

# Service Overview

## Demand Side Balancing Reserve

Peter Bingham & David Preston – National Grid

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### Overview

This note describes the Demand Side Balancing Reserve (DSBR) service that is being procured for the winters of 2014/15 and 2015/16 to provide additional reserves to support National Grid in balancing the transmission system where there is insufficient generating plant available in the market to meet the Government's Reliability Standard.

The service involves signing up large energy users who could voluntarily reduce their demand (or run small embedded generation) during winter weekday evenings in return for a payment. This service would only be used in extreme circumstances, in the unlikely event that there is insufficient generation available in the market to meet demand.

### Participation

DSBR is targeted at non-domestic consumers able to reduce/shift demand or run 'behind-the-meter' standby generation, and owners of small embedded generation or storage accruing to a supplier's consumption account.

DSBR can be provided by non-domestic consumers directly or by third parties, including suppliers, aggregators or other intermediaries.

DSBR is not intended for those consumers who already reduce/shift demand or run embedded generation during peak times on winter weekday evenings in response to pricing signals (e.g. Triad avoiders). Those with committed STOR contracts for these winters cannot participate.

DSBR can be provided by sites which are half-hourly metered and subject to the BSC settlement arrangements (i.e. > 100kW). A DSBR Unit represents one or more such sites providing the service.

DSBR providers declare their capability to reduce demand (or increase generation output) against a baseline demand profile for at least one hour between 4pm and 8pm on working weekdays in the months of November to February, having been given at least two hours notice.

The declared capability of a DSBR Unit must be >1MW, which may include an aggregation of smaller sites.

### Volume Requirement

The maximum volume of DSBR and Supplemental Balancing (SBR) required for each winter is determined according to the Volume Requirements Methodology approved by Ofgem.

This requirement, subject to a cap of 5% ACS demand, is based on the equivalent volume of capacity required in the market to meet the Government's Reliability Standard against a range of credible scenarios and sensitivities.

In June 2014 the volume requirements were identified as follows:

Year	Maximum De-rated Volume
2014/15	330MW
2015/16	1,800MW
2016/17	1,300MW
2017/18	800MW

Note that these volumes are de-rated values, and the actual volume procured will depend on how individual DSBR and SBR resources are "de-rated".

Taking account of the SBR and DSBR procured under Tender Round 1, we are minded to procure an additional volume of up to 1,000MW in Tender Round 2. This will be a combination of SBR and DSBR.

The actual volume required will be reassessed in April 2015, based on our 2015 Future Energy Scenarios and any approved changes to the Volume Requirement Methodology.

The first tender round for winter 2015/16 resulted in DSBR contracts up to 242MW being awarded (subject to final validation of MPANs and final DSBR contract offer decisions).

The second DSBR tender for winter 2015/16 is now open, running to 24<sup>th</sup> April 2015. An SBR tender will

run in parallel with the DSBR tender. A third tender may be run in June/July 2015 if a further requirement is identified.

Contracts will be offered to those offering best value to consumers in the provision of these services.

## Tendering Process

An online portal is available to allow service providers to register and tender individual DSBR Units made up of individual Meter Point Administration Numbers (MPANs). This is also available to potential service providers with large sources of demand that are CVA registered or that operate as a demand Balancing Mechanism Unit.

Tenderers are invited to declare a quantity of demand reduction<sup>1</sup> (in MW) that could be delivered relative to their baseline demand profile (the offered DSBR Capability), the settlement periods between 4 and 8 pm that this quantity could be delivered (the contracted service window), and the length of time this could be sustained within that window. They are required to specify the individual MPANs at each site that make up the DSBR Unit, and the capability offered through each individual MPAN.

The baseline demand profile for each settlement period represents the typical demand (or output) of the DSBR Unit in the winter weekday evenings of system peak demand.

Tenderers indicate whether they wish to receive an optional setup fee to support them in establishing their demand reduction capability. This will be £10,000/MW (£10/kW) for demand reduction that can be sustained for at least two hours, and prorated for demand reduction that can be sustained only for a period of less than two hours (but greater than one hour).

