant sites;

(xxvii) in the event that a DSBR Unit in receipt of a set-up fee fails to provide demand reduction materially in accordance with its declared capability, National Grid to have

the right to investigate whether the DSBR provider has established the capability to provide DSBR. If it has reasonable grounds to suspect that this is not the case, National Grid to have the right to test the DSBR Unit without utilisation payment and recover the set-up fee in the event that a test is not successfully completed;

Procurement and Tender Assessment

(xxviii) we would anticipate tendering to be in the summer of 2014 for DBSR deliverable in winter 2014/15 and in the summer of 2015 for DSBR deliverable in winter 2015/16;

(xxix) DSBR tendering to receive the set-up fee to be accepted subject to the cost being less than reduction in energy unserved valued at the Value of Lost Load (VoLL), with the assessment assuming a reliability factor for DSBR of 0.75 (i.e. an outage rate of 0.25);

(xxx) all DSBR electing not to receive a set-up fee to be accepted, subject to the tendered utilisation rate being less than VoLL;

Contractual Arrangements

(xxxi) the contract for DSBR providers to be straightforward with the minimum of obligations being:

(a) the DSBR provider to notify the MPANs of the meters through which demand is taken at the sites providing DSBR and to confirm that it has the ability to ensure that demand is reduced at the notified MPANs;

(b) the DSBR provider to take steps to put in place reasonable processes and procedures to deliver the declared demand reduction capability when instructed by the system operator;

(c) the DSBR provider to take reasonable steps to deliver the declared demand reduction when instructed by the system operator;

(d) the DSBR provider not to take or omit to take any action for the purpose of manipulating its baseline;

Imbalance Pricing

(xxxii) we believe that the costs of DSBR should be reflected in the calculation of imbalance prices but propose that the details of this should be addressed as part of the Ofgem's Electricity Balancing Significant Code Review;

Other

(xxxiii) the costs of DSBR, including set-up fees, utilisation fees and administration fees, to be recovered through BSUoS charges; and

(xxxiv) no special arrangements to be made regarding supplier interaction.

8. These proposals are broadly similar to our initial proposals, with the significant changes being: baselines to be determined on a rolling basis over the previous twelve months; establishing a minimum size of one MW for a DSBR Unit; dropping the lower utilisation prices; further detail on the application of the stepped payment schedule; the optional set-up fee at the upper end of the proposed range; confirmation of the inclusion of small embedded generation; and the ability to recover the set-up fee from resources that have not taken reasonable steps to deliver the declared demand reduction capability.

Section 3 – Summary of Final SBR Proposals

9. After further consideration following the responses to the June consultation, our revised proposals for SBR can be summarised as follows:

Participation

(i) SBR to be procured from generation (or demand reduction) that would not otherwise be available in the energy market or for the provision of balancing services;

(ii) to ensure additionality and minimise market distortions,

(a) resources providing SBR to be prohibited from participating in the markets for energy and other balancing services for the duration of the contract; and

(b) a signed declaration to be required from the board of directors of the company to the effect that plant will not be participating in the market for energy or other balancing services during the term of the SBR contract (being for the entire year or years and not just the availability windows) for which they are tendering, irrespective of the current status of the plant and whether or not a contract is secured;

(iii) SBR to be required: to be party to either a Bilateral Connection Agreement or Bilateral Embedded Generation Agreement; to have registered a dedicated BM Unit for the SBR plant; to have EDL to the Control Point; and to have operational metering feeding into National Grid's control room;

(iv) SBR providers will not be required to hold Transmission Entry Capacity (TEC) but will be granted, to the extent necessary, sufficient transmission access rights under the SBR contract;

Product

(v) SBR to be available from 6am to 8pm on non-holiday weekdays in the months of November to February;

Despatch

(vi) SBR to be despatched by the system operator and not otherwise permitted to run;

(vii) SBR to be despatched either through offers and bids in the balancing mechanism or by instructing SBR to submit a profile of Physical Notifications;

(viii) SBR to be despatched as a last resort, only after all other balancing services have been exhausted, except to the extent that dynamics and other technical considerations, testing and warming require;

(ix) where, in order to meet an anticipated need for SBR, slow SBR dynamics require it to be despatched ahead of need, then other generation, where necessary, to be

constrained off, preserving inframarginal rents. Likewise, where SBR requires warming or testing, other generation, where necessary, to be constrained off;

Payment

(x) capability to be paid at the tendered rate less any non-delivery charges, with utilisation and warming to be paid at the tendered rates;

(xi) non-delivery charges to be based on the difference between the declared and actual reliability of the plant, providing an incentive to maintain reliability to at least that declared;

(xii) payments to be made in four monthly instalments over the winter availability window;

Measurement & Verification

(xiii) settlements data to be used to calculate SBR payments;

(xiv) each SBR Unit will be tested on a monthly basis;

Procurement and Tender Assessment

(xv) in assessing the requirement for SBR, we will have regard to the latest supply and demand outlook, the uncertainties associated with that outlook, and the Government's draft reliability standard;

(xvi) where a requirement to procure SBR is identified, tenders for one year SBR contracts for delivery in 2014/15 and/or two year contracts for delivery in 2014/15 and 2015/16 to be held in 2014; with subsequent tenders to be held if deemed necessary;

(xvii) the quantity of SBR required to be published ahead of the tender;

(xviii) tenderers to declare their best estimate of their reliability when providing SBR;

(xix) tenderers to declare also dynamic parameters as per the Grid Code; (where dynamic parameters are subsequently redeclared, SBR to be despatched in accordance with the redeclared parameters but non-delivery charges to be calculated where greater by reference to the dynamics declared at the time of the tender);

(xx) where available and economic and efficient to do so, tenders to be accepted to achieve the required quantity of SBR at least cost, taking into account: the tendered quantity and price; the declared reliability; expected costs of testing, warming and utilisation; together with the expected costs of validation, contracting, settlement and despatch;

(xxi) results of the tender process to be published, including quantities and costs of SBR procured, with any subsequent quantities and costs of utilisation, testing and warming to be published also;

Imbalance Pricing

(xxii) we believe that the cost of SBR should be reflected in the calculation of imbalance prices but propose the details of this should be addressed as part of the Ofgem's Electricity Balancing Significant Code Review; and

Other

(xxiii) costs of SBR, including capability, utilisation, testing and warming to be recovered through BSUoS charges.

10. As with DSBR, these proposals are broadly similar to the proposals we made in the June consultation paper. We have, however: removed the 50MW threshold and clarified the additionality requirements; set out how we would determine the quantity of SBR we might require and how tenders would be assessed to meet this requirement; confirmed that SBR would not be required to hold Transmission Entry Capacity (TEC); considered further the concerns regarding market distortion but have concluded that the proposals are appropriate and minimise any such distortion; and developed in more detail the proposed mechanism for non-delivery charges.

Section 4 – Demand Side Balancing Reserve

General

11. Our June consultation paper asked a number of specific questions to which we received detailed answers, which are discussed below.

12. There were, however, some general concerns about our proposals for new balancing services. In particular, some respondents expressed concerns that the case for the new balancing services had not been made and that the proposed new services would pollute the balancing mechanism and distort the wider market. Some respondents argued that current incentives are sufficient to deliver a substantial element of demand side response at peaks and some argued that attention should be focused on introducing the market-wide capacity mechanism and that the proposed new services pose risks for the implementation of that mechanism. Respondents also suggested that recruiting new demand side resources takes time, and given the level of set-up fee and the short-term nature of the scheme, uptake would be limited and not justify the costs involved.

13. In the case of DSBR, we do not agree that the case has not been made. Against a background of tightening margins, additional demand side resources could play an important role in balancing in the system, and DSBR is designed to access such resources.

14. Nor do we agree that DSBR could distort the wholesale market or pollute the balancing mechanism. On the contrary, we believe that DSBR merely affords an opportunity for demand-side resources to participate in balancing the system. Participation under the current arrangements involves the submission of offers and bids for a BM Unit in the balancing mechanism and requires participants to incur significant costs in BSC charges and in complying with Grid Code requirements, all of which may be not cost-effective for many demand-side resources. Thus, our view is that the DSBR arrangements remove a barrier to entry rather than create a market distortion.

15. We acknowledge that there is an active and growing demand side market and there is a possibility that the introduction of a new product could confuse that market. However, we believe that there is a large untapped potential for new demand side resources, particularly from demand reduction and load shifting, which DSBR is designed to access quickly and efficiently.

16. In addition, DSBR provides a viable option for genuine demand reduction and load shifting, where upfront capital costs to establish the capability are relatively small, providers are called infrequently, but the compensation required (representing their Value of Lost Load) is high when they are called. We acknowledge that embedded generation, with higher capital costs and lower utilisation costs is less suited to this product, with such resources being better suited to other products such as STOR, triad avoidance and, when EMR is implemented, capacity market contracts.

17. We share the concern about uptake, particularly given the short-term nature of the product. However, some resources recruited through this scheme may go on to participate in the

capacity market. Where demand-side resources receive a capacity payment, they may be better placed to compete with generation in the provision of balancing services. We also see an opportunity for DSBR to evolve into an enduring mechanism allowing the system operator to access balancing services from demand side resources, which may or may not be in receipt of a capacity payment, much in the same way as the balancing mechanism will continue to be used to access balancing services from generators.

18. With regard to the capacity market, the transitional arrangements for demand side participation are not expected to start until 2015 for delivery from 2016/17. Our proposals represent an opportunity for new demand side resources to become established ahead of these arrangements, by providing additional reserves to support us in balance this system against an uncertain security of supply outlook Rather than undermining these arrangements, DSBR is intended to promote the use of demand side resources via the provision of balancing services ahead of the capacity market arrangements becoming established.

Participation (Question DSBR1)

Our Initial Proposals

19. In the June consultation paper, we proposed that DSBR should be procured from demand side resources, including both reductions in demand, increases in behind-the-meter generation and smaller embedded generation. We proposed further that we procure services from sites that are half-hourly metered and settled but that we would consider the use of half-hourly metered data not used in settlements as long as sufficient data was provided and that the data were of at least settlements quality.

20. We proposed that participation would be restricted to resources with a utilisation price of £500/MWh or greater and which are not BM Units subject to the requirement under the Grid Code to submit Physical Notifications. We suggested that resources not fulfilling these criteria would have existing means of participating in the balancing mechanism.

21. We proposed that DSBR could be offered by consumers, on behalf of consumers by suppliers or agents, such as aggregators.

22. At the stakeholder event, it was implied that embedded generation would not be eligible to provide the service.

Comments Received

23. Several respondents agreed with our proposals. Other respondents disagreed with specific aspects, including:

    (i) questioning the £500/MWh lower threshold for the utilisation fee and that resources should be able to participate regardless of the utilisation fee; and

(ii) suggesting that embedded generation and storage technologies should be able to participate.

Our Response

24. We continue to advocate the use of a minimum utilisation rate but we now propose that the minimum utilisation fee should be £1,000/MWh. Recognising that the costs of participation in the balancing mechanism presently are prohibitive for small users, particularly demand-side reduction, an important aspect of our DSBR proposals has been in providing a low cost means of despatch and monitoring, comprising a smart phone or PC application for despatch and no requirement for real-time metering. Resources with lower utilisation rates are likely to be despatched frequently and we believe that it is appropriate that such resources are despatched and settled using existing, high-integrity systems, including EDL/EDT and Standing Reserve Despatch. Moreover, it is likely that resources that are despatched frequently will be able to justify the higher cost of such systems. Accordingly, we believe it appropriate to have a minimum utilisation rate and that £1,000/MWh would be a reasonable price given that resources in the balancing mechanism with offers of around £500/MWh are called reasonably often and that we should expect the frequency of their despatch to be even higher when system margins are tighter. We would envisage reviewing and possibly lowering the minimum utilisation price as experience with DSBR despatch systems and confidence in them grows.

25. We acknowledge the comments that embedded generation should be able to provide DSBR, and propose that small embedded generation should be able to participate.

26. Similarly, we would envisage that generation associated with storage technologies would be able to participate also.

Changes to our Initial Proposals

27. We propose that the utilisation rates be: £1,000/MWh; £1,500/MWh; £2,000/MWh; £3,000/MWh; £4,000/MWh; £5,000/MWh; £7,500/MWh, £10,000/MWh; £12,500/MWh; and £15,000/MWh.

28. We confirm that small embedded generation and storage technologies, which accrue to a supplier consumption account, will be eligible to provide DSBR.

Product (Question DSBR2)

Our Initial Proposals

29. We proposed that DSBR should be available between 4pm and 8pm on non-holiday weekdays in the months November to February inclusive. We further proposed that DSBR electing to receive a set-up payment should be sustainable for two hours if it were to receive the full set-up fee, although DSBR sustainable for less than two hours would be eligible for part payment of the set-up fee.

30. In the event that DSBR were called outside the availability periods 4pm-8pm on non-holiday winter weekdays, it would not be obliged to respond but would be paid at its utilisation rate were it to do so.

Comments Received

31. A number of respondents agreed with our proposals. However, other respondents commented variously that:

(i) that the limited availability windows give only partial protection against system stress events or "operational shortfalls" outside these periods, and that the product should be year-round;

(ii) that it could be worth encouraging DSBR providers to provide capacity that can deliver power very quickly and with a short notice, and that enhancing STOR volumes over the relevant seasons could satisfy demand;

(iii) that the product proposed is very different from demand response in the Electricity Market Reform capacity mechanism and hence that the proposal is not suitable as a transition to EMR; and

(iv) that there should be a solution for demand reduction sustainable for less than two hours and that a premium should be paid to demand reduction sustainable for more than two hours.

Our Response

32. On the basis of the responses received, we believe that our proposals for the DSBR product remain appropriate.

33. In regard of its limited availability and making DSBR a year-round product, we think it is unlikely that resources with the relatively high utilisation rates proposed for the DSBR service would be required outside the defined availability windows of 4pm to 8pm on winter non-holiday weekdays. Thus, we have geared the arrangements around providing a capability at these times, including: the arrangements for baselining; requiring DSBR providers to declare their capability to provide demand reduction at these times; and the incentives to deliver the declared capability. Requiring or inviting the provision of DSBR at other times would require asking DSBR providers to make significant additional commitments and tailoring baselines, declarations, verification arrangements, etc., when we believe it is unlikely that at these times the service would be of value. That said, we have proposed that DSBR could be called outside the defined availability windows although, given that the arrangements are not tailored to measure and verify the response and given the absence of a commitment on the part of the provider, we accept that any response would be voluntary.

34. We do not think it would be appropriate to pay set-up fees to facilitate DSBR outside these availability windows. We think that this would represent poor value for money for the consumer and that the risk of these "operational shortfalls", which are not related to resource adequacy and which occur on the system today, can continue to be secured by existing arrangements, including frequency response, headroom and STOR.

35. We do not think that enhancing STOR volumes would be an alternative to DSBR. STOR, together with frequency response and headroom, is intended to provide quantities of additional generation (or demand reduction) within short timescales in order to address demand forecasting errors and generation uncertainties over these timescales. We do not think that these particular uncertainties will increase markedly as system margins become tight and hence the requirement for more resources to respond within short timescales will not necessarily increase. Hence the additional new balancing services we are proposing to procure do not have to be available within the same timescales as frequency response and STOR, and to impose unnecessary dynamic constraints would reduce the pool of resources that might be able to provide the service and would add unnecessary cost.

