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Service Description
Demand Side Balancing Reserve

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Overview

This note describes the Demand Side Balancing Reserve (DSBR) service that may be procured for the winters of 2014/15 and 2015/16 to provide additional reserves to support National Grid in balancing the transmission system if 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 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. 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 would declare their capability to reduce demand (or increase generation output) against a baseline for at least one hour between 4pm and 8pm on working weekdays in the months 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 total volume of DSBR and Supplemental Balancing (SBR) required for each winter will be determined according to the Volume Requirements Methodology approved by Ofgem.

This requirement, subject to a cap, will be 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. The volume requirement will be published ahead of any tender event.

Tendering Process

If we identify a requirement for DSBR in the winters of 2014/15 and/or 2015/16, this will be tendered in the spring / summer preceding each winter delivery season. Four month contracts will be offered for each winter.

An online portal will be made available to allow service providers to register and tender individual DSBR Units.

Tenderers will be invited to declare a quantity of demand reduction[1] (in MW) that can be delivered relative to their baseline, the individual Meter Points through which that quantity would be delivered, the length of time this could be sustained, and the settlement periods between 4 and 8 pm the declared demand reduction would typically be available.

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

[1] References to demand reduction include the ability to increase output from on-site or embedded generation

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

They would also tender the Utilisation Rate at which they would wish to be paid for reducing demand from a range of nominal rates: £0.25/kWh, £0.50/kWh, £0.75/kWh, £1/kWh; £1.5/kWh; £2/kWh; £3/kWh; £4/kWh; £5/kWh; £7.50/kWh; £10/kWh; £12.50/kWh; and £15/kWh.

Intermediaries

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

Tender Verification

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.

Tender Assessment

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

DSBR Cost = Declared Capability (kW) x (Setup Fee (£/kW) + Admin Fee(£/kW)) + ΔEEU (kWh) x Utilisation Rate (£/kWh)

Where ΔEEU is anticipated reduction in energy unserverd that would result from the additional capability. The unit cost will be determined as:

DSBR Unit Cost (£/kW) = DSBR Cost / (Declared Capability x 0.75 x S/4)

Where S in the number of hours the demand reduction can be sustained during the 4 - 8 pm availability window, and 0.75 is an initial estimate of the reliability of DSBR resources.

SBR and DSBR tenders will be assessed together and accepted in ascending unit cost order, subject to the expected cost of each tender being less than reduction in energy unserved (ΔEEU) valued at the Value of Lost Load (VoLL).

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 paid.

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 would normally be despatched with at least 2 hours notice. However, DSBR may be despatched with shorter notice periods if needed, 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. A MaxDSBR instruction will require each resource to provide as much demand reduction as possible.

The despatch solution is under development, and may include an application that could be downloaded to a SmartPhone, Tablet or PC to receive DSBR despatch instructions. The despatch solution will broadcast a despatch instruction (and warnings) instructing the associated DSBR Unit to reduce demand between two specified times.

Any DSBR despatch instructions will be notified to the industry (via BMRS).

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, and this will be calculated for each half hour of the despatch instruction.

The baseline for each DSBR Unit will be calculated as the average of the consumption in the corresponding settlement period 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.

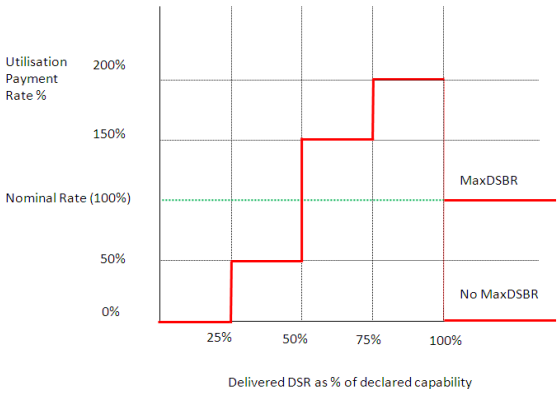
Metering data to enable validation and settlement will be provided by Data Collectors (BSC Mod P299).

Payments

Those who elected to receive the setup fee will be paid at the start of the winter availability season. Admin fees for intermediaries will be paid at the end of the winter availability season, unless the associated DSBR Unit fails a DSBR Proving Test.

DSBR providers will be paid for utilisation within three 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 declared periods of availability. If a MaxDSBR instruction is issued, the total demand reduction delivered will be paid at the nominal utilisation rate.

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

Testing

A sample of DSBR Units will be tested over the winter availability season. Those selected for testing will 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.

If it has reasonable grounds to suspect that this is not the case, National Grid would have the right to undertake a DSBR Proving Test without making a utilisation payment, and recover the setup fee in the event that a test is not successfully completed. Any admin fees due in respect of that DSBR Unit would also become void.

A DSBR Proving Test would be called with at least 2 hours notice, and instructed according to the availability periods and sustainability declared in the tender. The test would be deemed to have failed if less than 75% of the declared capability is delivered over the duration of the instruction.

Imbalance Prices

The cost of DSBR will not initially feed into the calculation of imbalance prices, although we expect this to be addressed as part of Ofgem's Electricity Balancing Significant Code Review.