They also tender the Utilisation Rate at which they would wish to be paid for reducing demand from a range of nominal rates:

- £250/MWh (£0.25/kWh)
- £750/MWh (£0.75/kWh)
- £1,500/MWh (£1.5/kWh)
- £3,000/MWh (£3/kWh)
- £5,000/MWh (£5/kWh)
- £10,000/MWh (£10/kWh)
- £15,000/MWh (£15/kWh)
- £500/MWh (£0.50/kWh)
- £1,000/MWh (£1/kWh)
- £2,000/MWh (£2/kWh)
- £4,000/MWh (£4/kWh)
- £7,500/MWh (£7.5/kWh)
- £12,500/MWh (£12.50/kWh)

The higher the tendered rate, the less likely a tender is to be accepted and the less likely the DSBR Unit would be used.

<sup>1</sup> References to demand reduction include the ability to increase output from on-site or embedded generation

## Intermediaries & Customer Portfolios

To encourage and support intermediaries such as Aggregators, Suppliers and Customer Portfolio players in recruiting / managing a large numbers of smaller sites, these parties may tender to receive an Admin Fee. Each DSBR Unit tendered must comprise >50 individual MPANs to qualify. This will be paid at the end of the winter season, unless the DSBR Unit fails a DSBR Performance Test.

## Holding MPANs

For the first 2015/16 tender round we introduced the "Holding" MPAN process aimed at providing additional flexibility to 3rd party intermediaries to backfill tendered DSBR Units with actual MPANs after an additional 10 weeks following the close of the main tender window. Whilst 110 Holding MPANs were initially requested the final number of actual MPANs provided fell significantly short of this.

We remain open to offering the Holding MPAN flexibility but ask any interested participant to contact us directly during the main tender window to discuss the specifics of the opportunity. In recognition of the potential need to run a 3rd tender round any request for Holding MPANs would likely result in an additional period to provide the actual MPANs shorter than the 10 weeks offered in the first tender round.

## Demand / Generation Scenarios

There are the following 3 scenarios of service provision:-

1. Demand suppression only (either through load reduction or use of back up generation to offset demand without exporting to the grid);
2. Operation of back-up / embedded generation only (exporting to the grid with no impact on demand); and
3. Operation of back-up generation to satisfy demand (reducing import) with the residual volume being exported to the grid.

Under Scenarios 1 and 2, a single MPAN (either import or export) should be tendered. However, Scenario 3 will require 2 MPANs to be tendered and the potential for double counting accounted for (i.e. the import MPAN volume should correlate to offset demand volumes and the export MPAN volume should correlate only to export levels once demand has been satisfied).

## Tender Validation

In assessing each DSBR tender, we will undertake a number of desktop validation checks to verify that that the sites tendered are capable of providing the quantity of demand reduction offered. For volumes offered for each MPAN, National Grid will validate this against metered volume data across the offered Settlement Periods (SPs). This data will be sourced directly from the registered Data Collector for each MPAN.

For demand MPANs, the validation will compare the offered volume against the lowest import across the offered SPs from the 10 peak days across the declared "validation baseline winter".

For generation MPANs, tenderers will be asked to declare a day when the unit ran at the tendered output. The validation will consider the output on this declared day as well as compare the offered volume against the highest export across the offered SPs from the 10 peak days across the declared validation baseline winter.

This data will be sourced directly from the registered Data Collector for each MPAN. The validation process for holding MPANs will be deferred until these are substituted with real sites.

Where there is a disparity between an MPAN's offered volume and the validation baseline data, National Grid will discuss this directly with the tenderer. National Grid reserves the right to reduce / reject MPAN or DSBR offers subject to the validation processes.