36. Similarly, STOR is required to be available for far wider availability windows than is the case for DSBR. Again, this would preclude providers, particularly genuine demand reduction (rather than behind the meter generation), who could not provide the service outside the more limited availability windows we have identified for DSBR, and drive up costs. STOR is also required to have real-time operational metering. This is a further requirement that we believe is not essential for DSBR and which would be a further unnecessary cost.

37. We acknowledge that DSBR is different from DSR in the capacity mechanism and understand concerns that the proposals are not suitable as a transition to EMR. However, DSBR is not a capacity product; it merely affords the demand side a cost-effective means of participating in balancing the system. The DSR arrangements under the capacity mechanism are more suited to embedded generation and storage (with high capital costs and low utilisation costs), whilst DSBR is more suited to demand reduction and load shifting (lower capital costs but high utilisation costs).

38. In order to stimulate large quantities of demand response quickly to support us in balancing the system against a background of narrowing margins, DSBR is aimed at non-domestic consumers who can rapidly deploy a demand reduction/load shifting capability (rather than invest in generation and storage which would take time). Hence DSBR is different from the DSR arrangements. However, to the extent that DSBR brings forward new demand side resources, these will then be better placed to participate in the transitional arrangements for the capacity mechanism if they so desire.

39. Finally, our proposals already provide both for DSBR providers that are sustainable for less than two hours and that are sustainable for longer. Providers sustainable for less than two hours may declare themselves as such; albeit any set-up fee will be reduced.

Section 4 – Demand Side Balancing Reserve

Payments (Question DSBR3)

Our Initial Proposals

40. We proposed that DSBR providers would be eligible to receive high utilisation payments when despatched. There would be no capability or capacity fee, although we proposed that DSBR providers could opt to receive a fixed fee in the region of £5 to £10 per kW to assist with any fixed costs of setting up the ability to respond (Product One) but could opt to waive this fee (Product Two) if they had the ability already in place and did not want a fixed fee to jeopardise acceptance of their tender.

41. DSBR could elect for one of a number of possible nominal utilisation rates ranging from £500/MWh to £15,000/MWh. We proposed that the upper would be subject to the Value of Lost Load determined by Ofgem and DECC as we did not foresee that it would be deemed economic to despatch resources at a cost greater than VoLL.

42. We proposed also that the set-up fee would be pro-rated for DSBR that was sustainable for less than two hours and that utilisation payments would be stepped such that the first and second 25% of the declared DSBR capability in MWh (being the declared DSBR capability in MW multiplied by the declared sustainability in hours) would be paid at discounts, respectively, of 100% and 50%of the nominal utilisation rate, with the third and final 25% being paid at premiums of 50% and 100%.

Comments Received

43. Many respondents commented that the set-up fee was too low, with comments that the proposed fee was insufficient to drive high levels of take-up, that payments made only during stress events would were improbable as a means of incentivising investment; and that customers need the revenue certainty of an availability payments stream in order to take on the risk of participating in demand response. A further comment was that £13-15,000 was required to design, implement and audit a load-shedding strategy of around 1MW. Conversely, another respondent agreed with our proposal, stating that set-up fees needed to be relatively attractive to get started, whilst some respondents criticised the lack of a claw-back of the set-up fee, with some arguing that the set-up fee was inappropriate without such an arrangement.

44. Other comments were that utilisation payments might be too high and that the maximum utilisation rate of £15,000 per MWh would create a “race to the top”. Conversely, another comment was that if DSBR providers offer utilisation rates corresponding with their value of lost load then there would be no incentive for businesses to function as a reliable DSR resource.

Our Response

45. With regards to the low level of set-up fee, our proposals stated that, particularly in view of the short timescales, we did not anticipate that DSBR should involve a high degree of

investment in new assets and that, rather, we envisaged DSBR being provided by controlling existing demand-consuming processes and by existing behind-the-meter or embedded generation. As such, we do not believe that it is an essential requirement that payments for DSBR to provide a stable return for investors any more than the balancing mechanism provides a stable return for generators. Moreover, we recognise that the cost to non-domestic consumers of providing demand reduction can be considerable, and payments based largely on utilisation would seem to reflect better the costs incurred by such consumers than a high fixed fee in return for an uncertain number of demand reductions. Thus, payment for utilisation will remove or reduce the risk of incurring the costs of having to deliver demand reduction for which risk, according to some comments, fixed availability payments are necessary as compensation.

46. We note that the estimate of £13,000 to £15,000 for a system to provide 1 MW of demand reduction corresponds with £13 to £15 per kW. On this basis, a sophisticated and comprehensive system of demand reduction would cost £3 or possibly £5 per kW more than the top end of our proposed range for the set-up fee. We also note that STOR, which many of the same respondents that argue for an increased set-up fee suggest as an alternative to the proposed new balancing services, has been clearing at prices as low as £4/MWh, equivalent to anywhere between £15.5/kW for all six STOR seasons or around £7/kW for just the two winter seasons, or even lower. Thus, we are inclined to continue with a set-up fee in line with the range proposed in our original proposal although, in recognition of the comments received, at the top end of this range, i.e. £10/kW, to facilitate the development of new resources.

47. With regard to the lack of penalties, we do not see why a large upfront payment with high penalties for non-delivery should be any more effective than an equivalently high payment for delivery. In each case the marginal loss of revenue for a failure to perform will be the same. We acknowledge, though, that our proposals did not include a claw-back of the set-up fee. However, by keeping the set-up fee to a relatively modest level, we contend that the complexity of a claw-back mechanism is not warranted. Furthermore, the stepped payment mechanism should discourage overly-optimistic declarations of capability and poor delivery performance. We have also made various verification proposals (see later) which could lead to the recovery of the set-up fee in the event that a DSBR provider had failed to put in place the means to deliver the declared demand reduction.

48. We are unconvinced by arguments that the choice of utilisation rates will result in a “race to the top” any more than the maximum limit on offer prices in the Balancing and Settlement Code of £99,999 per MWh causes a race to the top in the balancing mechanism. We see no reason why competitive pressure should not encourage providers to price DSBR reasonably, recognising that the higher the price, the less likely they are to be used. We note also the argument that compensating consumers at their VoLL will not provide them with any positive incentive to make demand reductions. However, our proposals give consumers the opportunity to express the price at which they would be prepared to reduce demand, irrespective of whether this reflects their true underlying costs. In this respect this

is, again, no different than balancing mechanism offer and bid prices for generators. Moreover, even if, as some respondents suggested, the greater proportion of payments were to be fixed capability payments and these were tendered by DSBR providers, we might expect these fixed payments to be subject to the same competitive pressures as utilisation payments are in our proposal, but with consumers having to gamble on the number of times they would be called rather than bidding on the basis of the costs incurred per demand reduction.

49. We have also continued to develop our proposal for stepped payments, in order to incentivise an accurate declaration of capability and then accurate delivery of the declared capability. We have recognised, however, that there are circumstances where it would be unreasonable to apply such incentives and instead pay at the nominal utilisation rate for whatever response the DSBR provider is able to give. Specifically, these circumstances are: (a) when demand reduction has been instructed at short notice, i.e. less than two hours; and (b) when demand reduction is instructed for less than one hour.

Changes to our Initial Proposals

50. We are proposing that the set-up fee for Product One is set to £10/kW.

51. We are proposing a number of exceptions to the application of the stepped payment schedule such that demand reduction is not discounted where it would be unreasonable to expect DSBR providers to achieve their full declared capability.

Measurement, Baselining and Interaction with Triads (Questions DSBR 4 & 11)

Our Initial Proposals

52. We proposed that we use half-hourly metered data in settlements. We proposed that demand reduction would be measured for each settlement period by comparing metered data to a baseline calculated as the average of the demand in the corresponding half-hour settlement periods in each of ten preceding peak demand days during which demand reduction was not called. Peak demand days would be defined as the ten days with the highest peak demands in each of the current and previous winters (November to February).

53. We proposed taking no special measures to account for triad avoidance, such that triad avoidance would be discounted from measured DSBR to the extent that DSBR providers had undertaken triad avoidance during settlement periods being used to calculate the baseline.

Comments Received

54. Some comments were that the proposed approach was simple, sensible and pragmatic. However, a number of comments were critical of aspects of the proposal, including:

(i) that the proposed process for identifying peak days in the current winter would mean that DSBR providers would not know their baseline at the time that they were required to make demand reductions;

(ii) that the proposed approach assumes a strong correlation between individual and system demand;

(iii) that consumers' consumption could change between winters;

(iv) that frequent calling of DSBR would result in baselines being reduced;

(v) that the approach is overly-simplistic with no correction for temperature effects;

(vi) that a better approach would be to have an agreed baseline with rolling updates;

(vii) that an alternative approach of using the same weekday in the previous 4 weeks or the last 10 days would be give better accuracy and would give a good probability of including possible triad periods, or that a suitable approach would be three out of the ten previous days with 'morning adjustment';

(viii) that DSBR providers need real-time monitoring; and

(ix) that we need to ensure that the proposals do not discriminate against new entrants.

55. On the specific issue of the interaction with triad avoidance, a number of comments agreed with our proposals whilst other comments were:

(i) that the proposed approach conflicted with triad management and that southern demand would be disadvantaged;

(ii) that as the effect on 'grid stress' of triad avoidance and DSBR would be the same, allowing users who take part in triad management to also take part in DSBR would ensure that we had access to DSR resources when needed;

(iii) that DSBR could result in triads being moved unpredictably from legitimate expectations, making the prediction of triads more difficult, and that making the prediction of triads more uncertain would be likely to have adverse consequences;

(iv) that it may be attractive to maintain demand in the expectation of a peak; and

(v) that the averaging window used to create the baseline could be widened to permit triad management and DSBR to operate together.

Our Response

56. The objective of the baselining methodology is to estimate the demand that DSBR providers would have taken had they not been called upon to provide demand reduction.

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57. We acknowledge that DSBR would benefit from allowing access to existing demand side resources (i.e. triad avoiders) when they are not operating in response to price signals. However, bringing these under the control of the system operator represents a more fundamental change that goes beyond the intent of these proposals. As such, whilst we agree with the comments that the proposal would prevent providers providing both DSBR and triad management, we believe that it is appropriate that this is the case. Existing demand reducers will continue to respond to price signals as they do now, while DSBR would aim to stimulate new resources that do not presently react to these signals.

58. We acknowledge the comments that DSBR could make avoiding triads more difficult as it is possible that calling DSBR could result in periods that would have been a triad without DSBR no longer being so. However, triad avoidance is not a demand side product as such, and is simply the response of customers to a price signal. It is likely that other components of the overall price of electricity will increasingly also have an effect on customers' decisions which could in turn affect which periods turn out to be triad periods. Such components of overall price will include energy, under a reformed cash-out regime, and charges for capacity under the proposed capacity mechanism in the Government's Electricity Market Reform.

59. We note also the comment that the proposed baselining methodology is overly-simplistic and does not, for instance, incorporate temperature correction. Demand is highly temperature dependent and thus the effect of temperature is implicit rather than explicit in the proposed baselining methodology, with DSBR most likely to be called on cold days and baselines likely to be set also based on the cold days.

60. We understand that the proposal assumes that individual demands have a strong correlation with system demand. If DSBR is to be accessible by a large number of smaller users, it is imperative that the system is relatively straightforward. The intention of our proposals are that users should be able to identify the processes that they could interrupt in order to achieve demand reductions and bid this in as their capability, and then rely on the baselining methodology to broadly reflect their overall consumption. Users' demands clearly are correlated with system demand, with the factors that affect all users being reflected in the proposed procedure. It is not clear that, say, an average of the last ten days would be any more accurate.

61. We have to accept that the baselining procedure is inherently statistical and that the resulting payments to DSBR providers can thus be higher or lower than might be the case if the baseline were more accurate. However, accuracy in the baseline would likely involve arrangements tailored to each DSBR provider, which would be prohibitively complex and expensive for all but large providers. Thus, along with the low cost systems for despatch and monitoring, it is essential that the procedures for baselining are similarly economical.

62. We note the comments that the proposed methodology would not allow users to know the baseline against which they are reducing demand until after the event, as the ten peak system demand days over the season cannot be identified until the end of the season. We

therefore propose to modify our proposal to calculate the baseline for each DSBR Unit as the demand (or its metered output in the case of small embedded generation or storage) in each settlement period averaged over the ten days of highest system demand taken from the previous twelve months (on a rolling basis) excepting those days on which the DSBR Unit was called to reduce demand. We also propose to publish the days that would be used for calculating this baseline on our website, thus enabling providers to estimate their own baseline at any point in time using their metering data.

63. We recognise that the proposed methodology will not work for sites that have been commissioned within the last twelve months. However, we think this problem will be relatively rare and we do not think it is unreasonable to require some evidence of twelve months of consumption in order to define a baseline.

64. As regards real-time monitoring, nothing in our proposals would prevent DSBR providers from using real-time monitoring in order to manage their own demand and demand response. However, our proposals do not rely on such monitoring, and the intention of our proposals is that providers should be able to provide a useful DSBR service at low cost and that the settlement arrangements would be sufficient to establish whether this had been delivered.

Changes to our Initial Proposals

65. The baseline for each DSBR Unit will be calculated as the metered demand of that DSBR Unit (or its metered output in the case of small embedded generation or storage) in each settlement period averaged over the ten days of highest system demand over the previous twelve months, excepting those days on which demand reduction was called for that DSBR Unit. Demand reduction will be measured for each settlement period by comparing metered data to the calculated baseline.

Despatch (Questions DSBR5 and TAC5)

Our Initial Proposals

66. We proposed that DSBR would be instructed by the system operator, such that DSBR providers would not be expected to reduce demand except in accordance with the system operator's instructions. We further proposed that instructions would be given via a smart phone or web-based application. The same system could be used to also give warnings of the impending need for demand reductions, as well as other communications to ensure the DSBR providers remained engaged with the arrangements. We proposed that Standing Reserve Despatch, as used by STOR providers, could be used where available.

67. We proposed also that the system operator would despatch DSBR resources in tranches nominally of 250MW, and that instructions to DSBR would be "all or nothing" and "firm" in that, once instructed, DSBR providers would not be asked to stop reducing demand earlier.

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68. We proposed that DSBR would be despatched economically, albeit recognising that the high utilisation rates would result in DSBR being called relatively infrequently.

Comments Received

69. A number of comments supported our proposals to provide a low-cost mechanism for despatch.

70. Specific comments included:

(i) that we should use Standing Reserve Despatch;

(ii) that, to avoid potential confusion, DSBR should not use Standing Reserve Despatch;

(iii) questioning whether there would be any confirmation required from users;

(iv) questioning how, with no penalty associated with non-delivery, we could be assured that the DSBR despatched would be delivered;

(v) that advance notification of impending demand reductions could distort short-term prices;

(vi) questioning the proposal to despatch DSBR ahead of SBR;

(vii) that providing advance notice could encourage DSBR providers to maintain demand;

(viii) that the proposal amounts to little more than blind broadcast and that we should make greater upfront investment in infrastructure to improve the quality of service achieved; and

(ix) questioning the value of grouping DSBR into 250MW blocks.

Our Response

71. With regard to Standing Reserve Despatch (SRD), we think the full requirements, including minute-by-minute monitoring, would not be cost-effective for small users. Whilst we proposed using SRD were available, we note the comment that this could cause confusion and that it would be helpful to keep STOR and DSBR systems separate. It may also be more cost-effective for us to keep DSBR as a stand-alone system and not have to modify SRD in order to interface with DSBR and accept DSBR messages.

72. We note the comment regarding confirmation from users. We envisage that the DSBR despatch applications would be able to confirm when a message had been received by the user's smart phone or PC and would also be designed to request acknowledgement from the user that they had noted and understood any instruction or message. We also envisage that occasional messages would be sent to users purely for the purposes of

establishing whether they were being received and acknowledged. This would give us an indication of the reliability of the service in advance of our requiring it and give us the opportunity to send an email or other communication in the event that messages were not being acknowledged.

73. We acknowledge the concerns that advance notifications of the need for DSBR could encourage providers to maintain demand and could also distort prices. However, we think it is in the best interests of the market and the system that information is made available. Irrespective of DSBR, system information is already made available in the form of Notices of Insufficient System Margins (NISMs); Demand Control warnings; and information on the Balancing Mechanism Reporting System (BMRS). Thus, we think DSBR messages will merely augment information that is already available and, furthermore, which is considered desirable.

74. Whether advance notifications also create an incentive to maintain or even increase demand will depend on the baselining procedure. In particular, procedures that adjust the baseline using consumption data immediately prior to a demand reduction would seem to create potential incentives to increase demand prior to an instruction to demand reduce. We believe that our baselining proposal does not suffer this problem.

75. We disagree that the arrangements amount to “blind broadcast”. Instructions will be sent to specific DSBR providers and the fact that we group them into tranches is something that is a practical consideration, given that when operating the system, particularly at times of stress, it would not be practical to be dispatching many DSBR resources individually. Moreover, whether or not we monitor resources in real-time has little bearing on the incentives they have to respond. In the case of generators in the balancing mechanism, the incentives to respond are not strong and are based on half-hourly metered quantities. Thus, our proposals for DSBR are no less and, given the stepped payment regime, arguably superior. That DSBR resources may be distrusted is a consequence of the relatively small amount of experience there is of operating them which will be rectified by gaining such experience.

76. On the question as to why DSBR would be despatched ahead of SBR, DSBR is merely extending the commercial balancing market to encompass a wider range of demand side providers, and we have designed SBR to be only used after all feasible commercial balancing actions in that balancing market have been used. To despatch SBR ahead of more expensive DSBR actions would be no different to despatching SBR ahead of more expensive BM Offers - both would undermine the balancing market. Hence to avoid undermining the balancing market, SBR has been designed to be used as a last resort after all commercial balancing actions, including DSBR, have been exhausted.

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Procurement and Procurement Options (Questions DSBR6 & DSBR7)

Our Initial Proposals

77. We proposed holding tenders in 2013/14, with tenderers electing to provide DSBR in either or both of winter 2014/15 and winter 2015/16. A further tender would be held in 2014/15 for winter 2015/16. We would keep the need for the DSBR service in the years after 2015/16 under review.

78. We proposed also that DSBR would be procured from customers or agents, including suppliers, aggregators and other intermediaries acting on their behalf.

Comments Received

79. A number of respondents agreed with the broad approach. Nevertheless, specific comments received included:

(i) that it would be difficult to sign customers up for only one winter;

(ii) that certainty was needed beyond the current service and regarding the interaction with the capacity mechanism;

(iii) that National Grid should be procuring the service from large users and through aggregators, suppliers, DNOs, and that it was necessary to get the support from suppliers, agents and aggregators;

(iv) that there should be a combination of options and that neither direct procurement nor involvement of suppliers and agents can be discouraged;

(v) that suppliers should be aware of any arrangement with their customers;

(vi) that timescales were too tight and would not allow enough time to sell the service to customers;

(vii) questioning why it was necessary to hold tenders one winter ahead and recommending that lead times be reduced; and

(viii) with load reduction declarations perhaps 8 months ahead of delivery, capacity could be subject to change with the suggestion being that tenderers should be able to redeclare their capability closer to real-time.

Our Response

80. We note the comment that interest in the service may be compromised if it is perceived that the service will be required for only a limited duration. We note also the question as to

whether tenders needed to be held so far in advance of delivery. We understand from these comments that users are not looking necessarily for long term certainty of DSBR contracts but nevertheless want to know that there will be an ongoing requirement for the service.

81. We have proposed procuring DSBR for 2014/15 and 2015/16. Whilst we have no firm proposal to procure DSBR beyond then, we have stated that we would keep the situation under review. Moreover, given that a rationale for DSBR is that it provides a means of participating in the provision of balancing services for service providers that are called relatively infrequently and for whom existing institutional arrangements and costs of full participation in the balancing mechanism are not suitable, there seems to be little reason, at least in relation to Product Two (without the set-up fee), why we would discontinue the service in future.

82. It is also the case that reformed cash-out pricing is likely to create the need for suppliers to engage customers in the active management of demand, whilst it is generally recognised that future high penetration of intermittent renewables is likely to increase the future need for active demand management. It is likely thus that even if the parties requiring services and details of their delivery differ, the requirement for DSBR or very similar services is likely to grow.

83. Also, we see no reason why DSBR should not evolve to operate alongside demand side participation in the Government's proposed capacity mechanism in exactly the same way that the balancing mechanism will operate alongside generation participation in the capacity mechanism.

84. We agree that it will be beneficial to have the support of suppliers, aggregators and other third parties. We also note the support for the option of contracting directly. Recognising that intermediaries may be better placed to manage relationships with a large numbers of small service providers and consumers, we propose that, at least in the first instance, to apply a de minimis limit of one MW for each DSBR Unit. Smaller non-domestic consumers would be encouraged to participate through agents, aggregators, suppliers or other third parties.

85. We acknowledge the comment that lead times should be reduced. We understand that consumers offering demand reduction may know with only relatively short lead times the level of demand reduction that they can commit to providing. We acknowledge also the comment that timescales are too tight and will not allow enough time to sell the service to customers. Accordingly, we propose that tenders should be closer to delivery. However a certain length of time is required to permit successful tenderers to put arrangements in place and for us to configure our arrangements for despatch. Thus we now propose that tenders should close in the summer preceding the winter availability window. In order to give as much time as possible to "sell the service" we will nevertheless ensure that our intentions are publicised as soon as possible.

86. We acknowledge that in our initial proposals, given tenders could take place 8 months or so ahead of delivery, the capability of DSBR providers could change in the interim. We therefore propose to hold tenders closer to delivery, but the capability will be fixed in the contracts when tenders are accepted.

Changes to our Initial Proposals

87. We propose that we will tender for DSBR to be delivered each year during the preceding summer. We will, however, confirm our intention to tender earlier in the year to give time for the service to be publicised and potential resources identified.

88. DSBR Units will have a de minimis limit of one MW with smaller DSBR resources participating through third parties such as agents, aggregators, and suppliers.

Tender Assessment Questions (TAC1, TAC2 & TAC3)

Our Initial Proposals

89. We proposed we would assess the benefit of all Product One tenders as being the reduction in Expected Energy Unserved (EEU) costed at the VoLL, and the cost as being the fixed cost plus the expected utilisation costed at the tendered utilisation rate. The reduction in EEU would be equal to the expected utilisation, both of which would affected by an assumed outage rate that we would deem to be 25%. However, we proposed also that we would make a conservative assumption of an outage rate of 75% for the purpose of evaluating further DSBR and SBR tenders.

90. With Product Two, where the set-up fee was waived, the fixed costs would be zero and hence we could accept all tenders where the tendered utilisation rate is less than VoLL.

91. We proposed that where, applying the above criteria, we would want to accept only a proportion of tenders of Product One at a given utilisation rate, we would determine whether the most economic option would be to accept all or none of the tenders.

Comments Received

92. A number of the comments supported the proposals.

93. Other comments were:

(i) that the assumed outage rates suggested we had little confidence in DSBR which would lead us to under procure against the need and also would portray demand side resources as a highly unreliable, with the implication that would be prejudicial to the interests of demand side resources in subsequent schemes;

(ii) that contracting arrangement and associated incentives should ensure the discovery of appropriate disappearance ratios by the relevant party, such that parties would nominate only firm capacities;

(iii) that without a penalty regime for DSBR it can only be considered non-firm and should certainly not be taken account of when assessing SBR tenders.

Our Response

94. Whilst the higher the outage rate the less economic Product One would appear to be in the evaluation, any tendency as a result to procure less should be outweighed by the higher outage rate assumed for other accepted tenders. However, we agree that an outage rate of 75% may be an unduly conservative assumption and hence we propose to adopt a common outage rate of 25% throughout the assessment.

95. Nevertheless, we think it unlikely that a detail of our tender evaluation procedures is likely to tarnish the image of demand side resources generally, rather than the observed performance in the event that DSBR is instructed.

96. Whilst DSBR may be non-firm, we disagree that it should be disregarded in the assessing SBR tenders any more than non-firm generation or even non-firm demand is disregarded.

97. Ideally the requirement for SBR would be assessed after taking account of the volume of DSBR procured. In practice, SBR would be tendered in advance of DSBR due to the lead time of bringing back mothballed plant, leading to concerns that opportunities for DSBR may be curtailed by the quantity of SBR procured. To deal with this, we propose to estimate the quantity of DSBR we might reasonably expect to come forward in assessing the requirement for SBR. In the economic assessment of DSBR, which would be despatched ahead of SBR, we do not need to take account of the quantity of SBR procured, thus the quantity of DSBR we procure would be unaffected by SBR. There is a risk of under or over procurement of SBR as a result, but this is likely to be marginal.

Changes to our Initial Proposals

98. We continue to propose that we will accept all DSBR tenders whose cost is less than the expected reduction in EEU costed at VoLL.

99. We continue to propose a reliability factor of 0.75 (equivalent to an outage rate of 25%) but will apply this consistently, both in the assessment of each tender and in the evaluation of the tenders of other DSBR and SBR providers.

Section 4 – Demand Side Balancing Reserve

Verification (Question DSBR7)

Our Initial Proposals

100. In our proposals, we suggested that the emphasis on utilisation over fixed payments meant that DSBR was mostly paid on delivery of demand reduction. Together with the stepped payment schedule which incentivised accurate declaration of capability and delivery, this minimises the need for onerous and costly verification and testing procedures.

101. We did, however, suggest that we would be able to undertake a number of checks, such as verifying that no MPAN appeared in more than once in any DSBR and verifying that tendered DSBR capabilities where consistent with the maximum demands (and, where appropriate, export capacities) were consistent with the relevant connections.

102. We suggested also that we would have the right to do spot checks that the necessary arrangements to deliver demand reduction were in place and to check that reasonable endeavours were being taken in the event that no demand reduction had been delivered.

Comments Received

103. Some respondents agreed with the proposals. However, specific comments made were:

(i) that the arrangements are not thorough enough to ensure a reliable demand side resource;

(ii) that more verification was warranted if we were proposing to use a 25% de-rating factor;

(iii) that suppliers needed to be able to substitute MPANs in DSBR resources;

(iv) that resources needed to be tested at least once a year;

(v) that resources needed to be tested at several times a year;

(vi) that more investment was required in integrated real-time monitoring to identify underperformance and prevent DSBR providers collecting the set-up fee with no intention of delivering

Our Response

104. We note that most of the specific comments were to the effect that a much more comprehensive testing regime was required to ensure a reliable demand side resource.

105. We do not agree with this view in this instance. The emphasis of DSBR on utilisation payments creates strong incentives for the delivery of demand reduction, as opposed to

having to ensure that a capability is being provided, irrespective of whether or not it is used, in return large fixed payments. Moreover, the intention of DSBR is that additional resources can be realised within a short timeframe and, to this end, we remain of the view that it is preferable that the service does not involve DSBR providers in onerous, complex and relatively costly verification and testing procedures. We also think that such arrangements would not be practicable where a DSBR Unit comprises many small sites.

106. We are also conscious that one of the purposes of DSBR is to provide additional balancing resources that could reduce the likelihood of us having to take emergency actions which include involuntary reductions in demand. The testing of all DSBR resources once, or possibly several times, a year would be result in quantities of demand being lost as a result of testing which are far greater than that which would be lost as a result of a shortage of balancing resources. We think that demand side resources, whose utilisation costs are generally high, would be expensive to test, and hence arrangements that require significant amounts of testing are not economic.

107. However, we acknowledge that our verification proposals could be improved both to promote reliability and to protect consumer interests. Accordingly we propose that if a DSBR Unit fails to deliver when called with sufficient notice, we reserve the right to investigate and, if appropriate, call a test (without payment for utilisation) and recover any set-up fee if it is found that the provider has failed to put in place reasonable processes and procedures to deliver the declared demand reduction capability.

108. One comment was to the effect that suppliers needed to be able to substitute MPANs making up demand side resources. Whilst, in principle, it might be desirable to allow DSBR Units to be reconfigured to contain different resources providing they continue to meet their obligations, we are concerned that this would greatly increase the complexity of implementation. Thus, we propose not to include the facility to substitute MPANs in the first instance.

Changes to our Initial Proposals

109. We propose that if a DSBR Unit fails to deliver a material demand reduction when instructed with at least two hours notice, we reserve the right to investigate and, if appropriate, call a test (without payment for utilisation) and recover any set-up fee if it is found that the provider has failed to put in place reasonable processes and procedures to deliver the declared demand reduction capability.

Contractual Arrangements and Disputes (Questions DSBR8 and DSBR9)

Our Initial Proposals

110. We proposed that there would be a de minimis threshold for disputes resolution.

111. We proposed that the contractual arrangements should be of a standard form which is straightforward and as simple as possible, in order to promote understanding and facilitate ready acceptance by a wide range of DSBR providers. We proposed also that the contracts should not give potential DSBR providers comfort that they were not taking on an exposure to risks, such as onerous non-delivery penalties.

Comments Received

112. Many of the comments we received regarding disputes supported the proposal for a disputes threshold, although a few respondents commented that the acceptability would depend on the value of the threshold. Another comment was to the effect that a clearly documented calculation methodology enabling validation of payments by participant, suppliers or agents would minimise the number of disputes.

113. Likewise, many of the comments regarding contractual arrangements supported the proposal that contractual arrangements be simple. Some comments, however, restated the view that appropriate cost-reflective incentives were needed to ensure service providers maintain capability. Another comment was that if a participant was large enough to contract directly then it would be able to accept Key Performance Indicators. A further comment was that not a lot of thought seemed to have been given as to how an aggregator could take part in the arrangements and receive payment for demand response.

Our Response

114. We acknowledge the comments supporting the proposals, and continue to propose that there is a threshold for disputes and that contractual arrangements be kept as simple and straightforward as is practicable.

115. As discussed earlier, we believe that the strong incentives in the form of significant utilisation payments should be as effective as a system of performance indicators with penalties for non-performance. As regards cost-reflective incentives, we note that in the balancing mechanism, non-delivery by BM Units is penalised at either the cash-out price or the offer price. Thus, in this respect, the stepped payment schedule in DSBR provides a stronger incentive for delivery than the balancing mechanism.