For information, the validation baseline winter for the second 2015/16 DSBR Tender will be 2014/15. This will apply for actual and holding MPANs. Due to the need to wait for the BSC Settlement processes to run the ten peak days for the 2014/15 winter are not yet know. However, National Grid will publish this information when available, approximately mid-way through the 8 week DSBR tender window.

## Tender Assessment

The cost of each DSBR Unit will be determined as follows:

**DSBR Cost = Declared Capability (MW) x (Setup Fee (£/MW) + Admin Fee (£/MW)) + ΔEEU (MWh) x Utilisation Rate (£/MWh)**

Where ΔEEU is the anticipated reduction in energy unserved that would result from the additional DSBR capability, taking account of the settlement periods

during which the declared capability can be delivered, the duration any demand reduction / generation can be sustained during this window, and the reliability of the service.

The unit cost will be determined as:

**DSBR Unit Cost (£/MWh) = DSBR Cost / ΔEEU**

In general, SBR and DSBR tenders will be assessed together and accepted in ascending unit cost order, subject to the unit cost of each tender being less than the Value of Lost Load (VoLL). It may be necessary to deviate from this principle to ensure a consistent profile of capability is established between 4pm and 8pm.

This process will continue until either the volume requirement is met or no economic tenders remain.

Any valid DSBR tenders remaining, that opted not to receive a setup or admin fee, would be accepted subject to the tendered utilisation rate being less than VoLL.

The results of each DSBR tender will be published after the tender event, including the quantity of DSBR procured for each Utilisation Rate and the associated set-up and admin fees incurred.

More information about the procurement and tender assessment process can be found within the DSBR Procurement Methodology statement published on our website.

The DSBR Procurement Methodology is currently under review, and we are required to propose any changes to Ofgem for approval by 31<sup>st</sup> March 2015. Other than some cosmetic and tender timetable updates the proposed areas of update are detailed below and have been developed through experience gained during the initial DSBR winter of 2014/15:-

- an increase to the Reliability Factor (RF) component from 0.75 to 0.85 based on the high levels of performance evident through sample testing in the 2014/15 season.
- a review of the Demand Profile (DP) table to more adequately value the offer of DSBR volumes in each specific settlement period. This is likely to apply additional value to settlement periods of peak demand, typically between 16.30 and 18.30.

## Despatch Arrangements

Except for testing, DSBR Units will only be despatched by the System Operator after all feasible offers and bids in the Balancing Mechanism have been used, or expect to be used, in balancing the system. However, we will not deplete our operating reserves and frequency response holdings before despatching DSBR.

DSBR Units will be grouped into tranches defined by the tendered utilisation rate, with each tranche despatched in ascending price order.

DSBR Units may be despatched outside the contracted service window, recognising that in such periods the full DSBR capability offered might not be delivered. They will not be dispatched outside the 4pm-8pm DSBR service window.

DSBR would normally be despatched with at least 2 hours notice. However, DSBR may be despatched with shorter notice periods if the need arises, recognising that some providers may not be able to respond at such short notice.

A DSBR despatch instruction will specify the times between which the declared demand reduction capability should be delivered.

The despatch solution will utilise the online portal or an application that can be downloaded to a SmartPhone or Tablet to receive DSBR despatch instructions.

The despatch solution will broadcast a despatch instruction (and warnings) to the service provider instructing the associated DSBR Unit to reduce demand between two specified times. SMS messaging will be used to alert providers and individual site of any despatch instruction issued via the despatch system.

DSBR despatch instructions (except tests) will be notified to the industry.

More information about the despatch process is available in the DSBR Operational Methodology.

## Measurement

The quantity of demand reduction delivered will be calculated from half-hourly settlement data as the difference between the actual metered demand (or output) of the DSBR Unit and the baseline demand profile, and this will be calculated for each half hour of the despatch instruction.

The baseline demand profile for each DSBR Unit will be calculated as the average of the consumption (or output in the case of a generation MPAN) in the corresponding settlement period in the previous ten days of highest transmission system demand on which demand reduction was not called from that DSBR Unit on a rolling basis over the previous 12 months.