Imbalance Pricing (Question DSBR10)

Our Initial Proposals

116. In our proposals we recognised that, for consistency with other balancing services, where used for energy balancing, we should reflect the total fixed payments (and utilisation payments) in the settlement periods covered by the DSBR service. However we noted that Ofgem is undertaking a review of cash-out pricing and that, as a consequence, we should not reflect the cost of DSBR in imbalance prices pending the outcome of the review.

Comments Received

117. Several respondents agreed with the proposal. However, some respondents did not, with specific comments being that DSBR should be included in imbalance pricing in a similar manner to STOR and that, given the potential importance of the service in keeping the lights on, the costs of delivery should be reflected in the marginal costs of electricity for the relevant settlement period to avoid undermining imbalance price signals.

Our Response

118. We agree that the costs of DSBR should be reflected in imbalance prices. However this should be picked us as part of Ofgem's Electricity Balancing SCR, using the same methodology proposed for improving the pricing of other reserves and non-costed actions into imbalance prices. Assuming a Reserve Scarcity Pricing function is adopted, cash out prices would approach the cost of demand disconnection (£3,000/MWh) if margins tighten to the extent that we need to call upon DSBR to balance the system. As such, price signals providing strong incentives for market participants to balance their positions would be promoted.

Interaction with STOR (Question DSBR12)

Our Initial Proposals

119. Given that at times when DSBR is likely to be called, Committed STOR providers are likely to be called to provide or to be being held in reserve, we proposed that Committed STOR providers should thus not be permitted to provide DSBR. However, we suggested that Flexible STOR providers, who are able to declare themselves unavailable to provide STOR, should be able to declare themselves unavailable to provide STOR in order to provide DSBR.

Comments Received

120. A number of comments we received agreed with our proposal.

121. Other comments included:

(i) that Flexible STOR providers are more likely participate in triad avoidance than provide DSBR;

(ii) that aggregators should be able to have a blend of committed sites, flexible sites and DSBR customers;

(iii) that there may be situations where a single site may have both resources able to provide DSBR and other resources able to provide STOR and other services, such as frequency response;

Our Response

122. We agree that Flexible STOR providers will have the option of providing triad avoidance or providing DSBR. At least in the near term, it is likely that triad avoidance will take place at times of system stress and so demand response responding to triads will tend to assist DSBR rather than conflict with it. This will apply to demand response providers generally and not just providers that may be providing Flexible STOR.

123. We acknowledge the comment that aggregators may have a portfolio of resources. However, we do not see how resources that are providing Committed STOR can provide DSBR.

124. We acknowledge also that there could be some sites that contained a mix of resources, some of which could provide STOR and others which could provide DSBR. However, we do not think it would be feasible, or would be excessively complex, to determine whether each service could be delivered without compromising the capability to deliver the other.

Other

Comments Received

125. General comments received that may apply to DSBR included:

(i) that our proposals would provide only a very short term stimulus and would not promote development of long-term participation in demand reduction programmes;

(ii) DSBR could kick-start interest in the demand-side which could go beyond 2016;

(iii) placing reliance on new balancing services at times of extreme system stress needs to be thought through carefully.

Our Response

126. We acknowledge the differing views as to whether DSBR would provide a 'kick start' to the demand side or whether it would not promote development of long-term participation in demand reduction. However, as a cost-effective means of participating in balancing the system, we do not see why DSBR should not endure past the introduction of market-wide capacity mechanism, just as the balancing mechanism will endure past the introduction of the capacity mechanism for generation. We believe that it is incorrect to view DSBR as a capacity product (any more than the balancing mechanism is) and that there may be a tendency to conflate the two merely because typically demand-side resources will have higher avoidable costs than generation and hence be called only when the plant margins are tight.

127. We agree with the comment that placing reliance on new balancing services at times of extreme system stress needs to be thought through carefully. We are acutely aware of the operational consequences of all aspects of managing the system and devote considerable care in the management of existing resources and the identification and development of new ones. We believe that the proposed new balancing services will only improve the options we have at our disposal to balance the system, particularly at times of system stress.

General

128. As with DSBR, in addition to the responses to specific issues, respondents made a number of general comments relating to SBR. These comments included: that, as for DSBR, we had not made the case for the new balancing service; that the market should be allowed to respond and could be relied upon to provide; and that the proposed new service would distort the wider market. Another comment was that it is not National Grid's role to ensure there is sufficient generation capacity available to meet demand. A number of respondents also commented that, rather than introducing SBR, efforts should be concentrating on introducing a capacity mechanism as soon as possible.

129. We acknowledge the comment that the case for SBR has not been made to the extent that estimates of loss of load expectation (LOLE) are no worse than the Government's proposed reliability standard of three hours. However, the nature of LOLE is that a small deterioration in the margin of generation over demand can see a significant increase in LOLE[2], and is therefore very sensitive to the uncertain outlook during the mid-decade period. Consequently we consider it prudent to develop the facility by which we could procure SBR to support us in balancing the system against this uncertainty, accepting that (i) there may not be a need to actually procure SBR if the market responds to tightening margins, and (ii) any SBR we did procure might never actually be used. SBR is intended only as an additional safeguard, to be deployed only as a last resort in the unlikely event that there is not enough capacity available in the market to meet demand.

130. With regard to comments that the market could be relied upon to respond, SBR will only be used if this does not happen. Moreover, by ensuring that SBR feeds into cash out prices if it is used at a price approaching the cost of demand disconnection (£3,000/MWh) via Ofgem's Electricity Balancing SCR proposals, the procurement and ability to use SBR would enhance price signals compared to the current market.

131. We understand the concerns that SBR could distort the wider market, and we have sought to minimise any possible distortion to the energy market by ensuring that SBR is not allowed to participate in the markets for energy and other balancing services and, to the maximum extent possible, is called only as a last resort when all other non emergency actions have been taken. Even to the extent that SBR has slow dynamics, thus requiring that other plant is deloaded in order to allow SBR plant to run up to meet an anticipated need, such other plant will be deloaded by accepting bids in the balancing mechanism and thus will not be disadvantaged.

132. Some respondents have expressed concerns that once we have established an SBR contract with a particular plant, we might despatch that plant ahead of other plant in the balancing mechanism for energy or system balancing purposes. However, we are proposing that this will be prevented by clearly defining the circumstances under which SBR can be used in the Balancing Principles Statement, which would need to be approved

[2] As an example, for LOLE of 3 hours corresponds to a de-rated margin of around 3.7%, a 2% reduction in the margin would increase LOLE to 8.7 hours; a 3% reduction would increase LOLE to 15 hours.

by Ofgem and with which we comply as a condition of our licence. Aside from warming and testing, we are proposing that we can use SBR only where we would otherwise need to invoke Emergency Instructions, i.e. as a last resort after (dynamics, etc., allowing) all other relevant commercial balancing options have been exhausted.

133. In addition, we have considered the concern that SBR contracts could result in some generators remaining on the system and re-entering the energy market after the SBR contract expires, thereby diluting the future rents of other generators. However, we think it is not clear that this would happen. In particular, if a generator were to remain open after the SBR contract has expired then this would imply that after the SBR contract has expired the generator can earn rents from the market sufficient to cover its costs. If, however, in the absence of a SBR contract the generator were to close (which implies that present losses outweigh the future profits) then we would expect new entry instead to take advantage of those future profit opportunities. Thus, it seems that the concern is that the SBR generator would dilute future rents in what would otherwise be an undersupplied, inefficient market. We do not think this concern is valid in view of the imminent implementation of the capacity market as part of Electricity Market Reform.

134. As for whether it is not our role to ensure there is sufficient generation capacity available to meet demand; the energy market has in the past delivered sufficient resources for us to be able to balance the system, and our procurement activities have merely been limited to ensuring that sufficient balancing actions are available in operational timescales. We believe that this approach will give rise to the most efficient market, serving the overall needs of consumers at least cost in the short and long term. However, balancing the system against a background of narrowing margins will be more challenging, and we believe that it is prudent to extend the range of balancing tools available to us should this occur.

135. Whilst the market-wide capacity mechanism will provide adequate capacity margins in the longer-term, our proposals have been developed to deal with margin concerns in the short-term. We do not see how the introduction of a new balancing service during this period poses any risk to the implementation of the capacity mechanism.

Product (Question SBR1)

Our Initial Proposals

136. We proposed that we would procure generation or, in principle, demand reduction to be used as a last resort after all other balancing actions (including DSBR) have been exhausted but before emergency actions, including involuntary disconnection of demand, are invoked.

137. We proposed that Supplemental Balancing Reserve should be available from 6am to 8pm on non-holiday weekdays in the months November to February.

Comments Received

138. Some comments agreed that our proposals were broadly appropriate to address the balancing issues arising out of margin concerns in the mid-decade period. However many comments were critical, including:

(i) that tightening of the market would be reflected in power prices and that mothballed capacity would be expected to recommission to meet demand requirements;

(ii) that there would be practical limitations on SBR being used as last resort, such as the necessity to warm plant and the necessity, where plant has slow dynamics, to despatch it ahead of need, and that the market would thus be distorted in spite of our attempts to implement any last resort provision;

(iii) that the market would be further distorted as wholesale prices would effectively be capped at the point at which SBR plant is synchronised;

(iv) that the dynamics of STOR are better suited to being last resort and that the need for SBR is not clear as the STOR market is oversupplied;

139. Detailed comments included:

(v) that SBR should be allowed to compete in other markets;

(vi) that SBR should be required to hold Transmission Entry Capacity (TEC); and

(vii) that SBR is not appropriate for the demand side as there is no equivalent of coming out of mothballs;

Our Response

140. Whilst we agree in principle that tightening margins will give rise to higher prices and increase the supply of generation to meet demand, it is the concern that this process will not operate effectively that has resulted in various initiatives, including the Electricity Balancing SCR and the Government's Electricity Market Reform. Pending the completion of these initiatives we believe that it is prudent to establish arrangements that would enable the procurement of additional reserves to support us in balancing the system during the mid-decade period.

141. We recognise that, unless SBR were to have very fast dynamics, it is likely that it would have despatched ahead of some other balancing actions in order to reach its required output at the required time. This effect, whereby generators and demand response are not necessarily scheduled in strict price order at any given instant, is a normal feature of the efficient despatch of most power systems. We anticipate that when this situation arises, and on any occasion that SBR has to be warmed, then marginal plant is likely to be constrained off and compensated accordingly. Thus the inframarginal rents, i.e. the

difference between revenues and avoidable costs by which generators recover fixed costs, of other generators would be preserved and distortion of the market minimised.

142. We acknowledge the comments that, rather than procuring SBR, we should procure greater quantities of STOR. We do not subscribe to this view. SBR is intended to ensure that we secure sufficient resources to enable us to balance the system at times of system stress. It is not necessary that these resources have the dynamic characteristics that are required by STOR. (To the extent that more plant with given dynamics *are* required during periods of system stress, this requirement may result in a modification to the STOR requirement at these times.) Moreover, an important requirement of SBR is that it can be demonstrated to be additional, whereas no such requirement exists for STOR. These issues are discussed at greater length in Appendix A.

143. We disagree with the comment that SBR should be able to compete in other markets, such as energy. We believe that this would have the effect of merely displacing other plant from the market which could then potentially close without additional sources of revenue, the so-called "slippery slope" effect. This would lead to the situation of all plant requiring subsidy via an SBR contract and what would, in effect, become a market-wide capacity mechanism.

144. We do not agree that SBR providers should be required to acquire TEC in order to provide SBR. We could have adopted this approach and SBR providers would have merely added the cost of acquiring TEC to their tenders, most likely with a risk premium included for the uncertainty of acquiring TEC without knowing whether it would be successful in acquiring a contract for SBR. We thus prefer that SBR providers, particularly given they are excluded from the market and despatched only as last resort, are given the necessary access rights to the transmission system under the terms of the SBR contract, only as and when required, with this being reflected in the lower prices we are likely to pay for SBR.

145. Finally, we acknowledge the comment that SBR is not appropriate for the demand side as there is no equivalent of coming out of mothballs. When framing our original proposals we recognised that, whilst the demand side could participate in SBR in principle, it would be difficult to demonstrate additionality for demand side resources. Nonetheless, if a significant demand side resource complying with the participation criteria were tendered, we would consider how additionality could be established.

Changes to our Initial Proposals

146. We are proposing that SBR providers are not required to hold TEC but will be granted, to the extent necessary, sufficient transmission access rights under the SBR contract.

Participation (Question SBR2)

Our Initial Proposals

147. We proposed arrangements to require that plant providing SBR is additional, i.e. that it would not have been available for despatch had not been contracted to provide SBR.

148. To this end, we proposed that, for the duration of the contract, plant providing SBR would not submit non-zero Physical Notifications or offers and bids into the balancing mechanism, unless otherwise instructed by the system operator, and that output from any resource providing the service would not accrue to any Energy Account. We proposed requiring tenderers to provide evidence demonstrating to our reasonable satisfaction that plant being provided would not be participating in the energy market or providing other balancing services.

149. We proposed also that, to minimise the complexity for the system operator, SBR would be provided only from resources which can be despatched to provide a reserves of 50MW or more through a single despatch interface.

Comments Received

150. Comments generally supported the proposal that SBR should be additional. One respondent said despite not supporting SBR, preferring instead an accelerated market-wide capacity mechanism, it considered the general requirement to demonstrate that capacity would otherwise be unavailable should be sufficient to ensure SBR is genuinely available. However another respondent said that we should publish the requirements for additionality. A further comment was that SBR plant should be allowed to participate regardless of its operational status provided that it could demonstrate that in the absence of a contract they would not participate in the market. Other comments were that mothballed plant which is able to re-enter the market is not additional and that only plant that will or is likely to close is additional, whilst another was that any plant that is open but would not run during the availability windows should be eligible.

151. Other comments were that existing capacity holders would have a perverse incentive to threaten closure in order to increase the perceived requirement for SBR and that, to avoid this, SBR should be limited to plant that had identified prior to the publication of our proposals that it would not run in winter 2014/15.

152. Other comments were that: excluding plant from other markets could be counter-productive; and that a threshold of 50MW was discriminatory and that it would exclude OCGTs that might have been unsuccessful in STOR tenders.

Our Response

153. We agree with the comment that SBR plant should be allowed to participate regardless of its operational status, provided that it could demonstrate that in the absence of a contract it would not be participating in the market. However, with regard to publishing the requirements for additionality, we are concerned that requirements that would cover all eventualities would be too difficult to define. We now think that, similarly, evaluating evidence provided on a case by case basis might also be too subjective and potentially discriminatory.

154. Accordingly, we now propose that we would rely on a declaration by the board of directors of the company, given at the tender stage, to the effect that the plant will not be participating in the markets for energy or other balancing services, irrespective of the current status of the plant and regardless of whether or not a SBR contract is secured. Such declarations would be published such that the market had a clearer view of what plant could be expected to withdraw.

155. We agree that there is a risk of market participants seeking to influence the quantity of SBR procured by signalling the closure of plant that does not subsequently occur. We believe that the public declarations, coupled with being held outside the market for the duration of the SBR contract, will reduce the likelihood of speculative applications and that only plant that is genuinely expecting to be outside the market will tender for an SBR contract.

156. However, we recognise that 'additionality' is a key issue for SBR, and would welcome industry views on whether these proposals are sufficient to ensure that only genuinely 'additional' plant applies for an SBR contract, or whether an additional contractual provision should be introduced. For example, one potential suggestion would be the inclusion of a market re-entry fee to reinforce the 'additionality' provisions. Views on these issues and thoughts on any additional provisions that might be included should be provided as part of responses to Question 3 in Section 7 of these proposals.

157. We do not agree with comments that mothballed plant should be precluded from providing SBR and that only plant that is closing permanently should be eligible. With plant that would otherwise be mothballed, we would not be paying for plant that would have been in the market anyway and this, combined with last resort despatch, would ensure that the plant were additional during the term of the SBR contract. Whilst we understand the concern that plant can re-enter the energy market after the expiry of the SBR contract, this concern could apply equally to plant that would otherwise have closed as well as plant that would otherwise have been mothballed. However, as discussed earlier, we believe that allowing plant to re-enter the market does not represent a material distortion to the market, and hence we do not think either that allowing mothballed plant to tender for SBR is inappropriate.

158. Finally, we acknowledge that a limit of 50 MW may be unnecessary. However, as a last resort product, we require the SBR plant to be a registered BM Unit, to be under the direct control of the system operator, to have EDL to the Control Point and operational metering feeding into National Grid's control room.

Changes to our Initial Proposals

159. We now propose that SBR should not be required to provide evidence of additionality but that a declaration by the board of directors be required to the effect that the plant will not be participating in the markets for energy or other balancing services, irrespective of the current status of the plant and regardless of whether or not a SBR contract is awarded.

160. We propose also that there is no de minimis size requirement but that SBR plant should be a registered BM Unit, be under the direct control of the System Operator, have EDL to the Control Point and operational metering feeding into National Grid's control room.

Payments and Charges (Question SBR3)

Our Initial Proposals

161. We proposed that SBR receive an agreed £ per MW per year for de-rated reserve capability, utilisation payments at an agreed rate in £ per MWh and warming payments at an agreed rate in £ per hour in the event that it is instructed to warm.

162. We proposed also that SBR be liable for non-delivery charges in the event that it is despatched but fails to generate as instructed. We proposed that SBR providers would be provided with a menu of non-delivery charges and de-rating factors, such that each SBR provider could choose a non-delivery charge and de-rating factor and would be incentivised to select the de-rating factor that corresponds with its best estimate of its outage rate.

Comments Received

163. A number of respondents agreed with the proposal, commenting that the proposal seemed sensible since SBR would be likely to be provided by plant approaching the end of its economic life and planning to retire;

164. Other comments received included:

(i) that the standard approach using VoLL minus cash out provides a clear signal to capacity providers of the cost of the failure to perform and provides incentives to invest in reliability when making plant available, and that it would be simpler and more cost-reflective to have a uniform penalty and that this would discourage unreliable capacity from bidding for SBR contracts;

(ii) that penalties should reflect only the additional cost of despatching other plant;

(iii) that the proposal was unlikely to be workable, and that providers should offer their quantity of capacity and level of penalties, and National Grid could rank offers and make judgement of whether any offers represent value for money; and

(iv) that there should be a consistent approach for both supply and demand side solutions.

Our Response

165. We acknowledge the comment that a "standard" penalty of VoLL minus cash-out reflects the cost of the failure and provides incentives to invest in reliability.

166. However, most power systems have redundancy whereby a high level of reliability for the system is achieved by having a portfolio of generators which typically have a reliability that is lower than is required overall. Failure of the system as a whole to provide enough capacity may cost VoLL minus cash-out (or VoLL when imbalance charges are included) but this is not necessarily an appropriate penalty to apply to individual generators having individually lower levels of reliability.

167. We recognise that the proposals for a capacity market in EMR have a uniform penalty of VoLL minus cash-out but these proposals allow secondary trading whereby generators may trade on their obligations to other generators or may enter into other arrangements whereby the risk of failure may be shared. This is not possible when we are procuring SBR from a very small number of generators and possibly even only one. Thus, we believe, it is appropriate for SBR that the penalties are related to the reliability of the individual SBR provider, rather than a uniform penalty rate applying equally to all SBR providers.

168. Nor do we agree with the view that penalties should reflect only the additional cost of despatching other plant. The failure of a given SBR provider may require not only that another SBR provider is despatched but also that the second SBR provider has been procured in the first place. Thus the penalty should reflect not only the replacement despatch costs but a proportion of the fixed costs, too. For resources that are infrequently used, it is likely to be the fixed costs that will be important.

169. In light of the comments received we have been further developing our proposed approach. We are now proposing that tenderers would be asked to declare an estimate of their reliability. This declared reliability would be used in calculating the contribution of the tendered plant to achieving our SBR requirement, and hence the relative value of the tenders. For example, if two resources were to tender the same quantity of SBR at the same price, that which declared the highest reliability would take preference in the assessment process.

170. To incentivise accurate declarations of reliability, we are proposing that we would measure the actual performance of the SBR plant when despatched, including during monthly tests. If the observed reliability is less than the tendered reliability then a non-delivery charge will apply, whereas if it is equal to or greater than the tendered reliability then no such charge applies. Recognising that the tender process gives a strong incentive not to underestimate reliability, the proposed non-delivery charge will be calculated to give an equally strong incentive not to overestimate it. By doing so, the overall incentive is intended to be to neither over nor under declare reliability and, instead, to declare the tenderer's most accurate, unbiased estimate of the tendered plant's reliability.

171. We recognise that the possibility of incurring penalties that exceed capability payments could be a deterrent to potential SBR providers. However, with scheduled monthly tests, we believe that it is possible to cap non-delivery charges to the payment for capability such that capability payments less non-delivery charges are never negative and SBR providers would not be at risk of owing rather than receiving payments.

172. Details of our revised non-delivery charge proposals are described in Appendix C.

173. We acknowledge the comment that the approach for generation and demand should be the same and we would propose to apply the same non-delivery scheme to any demand side provider of SBR. We do not think, however, that this implies that there should be equivalent penalties for DSBR, as the structure of payments for DSBR is very different to SBR, with no fixed payment, except for the optional set-up fee, such that the penalty for non-delivery of DSBR is primarily the loss of the relatively high utilisation payments.

Changes to our Initial Proposals

174. We propose that tenderers should declare an estimate of reliability which is used in the tender evaluation. Actual performance will be observed and a non-delivery charge applied in the event that declared reliability proves to overstate actual performance.

Verification (Question SBR4)

Our Initial Proposals

175. We proposed that we would have the right to call tests of SBR providers to confirm that they could provide the service they had contracted to provide. We proposed also that it might be appropriate to undertake tests on prospective service providers as part of tender assessment.

Comments Received

176. Most respondents agreed with the proposals, commenting that both National Grid and plant operators would want to ensure that plant could respond when instructed. Specific comments included: that rules would be required in the event that plant failed a test, with the payment period being shortened by the time taken to prove full availability; and that withholding of availability payments related to capacity until capacity is proved would remove the need to undertake random spot tests.

177. Other comments included: a suggestion that the existence of non-delivery charges implies that verification is not necessary; and that the testing regime should be based existing arrangements in the market, such as black start, with two tests being spit over November to February with SBR plant being paid in instalments after successful completion of tests.

Our Response

178. We note the comments that we should have the right to undertake tests, and further comments both in favour and against us exercising that right by calling routine tests.

179. We recognise, notwithstanding that we have non-delivery charges, that undertaking routine tests would give added confidence that SBR providers would be able to perform when

required, and that, indeed, such tests could help providers to ensure their plant was in a state of readiness.

180. Moreover, our revised methodology for non-delivery charges relies on a measure of actual reliability. If we did not have routine tests then it is possible that SBR could be despatched in some winters only once or twice, or maybe not at all. It is also likely that, when despatched, SBR providers are likely either to succeed in delivering their full capability or to fail to generate at all. Without routine testing, we thus think that, for an unreliable SBR provider, non-delivery charges would have to be uncapped for them to work. Only by being uncapped would the non-delivery charges in the winters that the SBR provider failed counterbalance the winters that the SBR provider delivered its full capability, albeit perhaps only fortuitously.

181. We think that it is desirable that non-delivery charges be capped and so we propose that we undertake routine tests and that we undertake these monthly.

Changes to our Initial Proposals

182. We propose to test SBR providers monthly over the winter, with the results of these tests, and any despatch in earnest, feeding into the calculation of the observed reliability. A non-delivery charge will apply if the observed reliability falls below the reliability declared at the time of tender.

Despatch and Call-Off (Questions SBR5 & TAC5)

Our Initial Proposals

183. We proposed that SBR plant would be despatched by the system operator and would otherwise not be permitted to run.

184. We proposed that SBR would be despatched as last resort, irrespective of its utilisation rate.

185. We said that we were undecided whether it would be most expedient to despatch SBR plant through the balancing mechanism or through instructing the SBR provider to submit Physical Notifications. If through the balancing mechanism we suggested that the last resort nature of SBR could be achieved either by ignoring the Offer Price or by setting the Offer Price such that it was last in the merit order. Adopting the latter could result in large cash flows through the BSC that would need to be subsequently recovered under the terms of the SBR contract.

Comments Received

186. Comments received agreed that SBR should be despatched as last resort. Specific comments included:

(i) concerns that dynamic characteristics of SBR could require it to be scheduled in advance of other plant to ensure it was available when required, thus displacing other plant, and that if this were to occur National Grid should compensate affected plant;

(ii) concerns regarding comments at the stakeholder event that economics may be taken into account in determining whether to run SBR ahead of other plant;

(iii) that clearly defined rules should be created that define when SBR is used and which Ofgem, DECC and the system operator are signed up to;

(iv) that if the intention is that the cost of the service should be fed into imbalance prices in a similar manner to other reserve contracts then it might as well be done through the balancing mechanism, with the utilisation prices forming the relevant offers; and

(v) that SBR should be despatched through the balancing mechanism with an Offer Price of the highest accepted Offer Price plus £1/MWh, with this Offer Price being taken into account in cash-out.

Our Response

187. We recognise the concern that dynamic characteristics could require SBR to be scheduled in advance of other plant. As discussed earlier, we anticipate that when this situation arises then displaced plant is likely to be constrained off, thus preserving the inframarginal rents of the displaced plant.

188. We understand concerns that SBR might be run ahead of other plant, thereby undermining the profitability of the plant displaced. However, we propose that SBR will be despatched as last resort, to the extent that dynamics and any other technical considerations permit.

189. We agree that a clear statement of when we will use SBR is required and our proposed changes to the C16 Statements incorporate such a statement;

190. The treatment of SBR in calculating imbalance prices, we discuss below.

Volume and Tender Assessment (Question TAC4)

Our Initial Proposals

191. We proposed that, consistent with the use of SBR as last resort, the benefit of SBR be assessed only after taking into account the effect of any DSBR that has been or is expected to be procured. We proposed further that the value of each SBR tender be determined as the reduction in EEU costed at VoLL less contract payments. Contract payments would consist of the capability payments plus expected utilisation payments less expected non-delivery charges.

Comments Received

192. Comments received included:

(i) support for assessing SBR against the alternative of load disconnection valued at VoLL;

(ii) that with a proposed reliability standard of three hours then under the reference scenario SBR would not be needed and that the cost benefit analysis will be very sensitive to assumptions made about EEU and LOLE; and

(iii) that for a given scenario say with an EEU of 11GWh and a LOLE of 9 hours, it isn't clear when within the 9 hours the bulk of the EEU occurs, such that the up to 3 to 4GW of SBR could be required.

Our Response

193. We recognise that estimates of LOLE under the reference scenario of Ofgem's Capacity Adequacy Assessment are low and comparable to the Government's proposed reliability standard. However, the supply and demand outlook is uncertain for the mid-decade period, and we will take account of this uncertainty in assessing the need for SBR.

194. We agree that the assessment could be sensitive to assumptions about LOLE and EEU. Accordingly we recognise any requirement to procure SBR will need to be robust against a range of possible supply and demand scenarios.

195. In assessing the requirement for SBR, we will have regard to the latest supply and demand outlook, the uncertainties associated with that outlook, and the Government's draft reliability standard, drawing on published information in Ofgem's Capacity Assessment Reports, our Winter Outlook Report and Future Energy Scenarios, together with other relevant information relating to generation availability and trends in demand. The quantity of SBR required will be published in advance of any tender process.

196. Where economic and efficient to do so, we will aim to procure a quantity of SBR to meet this requirement and will accept tenders to achieve this at least cost, taking into account: the tendered quantity and price; the declared reliability; expected costs of testing, warming and utilisation; together with the expected costs of validation, contracting, settlement and despatch.

Changes to Our Initial Proposals

197. We are proposing that we will establish the requirement for SBR, if any, having regard to the latest supply and demand outlook, the uncertainties associated with that outlook, and the Government's draft reliability standard. This requirement will be published in advance of any tender process. Where economic and efficient to do so, we propose that we would accept the tender or set of tenders to achieve this requirement at least cost.

Contractual Arrangements and Settlement (Question SBR6)

Our Initial Proposals

198. We proposed that the SBR contract would require generators not to generate (or, in principle, demand reducers not to reduce demand) except as instructed by the system operator. We said that we expected that the contract would, among other things, deal with submission of Physical Notifications, despatch, non-delivery charges, testing, minimum commitments on availability, and payment arrangements.

199. We also stated that we did not anticipate any material issues regarding settlement and would be administered in a similar manner to the existing suite of balancing services contracts.

200. We said that our current view was that 20% of capability payments would be become due following successful demonstration of capability ahead of the winter season and that the balance, net of any non-delivery charges, would become due at the end of the season.

Comments Received

201. Comments received included:

(i) that monthly settlement would be more cost-reflective;

(ii) that the majority of the capability payments should be made upfront with the balance paid monthly, with utilisation and warming fees paid as they occur;

(iii) that it was not reasonable to settle the vast majority of costs following the end of the winter.

Our Response

202. We recognise that making the bulk of payments after the end of winter could have adverse cash flow implications for SBR providers. However, we are of the view that whilst making payments for capability up front could be advantageous for SBR providers, it would involve making payment well in advance of the service being delivered.

203. Hence, we are now proposing that payments are made monthly. These monthly payments will include a proportion of the capability payments less an estimate of non-delivery charges, plus payments, if any, for utilisation, warming and testing.

Changes to our Initial Proposals

204. We propose that payments, comprising capability, utilisation and warming, less non-delivery charges, will be made monthly.

Imbalance Pricing (Question SBR7)

Our Initial Proposals

205. We suggested that if SBR were despatched through the balancing mechanism, albeit ignoring utilisation prices in order to implement despatch only as last resort, then this could have the perverse effect of reducing imbalance prices. As with DSBR, we proposed that the costs of SBR would not be reflected in imbalance prices pending the outcome of Ofgem's cash-out review.

Comments Received

206. Some comments agreed with our proposals, saying that the objective of the cash-out review is to focus on what is required to deliver effective and enduring arrangements for the long term and that the need to accommodate short term measures, which may or may not be needed, should not compromise that objective.