Note: Following the receipt of provider feedback and the experiences of collecting utilisation data through 14/15 winter period a separate utilisation baselining methodology will be offered to all successful tenderers from any tender round for the 15/16 winter. This will be calculated as the average of the consumption (or output in the case of a generation MPAN) in the corresponding settlement period in the previous ten working days on which demand reduction was not called from that DSBR Unit. For the purposes of this methodology Christmas Eve and all days between Christmas Day and New Years Day will be counted as non-working days.

Whilst it is optional for any successful tenderer to migrate to using the new utilisation baselining methodology, it is National Grid's preference that all successful tenderers do so. A simple side letter process will be available to all successful tenderers post contract award.

Metering data to enable validation and settlement will be provided by Data Collectors (BSC Mod P299).

## Payments

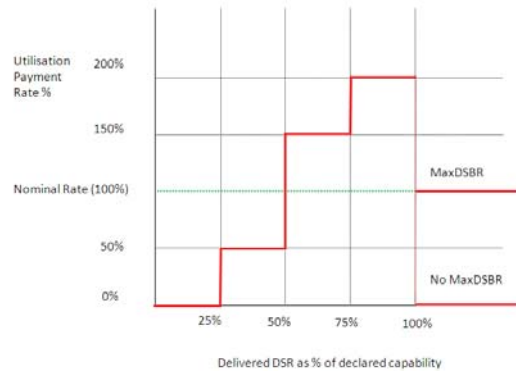
Those who elected to receive the setup fee will be paid ahead of the winter availability season. Admin fees for intermediaries and customer portfolio players will be paid at the end of the winter availability season, unless the associated DSBR Unit fails a DSBR Performance Test.

DSBR providers will be paid for utilisation within two months after the month in which they were despatched.

Except under certain circumstances, the utilisation payment to each DSBR Unit will 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.

Demand reduction will be paid up to the declared capability at the nominal utilisation rate if called with

less than two hours notice, if called less than 2 hours after the last despatch instruction ended, or was despatched outside the contracted service window.



The costs of DSBR, including setup fees, utilisation payments and any admin fees will be recovered through BSUoS charges. These costs will sit outside the Balancing Services Incentive Scheme (BSIS) and subject to Ofgem approval.

### Testing

A sample of DSBR Units will be tested over the winter availability season. Those selected for testing will be given at least two hours notice and despatched for at least 1 hour. Utilisation payments will be paid in accordance with the arrangements described above.

If a DSBR Unit in receipt of a setup or admin fee fails to deliver 75% of their declared demand reduction capability when despatched for a shortage event or in response to a sample test, National Grid will have the right to investigate whether the DSBR provider has established the capability to provide the DSBR service and have the right to schedule a DSBR Performance Test without making a utilisation payment

A DSBR Performance Test would be called with at least 2 hours notice, and instructed according to the contracted service window and declared sustainability duration. Such tests would be deemed to have failed if less than 75% of the declared capability is delivered over the duration of the instruction. Following such a failure, a second DSBR Performance Test may be scheduled.

National Grid would have the right to recover the setup fee in the event that a DSBR Performance Test is not successfully completed. Any admin fees due in respect of that DSBR Unit would also become void.

### DSBR Tendering Costs

As part of an earlier SBR tender, we introduced a facility where if a potential provider could demonstrate that it would incur material incremental costs directly related to the submission of a valid SBR tender, and such costs would be avoided if no tender were submitted, we would consider contributing to such costs if the tender is unsuccessful. Any such contribution would be at National Grid's discretion, subject to an economic benefit assessment, and only be applicable to non-permanent, short term costs for submitting a valid tender. It would not apply to the costs of preparing and submitting a tender.

This facility is also available to DSBR, although we cannot envisage circumstances where it might apply. If you believe this might apply to your DSBR tender, please contact us. For clarity, it is not intended that this opportunity would apply to any marketing / promotion costs incurred by a DSBR participant associated with a tender submission.