207. A number of other comments suggested that we should incorporate SBR into imbalance prices. Specific comments included:

(i) that SBR should be reflected in imbalance prices otherwise there was a risk of dampening scarcity prices;

(ii) there is the potential to undermine the market by smearing costs across all BSUoS payers rather than targeting costs at those who may have caused relevant shortfalls by failing to purchase enough capacity through the wholesale market arrangements;

(iii) given that the service is intended to be called extremely infrequently, how SBR is despatched and how SBR is treated in cash-out could be addressed by manual workaround. Even though resulting cash-out prices could not be published immediately, as long as it is clear that, if SBR is called, cash-out prices will go very high, then the publication delay should not be a problem;

(iv) that the arrangements would need to be reviewed by Ofgem, but that the cash-out review should be completed before SBR is implemented and thus guidance should be forthcoming; and

(v) it is important that SBR is not included in surplus margin data.

Our Response

208. We acknowledge that it is generally accepted that the sharpness of price signals needs improving, and that the incorporation of the costs of SBR into imbalance pricing is important. We think there is little value in attempting this piecemeal, and we expect that Ofgem's SCR will address the pricing of SBR together with other reserves and non-costed actions into imbalance prices. Assuming the concept of a Reserve Scarcity Pricing function is adopted, cash out prices would approach the cost of demand disconnection

(£3,000/MWh) if margins tighten to the extent we need to call upon SBR to balance the system, thus ensuring that when SBR is used, price signals would ensure that incentives on market participants to balance their positions would be promoted.

209. In the meantime, we do not believe that our proposals would dampen prices. SBR will be held outside the energy market and will be despatched, at times of scarcity, in preference to other, currently uncosted actions.

210. We note the comment that costs should be targeted purely on parties that have failed to purchase sufficient capacity in the wholesale market. Our proposed treatment of SBR is entirely consistent with other balancing costs. As with these other costs, the extent to which costs are borne by parties who are short is determined by imbalance prices. Moreover, under the BSC such imbalance charges are paid on the same basis that BSUoS charges are levied, thus mitigating the smearing effect referred to in the comment.

211. We agree that the system plant margin will not reflect the quantities of SBR available.

Other

Comments Received

212. Other comments received were:

(i) that placing reliance on new balancing services at times of extreme system stress needs to be thought through carefully;

(ii) that transparency is very important to allow market participants to factor in costs, and notification of all bidders (successful or not) should be revealed immediately as such information will be market sensitive and impact participants costs.

Our Response

213. As with DSBR, we agree with the comment that placing reliance on new balancing services at times of extreme system stress needs to be thought through carefully. As with DSBR, we believe that SBR will only improve the options we have at our disposal to balance the system, in particular at times of system stress.

214. We acknowledge the comment regarding transparency. Whilst we do not see how the identity of unsuccessful bidders will necessarily influence the costs of participants, we do agree that the declarations of tenderers, which we intend to publish, will provide useful information to the market.

215. Consistent with information available for other balancing services, we also intend to publish information concerning details of the successful SBR tenders, and details of the how and when the service is subsequently used.

216. This section provides an indication of the level of internal and external costs associated with the development, procurement and despatch of the new DSBR and SBR balancing services, and how these costs should be recovered.

External Cost Estimates for DSBR

217. We are proposing that the DSBR product would attract an optional set up payment of £10/kW per winter. This was chosen at a level to help to facilitate growth in new demand side resources, but below the level that would result in existing resources migrating away from STOR and other demand reduction services. For example, a STOR provider in the current market might expect to receive £4/MW/h for 1,400 hours of availability over the winter seasons (corresponding to £5.60/kW), plus 20 hours of running at £0.2/kWh (adding another £4/kW). Whilst the potential income from utilisation could be much higher for DSBR, it would be far less certain given the circumstances under which it would be used.

218. Feedback to the initial consultation suggested that new demand side resources are difficult to recruit, and for the limited duration of the DSBR contracts and set up fee involved, uptake may be low.

219. Nevertheless, for the purpose of estimating costs, we assume the recruitment of 1000MW of DSBR resources with a set-up fee of £10/kW and an average utilisation rate of £5/kWh, despatched for an average 4 hours per year, with a 75% availability factor. Against these assumptions, the external costs associated with this service would be 1000 MW x (£10/kW/yr + £5/kW x 4 hrs/yr x 0.75) or around £25m per year, equivalent to 25 pence per year on the average domestic consumer bill.

External Cost Estimates for SBR

220. The majority of SBR costs would be associated with capability payments, given that this plant is unlikely to run other than for occasional testing. Hence the cost for each SBR resource would largely be a function of its capability, the tendered capability price (£/kWh) and the declared reliability.

221. Assuming we procure 2 GW of the SBR product, we can use the cost of STOR as a proxy for the likely level of SBR costs. Under contracts agreed in the recent STOR tender, a typical STOR provider would receive £4/MW/hr, for 3850 hours of per year at an average availability of 85%. They may typically run for 60 hours per year at an average utilisation price of £200/MWh. On this basis, the cost of 2 GW of SBR might cost around £50m per annum, equivalent to £25/kW. Costs of warming, testing and utilisation would be small in comparison, on the basis that SBR would run very infrequently.

222. However, STOR operates in an over supplied market with significant downward pressure on prices. Increasing the quantities of reserve we procure is likely to ease these pressures, and although there is likely to be competition for SBR contracts, costs may be higher than the marginal price we currently pay for STOR. That said, DECC estimates for the O&M costs of

CCGT plant to be in the range £18-26/kW/yr (with a central estimate of £22/kW/yr) which would suggest that bids for SBR approaching £25/kW/yr might not be an unreasonable assumption.

223. Overall, were we to procure 1 GW of DSBR and 2 GW of SBR, we estimate that this could cost in the order of £75m per year. Given an annual electricity demand in the region of 330 TWh, and the annual demand for a typical domestic consumer of 3,300 kWh, this would equate to 75 pence on the average consumer bill per year.

Incentivisation

224. National Grid Electricity Transmission is incentivised to procure and use balancing services economically and efficiently via the Balancing Services Incentive Scheme (BSIS). This complements our overall statutory and licence obligations under which operate the national electricity transmission network. A set of models and methodologies are used to determine a target for the efficient cost of operating the system (generally using historic prices and forecast service volumes, with some adjustments for outturn volumes/costs that sit outside our control). This target is compared to actual costs incurred, National Grid receives an incentive payment if costs are below the target, and makes an incentive payment if the costs exceed the target.

225. Whilst, in principle, the costs of SBR and DSBR could be included within the BSIS scheme to provide explicit assurance that National Grid is incentivised to procure these services economically and efficiently, without knowing the quantity of these reserve services we might procure, how much they might be used, and what prices might be tendered, it is not possible to establish a reasonable target within the BSIS scheme that would provide a meaningful incentive. Establishing a target for these costs within the current BSIS scheme could thus undermine the incentive properties of the scheme.

226. Accordingly, we propose that the external costs associated with the proposed new balancing services should sit outside the current BSIS incentive scheme, although they would continue to be covered by our obligation to operate the transmission system in an efficient, coordinated and coordinated manner as overseen by Ofgem.

227. Efficiency would be achieved by procuring these services in accordance with the methodologies described earlier, with all valid DSBR tenders being accepted subject to an economic test, and SBR tenders being accepted to meet our requirements at lowest cost.

228. Prices would be determined through a competitive tender process, with contracts accepted in economic cost order, with the services only used under a limited set of conditions. The procurement and use of these balancing services would be transparent, and subject to regulatory scrutiny, allowing the opportunity to demonstrate that we have done so economically and efficiently.

229. If a new BSIS scheme is introduced from April 2015, the option of including these costs in any such incentive scheme could be considered at that time, when more is known about prices and volumes for these services.

Interactions with the Balancing Services Incentive Scheme

230. We acknowledge and understand that there may be concerns that we might benefit under BSIS by using these services, for example by scheduling DSBR or SBR instead of taking balancing actions in the balancing mechanism to resolve constraints or resolve energy imbalances. However, as described in this document and set out in the Balancing Principles Statement, the use of these services would be limited. SBR would be used only as a last resort, once all commercial options have been used and, whilst DSBR will be used in economic merit order, its utilisation rates imply it is likely to be used after most existing balancing services and only in preference to SBR and typically uncosted emergency actions.

231. To use particularly SBR ahead of existing balancing services in order to gain advantage under the incentive scheme would be counter to the Balancing Principles Statement, and would be immediately obvious to market participants. Hence, we do not believe that using these services would interact with the BSIS scheme such that we could gain commercially from their use.

232. We will publish information about the DSBR and SBR contracts we procure after the tender events and within the annual Procurement Guideline Report. We will also publish information about the use of these services in the Monthly Balancing Services Summary Report and our annual report (which is accompanied by an auditor's statement) on our compliance with the Balancing Principles Statement. These would provide market participants with complete transparency over the procurement and use of these new balancing services.

Recovery of External Costs

233. Contract costs associated with these products would be recovered through BSUoS charges together with other balancing services costs.

(a) Paragraph 4C.5 of Special Condition 4C (Balancing Services Activity Revenue Restriction on External Costs) of the NGET Transmission Licence defines the external costs against which we are incentivised (incentivised balancing services costs or IBC_t) as follows:

$$IBC_t = CSOBM_t + BSCC_t - RT_t - OM_t - BSFS_t$$

where:

$CSOBM_t$ relates to the costs of bids and offers in the balancing mechanism;

$BSCC_t$ relates to Balancing Services costs;

RT_t relates to Income Adjusting Events;

OM_t relates to revenue for providing Balancing Services to others; and

$BSFS_t$ relates to costs recovered via the $BSCC_t$ term in respect of feasibility studies for Black Start.

234. The additional costs we incur for the procurement and use of the SBR and DSBR products would fall into the $BSCC_t$ term. IBC is compared to the target which is set using a Target Model methodology, and this comparison is used to determine any incentive payments. The Target Model methodology does not include target costs for the SBR and DSBR products, and therefore the inclusion of any costs incurred for these products in the target would distort the incentive scheme.

235. Hence, to ensure that the costs of the new products sit outside the incentive scheme, we propose that this condition should be modified to remove the costs of SBR and DSBR from the calculation of the incentivised balancing services cost term (IBC_t) as follows:

$$IBC_t = CSOBM_t + BSCC_t – RT_t – Om_t – BSFS_t – SBR_t - DSBR_t$$

where:

SBR_t relates to cost associated with SBR in year *t* ;and

$DSBR_t$ relates to cost associated with DSBR in year *t.*

Internal Cost Estimates

236. Whilst highly indicative at this stage and presented only to help inform market participants, we estimate that development costs for the two products would be around £1m, with implementation costs in the order of £5m for DSBR and £2m for SBR. Annual operating costs associated with tendering, contracting, despatching and settlement of the two products are estimated in the region of £4m per year.

237. More detailed assessments of costs will be developed in due course, as the product designs are finalised, the commercial structure developed and detailed IS requirements established. The internal costs will be dominated by IS costs associated with the despatch and settlement of the new products, and in particular the volumes associated with the DSBR product in terms of the number of consumers who sign up to the service.

238. The costs for the development, procurement, contract management, despatch and settlement of these new services and the associated IS costs were not anticipated and therefore not included in the RIIO-T1 submission for our internal SO activities, and therefore this activity is not funded in our current allowances. The activities would represent a material extension to our existing system balancing role, one which was not foreseeable at the time of the RIIO-T1 price control process. Whilst an allowance of £1m per annum (in 2009/10 prices) was made for as yet unidentified market developments in the SO capex allowances, this was additional to any requirements resulting from concerns over capacity margins.

239. Furthermore, given that these costs are specific to the new balancing services and would only be incurred for a finite period of time, rather than open up the main RIIO-T1 price control, a more pragmatic solution would be to include costs on an ex-post basis within the allowed revenues for external costs. Under either approach, such costs would still fall into BSUoS charges.

240. Paragraph 4C.1 of Special Condition 4C of the NGET Transmission Licence establishes the revenue restriction on external costs of the balancing services activity as:

$$BXext_t = CSOBM_t + BSCC_t + ET_t - OM_t + IncPayExt_t$$

$$+ RFIIR_t + ROV_t + BSFS_t + NC_t + IONT_t$$

241. We propose that the NGET licence is amended to add an additional term to this formula that would allow for the recovery of efficiently incurred costs incurred in the development, implementation and ongoing operation of the new services, until such time that the services are no longer required. This would involve NGET providing a statement of costs annually to Ofgem, demonstrating that the costs where necessary and economically incurred, giving the Authority the option to veto the recovery of some or all of the costs incurred where they regarded these as inefficient.

Views Invited

242. If we decide to put forward proposals for the new balancing services to Ofgem, and those proposals are approved, we propose to submit a request to Ofgem to modify the NGET Transmission Licence as described above to allow for the recovery of internal and external costs associated with the new DSBR and SBR services. Accordingly, before making such a request, we are interested in receiving views from the industry on our cost forecasts and underlying assumptions, and whether this is an appropriate mechanism to recover the additional costs we would incur in undertaking these activities.

Section 7 – Consultation Questions

243. We have given considerable thought to these proposals in light of comments received throughout the consultation process. As a result we have made a number of amendments to the two products, and sought to explain our rational where we have not made changes.

244. We are confident that the two reserve products presented in this document are now sufficiently robust to be deployed if required.

245. Before deciding whether to present these proposals to Ofgem for approval, we would welcome any final comments from industry participants. We are particularly interested in views on the following questions:

DSBR Questions

Q1 . Do you consider that the proposed amendments to the DSBR product sufficiently address the issues raised in the consultation?

Q2 . Do you support us taking forward the DSBR product with these amendments?

SBR Questions

Q3 . Do you consider that the proposed the amendments to the SBR product sufficiently address the issues raised in the consultation? Do you consider that the additionality provisions discussed in Section 5 are sufficiently robust, or whether these should be reinforced?

Q4. Do you agree that procuring large volumes of extra STOR would be less economic and cause more distortion to the energy and balancing markets compared to SBR?

Q5 . Do you support us taking forward the SBR product? If not, what would be your recommended course of action if margin outlook deteriorates over the next 12 months?

Costs & Funding Questions

Q6 . Do you agree that our cost estimates, and the underlying assumptions, are reasonable?

Q7. Do you agree that it would be inappropriate to include these costs in the Balancing Services Incentive Scheme until such time prices and volumes for these products are better understood?

Q8. Do you agree with the proposed approach to the recovery incremental internal costs we would incur if we were to procure these additional balancing tools?

246. Responses on this consultation should be sent to balancingservices@nationalgrid.com by Monday 11th November 2013. Please indicate whether your response should be treated as confidential and whether we can share your response with Ofgem. Non-confidential responses will be published on our website.

Section 8 – Next Steps

247. This consultation, and the formal consultation on the associated C16 Statement changes, will close on Monday 11th November 2013. We propose to hold another workshop to discuss these proposals towards the end of October, and would ask that you register your interest by emailing Clare Mason at clare.mason@nationagrid.com. Details of the workshop will be made available closer to the time.

248. Our associated consultation on the proposed C16 Statement changes presents three options for possible implementation of the DSBR and SBR products. Option 1 deals with the introduction of DSBR and SBR together, Option 2 deals with the introduction of DSBR only and Option 3 deals with the introduction of SBR only. It should therefore be noted that proposed changes to the C16 Statements associated with the procurement and use of neither, one or both of the proposed products may be taken forward and presented to Ofgem for approval.

249. In light of responses to these consultations we will decide on whether to take forward either or both of these products for approval. Condition C16 of the transmission licence requires that if we decide to proceed, we present the proposed changes to the C16 Statements to Ofgem within 7 days of the C16 Statement consultation closing, after which it has up to 28 days to decide whether to accept those changes. If we proceed then we will, as part of such submission, present a report summarising the proposed product or products and the issues raised though the consultation process.

250. If Ofgem approves the changes, we will proceed with implementation. This will involve finalising the tender process and associated contracts, assessing whether there is a need to initiate procurement and establishing a quantity requirement. If we then identify a need to procure, we will start to establish the systems and processes necessary to enable these products to be used.

251. If we identify a need to procure, we will tender for SBR early in 2014, allowing the time for plant currently out of service to be returned ahead of winter 2014/15. We will indicate our intention to tender for DSBR at the same time, but would propose to spend several months marketing the product before opening the tender process in the summer of 2014. Contracts would be then established, providing sufficient lead time for these resources to be mobilised.

252. If you have any questions on these proposals please call Peter Bingham on 01926 655568 or email at peter.bingham@nationalgrid.com.

Appendix A – Short-Term Operating Reserve

1. A number of respondents to the June consultation paper suggested that increasing our Short Term Operating Reserve (STOR) requirements would be a more appropriate means of addressing concerns over narrowing plant margins compared to the proposed reserve products. Arguments within the consultation responses in favour of this approach included:

   (i) STOR is an existing product with a tender process and contract form that is well established and widely understood;

   (ii) there is an abundance of low-cost reserve available that has been unsuccessful in recent STOR tenders. Procuring additional STOR would therefore represent a low-cost means of accessing the additional reserves that we require;

   (iii) STOR should be expanded/modified rather than creating something entirely new that might only be required for a short period of time;

   (iv) the fast response times for STOR means it can be despatched quickly, avoiding the need to warm and schedule plant with longer lead times ahead of need. This would be a cleaner alternative and reduce the risk of depriving energy market participants of scarcity rents;

   (v) in the longer term we will need more responsive plant to deal with increased levels of intermittency. Therefore increasing our requirement for STOR will help towards meeting these longer-term needs; and

   (vi) the ability to self-dispatch outside the STOR availability windows would enable providers to retain the requisite warmth required to quickly respond to a shortage event.

2. These arguments are generally well made and we have given careful consideration to the views expressed. We agree that that there is a surplus of STOR available in the market at attractive prices, that the market for STOR is established and well understood, and that more responsive plant, if used as a last resort, would cause less disruption than plant with longer dynamics. We also recognise that expanding STOR might provide funding to enable mothballed plant to return and plant considering closure to remain open, even if this is not used for the purpose STOR is intended.

3. However, we believe that there would be a number of unintended consequences resulting from expanding STOR, and both DSBR and SBR have been designed specifically to avoid such consequences. This Appendix sets out our views on why we believe that despite all the arguments set out above, it would be more appropriate to introduce the new reserve products in preference to expanding our STOR requirements.

Procurement of Extra STOR

4. The three STOR tender rounds (TR22, 23, and 24) planned during 2014 could facilitate the procurement of additional STOR volumes across both the 2014/15 and 2015/16 winters periods (essentially STOR seasons 5 and 6 in both 2014/15 and 2015/16 winters). If

additional volumes were required for the second winter, the STOR tender rounds in 2015 could be utilised to further refine volumes contracted. To facilitate this approach, National Grid would need to communicate this approach to the market to ensure full visibility well in advance of TR22 (ITT pack issued early December 2013, market day in mid-January 2014). This would allow time for wider marketing, new provider discussions and the associated signing of framework agreements to facilitate potential providers being able to respond to a tender.

5. We currently procure STOR to replace frequency response and regulating reserves that are used in operational timescales to deal with an unexpected loss of generation and surges in demand, and it is generally required to respond within 20 minutes. Our STOR requirements are relatively stable at present, and not expected to rise over the next few years. Hence, given we do not require additional reserves to deal with such events, any extra volumes of STOR we do buy would need to be justified against a different requirement – i.e. the provision of additional reserves to support us in balancing the system against a background of narrowing margins. The definition of STOR may therefore need to be amended to allow for the procurement of extra volumes of STOR in an economic and efficient manner to meet this new requirement.

6. In order to ensure the extra STOR is available when required, we would procure this on a Committed rather than Flexible basis.

7. Furthermore, the need for this extra STOR to respond within 20 minutes is less relevant, as it would be procured for a different purpose. The extra STOR volumes would be used to support us in balancing the system if there is a general shortage in generation in the market, rather than used to manage unexpected events, and the need to use these reserves is likely to emerge well ahead of Gate Closure. Such reserves could therefore be provided by plant with much longer lead times. Applying the 20 minute criteria would also limit the volumes of additional reserves that would be otherwise available, and the parties from which that could be procured. Accordingly we would relax the 20 minute criteria for any extra STOR we buy, but retain the requirement to respond in 4 hours. This would make our requirements for the extra STOR volumes technology neutral and allow for a wider variety of traditional providers to apply.

8. In summary, by relaxing the 20 minute criteria and creating a new set of procurement rules, extra Committed STOR volumes could be procured for the winter seasons 2014/15 and 2015/16 from a range of technologies to provide the additional reserves we may require.

How much would we need to buy and how much might it cost?

9. An additional volume of Committed STOR could be procured to provide us with these additional reserves. The contribution of these extra STOR volumes to improving margins would depend on whether they could be classed as genuinely “additional” (i.e. would not otherwise appear in the market), which in turn would depend on how much volume is required and how existing market participants react. A significant proportion of the tenders for

these extra STOR volumes is likely to be from plant that would otherwise be in the market, and would not therefore contribute towards improved margins.

Existing STOR market size and participation

10. We estimate that there is currently around 1.75 GW of capability available in the STOR market that does not currently have a STOR contract. This is made up of 1.25 GW from BM Participants and 0.5 GW for non-BM Participants. Around half of this is capable of responding within 20 minutes, with the rest having longer response times.

11. It is estimated that of this 1.75 GW, around 1 GW will appear in the market during winter periods either within the wholesale market / balancing mechanism or as participants within triad avoidance. Accordingly, procuring the 1.75GW of STOR available in the current market would yield ~0.7GW of genuinely 'additional' reserves. Based on prices submitted in recent tenders, procuring these extra STOR volumes for the two winter seasons would cost around £8m per year. This would represent an equivalent cost of ~£11/kW, which could be regarded as economic. However, increasing our volume requirements would reduce the downward pressure on STOR prices, and we would expect the tendered cost for these volumes to be somewhat higher than the current market price of STOR.

12. Furthermore, if we increase our volume requirement and relax the 20 minute criteria, we believe that there is up to 6 GW of marginal generating plant that might apply, in addition to existing STOR providers. Embedded generation currently engaged in demand management activities (e.g. triad avoidance) might also bid for these extra STOR volumes.

13. A STOR contract may be very attractive to such providers, particularly given the challenges they face in the current market. STOR availability payments would enable them to cover a proportion of their fixed costs such that they could better compete in the wholesale and balancing markets outside the STOR availability windows and outside the winter seasons. Such payments may also enable them to offer more favourable utilisation prices such that they would be despatched ahead of other balancing mechanism and STOR participants, if their dynamics allow. They may also be available for use by the by the system operator for system balancing actions in order to resolve any constraints that might arise on the system. Signing STOR contracts would provide the flexibility to fully re-enter the market when conditions improve. For these reasons it is not surprising that some market participants are calling for an increase in STOR volumes.

14. We would expect significant volume of this marginal plant to come forward if we increased our STOR requirements, and we would be obliged to accept tenders in economic order, potentially having to "buy through" these existing market participants to access the genuinely "additional" volumes (i.e. plant that otherwise would not have been available to the market). The volume and potential value of these risks are considered in the following sections.

Procuring extra STOR volumes

15. To explore the volume impacts of procuring extra STOR, we have taken a hypothetical example of needing to procure sufficient volumes to access 2 GW of 'additional' reserves. In the current STOR market, 1.75 GW of STOR would provide ~700MW of 'additional' reserves. Thus using the same additionality ratio, we might expect to procure 5 GW or of extra STOR , over and above the 3GW that we traditionally buy to meet current STOR requirements, to achieve 2 GW of 'additional' reserves, effectively 'buying through much of the marginal plant that we might expect to apply for such a contract. This additionality ratio may be higher (with significant volumes of marginal plant coming forward and able to outbid traditional STOR providers and generation that has closed / mothballed), or it may be lower (with the market becoming more attractive due to a larger volume of plant being held outside the market during STOR availability windows). However, we believe that the procurement of an extra 5 GW of STOR to secure 2 GW of 'additional' reserves represents a reasonable central assumption to make in exploring this approach.

16. In contrast, SBR has been designed to specifically target plant that is genuinely additional. Parties will be required to declare that they would otherwise been unavailable in the energy and balancing markets. A SBR contract would represent an far less attractive 'holding' position compared to a STOR contract in that SBR plant would not be able to participate in the market for energy or other balancing services at any time during the period of the SBR contract, nor would it have the opportunity to compete with balancing mechanism providers and existing STOR providers for the provision of energy and system balancing actions. If market conditions improve, they would have to wait to the end of the contract before they could re-enter the market. Accordingly, we expect that the tenders we receive for SBR would be genuinely 'additional' – i.e. had it not been for the option of an SBR contract, that plant would have exited the market.

Cost of extra STOR volumes

17. The current short-term STOR market is oversupplied, thus offering very competitive prices (typically £4/MW/hr or less which is equivalent to ~£15/kW per year). However, with additional volumes on offer, market prices for extra STOR volumes would likely be higher as participants would have more opportunity to recover their annual costs and return a profit. Assuming extra STOR is offered to us at an equivalent cost of £20/kW, 5 GW of extra STOR needed to achieve 2 GW of additional reserves would cost around £100m.

18. For the most part, we would expect plant biding for SBR contracts to be similar to that applying for extra STOR. However, prices for STOR are likely to be lower than for SBR, since STOR would retain the opportunity to earn revenues from the energy and balancing markets, and is likely to comprise more efficient plant. Assuming SBR is offered at an equivalent price of £25/kW per year, 2GW of SBR would cost £50m.

19. Whilst we accept that some of the underlying assumptions used here are somewhat subjective, in general we believe that the cost of procuring SBR to access additional volumes of reserves would be significantly less than procuring extra STOR.

Unintended Consequences of buying extra STOR

20. This section explores other unintended consequences of procuring extra STOR in preference to DSBR and SBR.

Market Impact

21. We believe that procuring extra STOR would remove significant volumes of marginal plant from the wholesale market during the STOR availability windows. This would impact on wholesale prices, particularly during periods of high demand when margins are tight and plant that would have otherwise been available to the market is held back to provide STOR. In contrast, SBR would be plant that would not otherwise not be available to the market, and therefore market prices should be unaffected. DSBR would be creating new demand-side balancing resources rather than removing any capacity from the market.

22. In addition, the extra STOR would be able to cover some or all of its fixed costs via the STOR availability payments, enabling it to better compete in the wholesale electricity market outside the availability windows and outside the winter seasons for which it is contracted. This could impact on the earnings potential of other marginal plant competing in the wholesale market.

Impact on the Balancing Mechanism

23. The extra STOR procured through this process would add to the tools we could use to balance the system. Whilst traditional STOR volumes (capable of 20 minutes response time) would be reserved for the purpose it is intended (i.e. to replace frequency response and regulating reserves following unexpected plant loss/demand increases close to real time), the system operator would be free to use the extra STOR procured for other system and energy balancing actions where economic to do so and dynamics permit. We are obliged to operate the system economically and efficiently, and the extra STOR volumes may have lower utilisation prices (with fixed costs covered by availability fees) compared to Offers in the balancing mechanism. If this were the case, the extra STOR may be used in economic cost order in preference to plant in the balancing mechanism to manage energy imbalances and constraints, particularly if such plant has good dynamics.

24. As a result, marginal plant dependent on income via the balancing mechanism would be further marginalised and may seek a STOR contract to avoid closure – thus fuelling the ‘slippery slope’ and requiring yet more volumes of extra STOR to be procured to the point the balancing mechanism offers little value to marginal plant, and the only option for plant to remain viable if it cannot sell its energy on the wholesale market would be to pursue a STOR

contract. We would regard this as a wide ranging distortion to the way the balancing market currently operates.

25. In contrast, both DSBR and SBR have been specifically designed to minimise the impact on the current market for balancing services. DSBR is generally priced above the balancing mechanism offers, and therefore unlikely to be called in preference. SBR is only permitted to be used as a last resort when all commercial options, including balancing mechanism actions, have been exhausted, and Emergency Instructions would otherwise be required to secure the system.

Impact on the existing STOR market

26. In additional to the impact on BM Participants, existing STOR providers may be displaced by the extra STOR volumes having a lower utilisation price (subsidised by a higher availability payment) and equivalent dynamics. Thus the utilisation (and associated payments) expected by traditional STOR providers could be impacted.

27. The extra STOR volumes would result in an increase in the price of our traditional STOR requirements in the upcoming tender rounds, particularly if providers capable of a 20 minute response favour the longer response time required of the extra STOR volumes. For example, CCGTs who have decoupled their steam units to enable a 20 min response time may re-establish their steam units and bid for the extra STOR volumes where a 4 hour response is acceptable, reducing the amount of traditional '20 min' STOR available in the market.

28. Overall, we believe that procuring extra STOR to deal with concerns over capacity margins will pollute and undermine the existing STOR market. In our view, the effective, well functioning market for STOR should be retained and not used for this purpose.

29. Furthermore, procuring more STOR would represent a blunt solution to concerns over capacity margins. DSBR and SBR have been developed as targeted solutions that would have minimal impact on current markets, including the STOR market.

Could STOR be amended?

30. The design of the STOR product could be amended for the extra STOR volumes we require. For example, additionality rules could be included to avoid the need to 'buy though' existing market participants; annual 24/7 STOR contracts could be developed to hold the extra STOR volumes outside the market throughout the duration of the contract; and despatch rules could be added to ensure that the extra STOR volumes are only despatched as a last resort. We have effectively done this in creating SBR, although we acknowledge that some of these features could be introduced into the extra STOR we procure as an alternative to procuring SBR.

STOR is the wrong product

31. Finally, we don't need any additional STOR (fast acting reserves to replace frequency response and regulating reserves used to deal with unexpected demand increases or plant loss). We would simply be buying STOR for a different purpose to what it is intended. Hence our argument that while extra STOR (with the 20 minute response criteria relaxed) could provide additional reserves to support us in balancing the system against a background of narrowing margins; it is the wrong product to buy. This would be no different to buying more frequency response (with the need to be frequency responsive relaxed) in order to secure additional reserves.

32. While this might be acceptable as a short-term solution where small volumes are involved, buying large volumes of extra STOR for 2-3 years would represent a major distortion, polluting the wholesale energy market, the existing STOR market, and the wider market for balancing services.

Conclusions

33. The need for additional reserves to support us in balancing the system in the mid-decade period could be addressed by buying more STOR. However, it is likely that we would need to 'buy through' significant volumes of marginal plant to achieve the 'additional' reserves we require, making the procurement of extra STOR a more costly option compared to procuring the more targeted SBR and DSBR products.

34. We do not need any more Short-term Operating Reserves (STOR). Buying extra STOR for a different purpose to what it is intended (i.e. to deal with concerns over capacity margins) would pollute the existing STOR market.

35. Procuring extra STOR volumes would also distort the wholesale energy market and the market for balancing service, impacting on opportunities for existing participants in those markets. In contrast DSBR and SBR have been designed to minimise their impact on these markets.

36. In short, while procuring extra STOR has its benefits; it would represent a blunt and inefficient solution to addressing concerns over capacity margins. Procuring significant quantities of extra STOR would create a significant market distortion compared to SBR and DSBR, which have been specifically designed to minimise any such distortion.

37. Accordingly, despite all the perceived advantages of simply expanding STOR, we are not recommending this as the way forward.

Appendix B – DSBR Stepped Payments

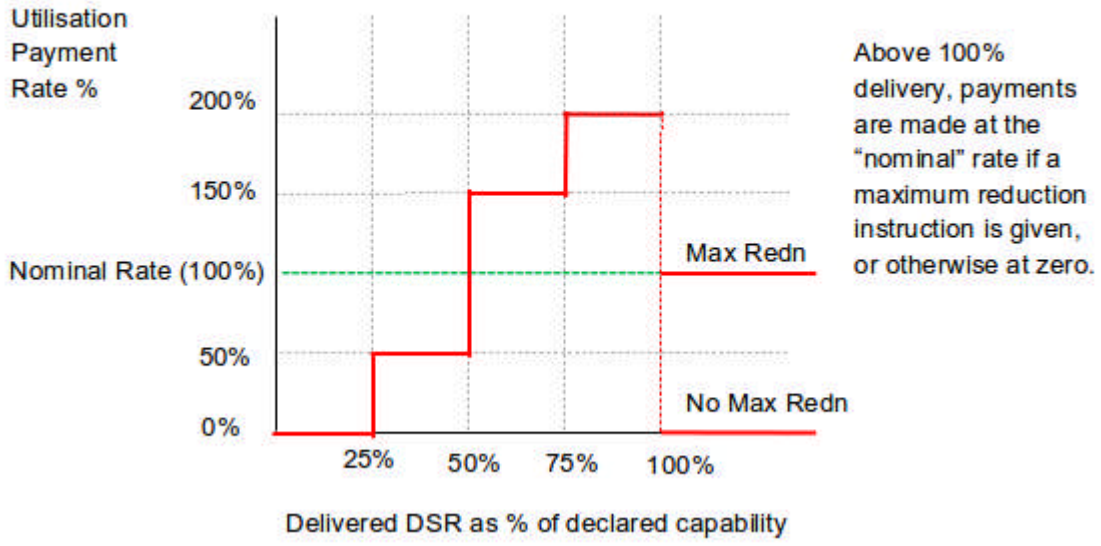
1. We proposed that payment for the delivered demand response would be "stepped" as follows: payment for the delivery of the first 25% of either the instructed demand reduction or the declared capability (whichever is smaller) would be made at a 100% discount to the provider's utilisation price; for the second 25% at 50% discount, while payment for delivery of the third and fourth 25% would be made at a premia of 50% and 100%, respectively, over the provider's utilisation price. There would be no payment for delivering more than the instructed demand reduction except in the event that the system operator issues a maximum reduction instruction. This is shown diagrammatically in Figure 1.

2. This structure of payments was designed to incentivise realistic declarations of Demand Side Balancing Reserve capability, thus giving greater certainty as to the response that can be expected. Under-declaring capability results in potential revenues being foregone, while over-declaring capacity results in more demand response being paid at the discounted rates.

3. Capping the demand reduction that is credited in any one Settlement Period to the declared demand reduction capability negates the incentive to over-deliver demand response towards the end of an instruction if the provider has under-delivered earlier in the instruction. Thus, the incentives would be to accurately declare both the MW demand reduction capability and the duration for which it can be sustained.

4. The absence of any payment on the first 25% also minimises the chance that Demand Side Balancing Reserve providers could earn payments speculatively on normal or random deviations from baseline quantities, rather than through taking definite demand-reducing actions.

Figure 1: Utilisation Payments vs. Delivered Demand Reduction



5. We proposed also that DSBR providers would be required to declare that they have put in place arrangements and procedures that give a reasonable expectation of delivering the declared demand reduction within two hours of being instructed, and will use reasonable endeavours achieve the demand reduction when instructed. Thus the obligation would not be binding when less than two hours notice of the demand reduction has been given.

6. We thus propose now that the same exception should apply to the application of the stepped payment schedule, as we think it would be unreasonable to penalise DSBR providers for failing to provide their full declared response capability when little notice has been provided. Instead, where less than two hours notice is given, demand reduction would be paid simply at the nominal utilisation rate.

7. Likewise, after further consideration, we are proposing also that both the obligation and the stepped payment schedule should not apply when the instructed demand reduction is for less than one hour, as it may not be reasonable or practicable for the DSBR provider to reduce demand for only a short period.

8. We have also given consideration to the possibility of an instruction to reduce demand during an availability window being followed by a further instruction. Here we have proposed that instructions are firm in that, once instructed, an instruction to reduce demand would not be countermanded by an instruction not to reduce demand. However an instruction could call for more demand reduction which could be either: contiguous with the first instruction (either by delaying the time at which demand reduction ends or by bringing forward the time at which the demand reduction starts); or separate from the first instruction.

9. We are thus now proposing: that

   (i) where more than two hours notice is given for all parts of the combined instruction, the stepped payment schedule would apply to the combined instruction (providing the combined duration is more than one hour);

   (ii) where less than two hours notice is given for part of the combined instruction, that part is paid at that nominal utilisation rate;

   (iii) where the two parts of the instructed demand reduction are not contiguous, the stepped payment schedule applies only where it applies to the first part taken by itself (i.e. it has a duration of more than one hour) and the second part of the instruction lies within the declared capability (in terms of duration).

10. We recognise that these conditions may seem overly complex. However, whilst we value the incentives on DSBR providers given by the stepped payment schedule, both to declare accurately their capabilities and then to deliver against those declared capabilities, we want to avoid applying the stepped payment schedule in circumstances where it would be unreasonable to expect the DSBR provider to provide its full demand reduction capability.

Appendix C – SBR Non-Delivery Charges

1. In the June consultation paper, we proposed that SBR providers would be able choose their preferred level of non-delivery charge but that we would infer an outage rate for the resource from the chosen non-delivery charge and evaluate the tender accordingly.

2. The intention was that unreliable plant would opt for a low non-delivery charge in anticipation that it had a significant probability of incurring it, whilst accepting that this would reduce the tender price at which the resource would be accepted. On the other hand, a reliable resource would prefer to signal its lower outage rate by opting for a high non-delivery charge, knowing that it was unlikely to incur it, whilst recognising that the lower outage rate would increase the price that it could obtain for its SBR capability.

3. We suggested that, by having a suitable trade-off between the non-delivery charge and the inferred reliability, each tenderer would have the incentive to declare its best estimate of its SBR resource, as declaring any other value would risk losing revenue either by lowering the price at which the tender would be accepted or increasing the non-delivery charges it would expect to pay.

4. We have continued to develop the methodology and the proposal is now as follows:

   (i) in respect of the plant being tendered, tenderers would be asked to submit a capability cost, CC, for a given capability (or a number of costs for a number of different capabilities) as well as utilisation costs and warming costs.

   (ii) tenderers would also be required to submit a reliability factor, RF_T, being the tenderer's best ex-ante estimate of its reliability;

   (iii) tenders would be evaluated on the basis of their capability cost and expected utilisation and warming costs. The contribution of the tendered capability would be calculated using RF^T, such that a tender of a given MW capability with a higher RF^T would make a greater contribution to reducing LOLE than a tender of the same MW capability with a lower RF^T. Thus, whilst we propose for any accepted tender merely to pay the tendered capability cost, plant with a given MW capability and a higher RF^T, could be tendered at a high price than an otherwise identical plant with a lower RF^T.

   (iv) at the end of each month, in respect of each SBR plant, i, an ex-post measure of reliability of plant, RF^A_{iM}, would be calculated, as follows:

   where $\Sigma_{m=1 \text{ to } M} \Sigma_{j \text{ in } m} QME_{ij} > 0$,

$$RF^A_{iM} = \Sigma_{m=1 \text{ to } M} \Sigma_{j \text{ in } m} \min(QM_{ij}, QME_{ij}) \; / \; \Sigma_{m=1 \text{ to } M} \Sigma_{j \text{ in } m} QME_{ij}$$

   where QM_{ij} is the BM Unit Metered Volume in Settlement Period j as determined under the Balancing Settlement Code;

   QME_{ij} is the expected metered output in settlement period j as calculated under the Balancing Settlement Code, and

reflects any Offer and Bid acceptance in the balancing mechanism as well as any Physical Notifications;

M is the month, being equal to 1 for the first month, 2 for the second, and so on;

$\Sigma_{j \text{ in } m}$ is the sum over all Settlement Periods in month m; and

$\Sigma_{m=1 \text{ to } M}$ is the sum of all months from the first month m = 1 to the current month M.

and where $\Sigma_{m=1 \text{ to } M} \Sigma_{j \text{ in } m} QME_{ij} = 0$, $RF^{A}_{iM} = RF^{T}_{i}$

(v) an estimate of the non-delivery charge, NDC_{iM}, would be calculated as,

$$NDC_{iM} = CC_i * 2*\max(1 - RF^{A}_{iM} / RF^{T}_{i} , 0)$$

Thus, if the observed reliability RF^{A}_{iM} as at month M is equal to or greater than the tendered reliability RF^{T}_{i} then the ratio of the two will be greater than one and the non-delivery charge will be zero. If, however, RF^{A}_{iM} is less than RF^{T}_{i} then the non-delivery charge will be greater than zero. Thus, for a given actual reliability, the total revenues, being the payment for capability less the non-delivery charge, is maximised by declaring a reliability equal to the actual reliability. (See Figure A1.)

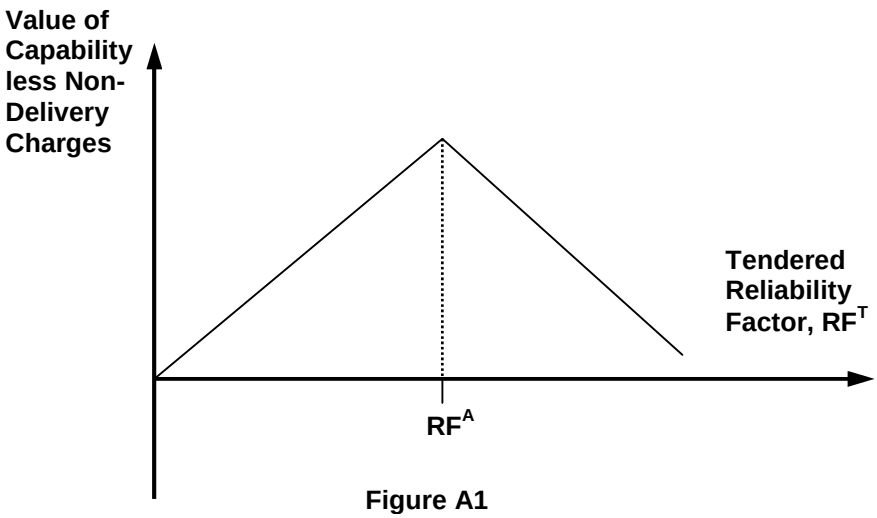


Figure A1

Moreover the loss in total revenue for every increment by which RF^{T} has been overstated when observed reliability is less than declared reliability is equal to the loss in revenue for every decrement by which RF^{T} has been understated when declared reliability is less than observed reliability. Thus, the intention is that the non-delivery charge gives an incentive to the tenderers to submit an unbiased estimate of reliability.

Notwithstanding that at month M, the period of the SBR contract may be only part way through, CC_i is the capability payment for the whole period of the SBR contract and, similarly, NDC_{iM} is the estimate of the non-delivery charge also for the whole period.

(vi) We would then calculate the estimate, as at month M, of the capability payment less non-delivery charges, $TOTCP_{iM}$, due at the end of the contract period,

$$TOTCP_{iM} = CC_i - \min \{ NDC_{iM}, CC_i \}$$

(vii) These estimates are made each month, rather than at the end of the contract period, in order that we can calculate monthly payments, which we would do as follows,

$$CP_{iM} = (M / TOTM) * TOTCP_{iM} - CP_{i,M-1}$$

where TOTM is the total number of months in the contract period. Thus, TOTM would be 4 for a one year contract, whilst a two year contract could be treated as a single period spanning the two winters with TOTM equal to 8, or treated as two separate one year periods with TOTM equal to 4 in each.

Hence, the payment each month would be the estimate of the payment due at the end of the contract period, pro rated by the number of months through the contract period, less the payments already made in previous months. It follows that, at the end of the contract period, total payments would be $TOTCP_{iM}$, being the capability cost as tendered, CC_i, less the final estimate of non-delivery charges, being $CC_i * 2 * \max(1 - RF^A_{iM} / RF^T_i , 0)$ albeit capped at CC_i.

5. Note that we are proposing to cap non-delivery charges at the level of the capability payments. We have taken the view that if the probability of despatching SBR plant during any given contract period were less than one then it would be important that non-delivery charges were *un*capped such that possibility of overstating reliability and thus earning an inflated capability payment in the event that the SBR plant were not despatched would be balanced by the possibility of incurring negative revenues (being the capability payment less uncapped non-delivery charges) in the event that it were despatched and failed to perform.

6. We were also concerned that the proposed approach would have an undesirable effect towards the end of the contract period. In particular, SBR providers who had outperformed their declared reliability could take the view towards the end of the contract period that further despatch was unlikely and that thus they had met their "quota" and could afford to withdraw their capability without any significant risk of incurring non-delivery charges.

7. However, we have proposed that SBR plant would be tested monthly and hence SBR plant will not be able to overstate reliability and rely on the possibility that it may not be called. In addition, we propose that if the plant ever fails either a test or any other despatch then we reserve the right to call a further test. This, we intend, would encourage SBR providers to maintain their capability right up until the end of the contract period.

Appendix D – List of Responses

We received thirty non-confidential responses from:

APX
Barking Power
Centrica
Combined Heat Power Association
Confederation of Paper Industries
Drax
Ecotricity
EdF
Eggborough Power
Elexon
Energy Pool
Energy Storage Networks
EON
GdF Suez
Honeywell
Linejump
Long Term STOR Providers
Mainstream
Matrix
mCHP
Micropower Council
NegaWatt
PassivSystems
RWE
Salient Systems
SGC
Smartest
SSE
UKDRA
Wartsila

In addition, we received five confidential responses.

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Template: C:\Documents and Settings\clare.mason\Application Data\Microsoft\Templates\Normal.dotm
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