

# Gas Security of Supply Significant Code Review

## Draft Business Rules

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### Assumptions

- For each day within a Gas Deficit Emergency (GDE), where the GDE has progressed to Stage 2 but Firm Load Shedding has not occurred, the cashout price for short and long shippers will be 'dynamic':
  - The cash out price for each shipper's short balance position will be the daily System Marginal Price (Buy), subject to a cap equating to Value of Lost Load (VoLL). (This cap will not apply for the first day in which the NEC declares a Stage 2 emergency); and
  - the cash out price for each shipper's long balance position will be the daily System Average Price, subject to a cap equating to VoLL (This cap will not apply on Day1 of stage 2 of the GDE).
- Cashout for long balance positions will continue to be dynamic throughout the GDE as described above.
- Cashout for short balance positions will continue to be dynamic prior to Firm Load Shedding. Thereafter, the System Marginal Price (Buy) will be set at VoLL.
- Where a GDE has begun and finished within the same calendar month all charges described within these business rules shall be included in that month's Energy Balancing Invoice. If the GDE spans across two calendar months the daily charges described within these business rules shall be included within the relevant M+23 Energy Balancing Invoice.
- Funds recovered via the above will be used to pay long shippers, market balancing actions and other Balancing Neutrality Charges as under the current arrangements. The residual funds will be used to fund Demand Side Response (DSR) Payments to customers that have been curtailed as part of Firm Load Shedding (rather than being smeared back to Users)
- DSR Payments will be made once sufficient funds have been recovered. If there are insufficient DSR Funds (once cash-out and balancing neutrality charges have been calculated) to pay the required DSR Payments, the shortfall will be targeted at short shippers based on the sum of short shipper imbalance positions and quantity of gas curtailed. If the targeted costs do not fully recover the required shortfall, the remaining shortfall will be recovered via neutrality. Non-payment of a shipper's Energy Balancing Invoice may also result in a shortfall in the [DSR Fund] i.e. the [DSR Fund] not fully covering the DSR Payment liabilities. In this case the usual arrangements for non-payments would apply i.e. recovered through neutrality. DSR Payments will not be passed onto shippers until the non-payments are fully recovered (from neutrality) and the [DSR Fund] is made whole.
- Shippers will pass DSR Payments onto relevant suppliers as soon as reasonably practicable who will then in turn credit consumers' accounts (as soon as reasonably practicable). (This obligation will be governed through licence changes rather than code changes.) If consumers have

changed suppliers prior to receiving their DSR Payment, [it would be the shipper and supplier at the time of DSR Payments are allocated that would receive the money and be required to pass it on].

- Post Oct 2012 GDE stages (as proposed in Modification 0412 – ‘Changes to the Stages of Emergency Resulting from Changes introduced by Exit Reform’) are used to reference GDE stages within these business rules.
- All sites (other than those on commercial demand reduction contracts), will receive DSR Payments where instructed to curtail load during GDE Stage 2 Firm Load Shedding. Such sites will receive DSR payments for each day they are curtailed, unless they are within the area of a Local Distribution Zone (LDZ) that is subject to Network Isolation.
- Where Network Isolation has occurred, curtailed sites (both DM and NDM) within the affected area will receive DSR payments for Day 1 of the Network Isolation only. DSR Payments will continue to be made for each day where a relevant site (that is curtailed due to Firm Load Shedding) is NOT within the area of an LDZ that is subject to Network Isolation.
- Emergency Curtailment Quantity (ECQ) will be used to calculate the volume for which DSR payments that should be paid within Stage 2 Firm Load Shedding for DM sites (DM sites include voluntary and elective DM sites).
  - If sites with commercially demand reduction contracts are curtailed by their transporter following a NEC instruction, these sites would receive the contractually agreed exercise price from their supplier. The quantity would not be included in the ECQ process for that supplier and would therefore not receive the System Average Price of the last 30 days but will retain any volume for the purposes of their imbalance position. To this end, suppliers will be required to provide information on demand reduction contracts to NGG. Contracts for commercial demand reduction for NDM will not be able to be included in this process.
- NDMs will receive DSR payments based on the overall NDM curtailed volume, within the relevant LDZ, pro-rated over the total SOQ value of all curtailed NDM sites within the LDZ.
- In respect of each relevant LDZ; the relevant NDM shippers’ market balance calculation will include an ‘uplift’ quantity that accounts for the NDM demand curtailment volumes above that which has been allocated through Gemini. The uplift quantity will be based on the [the forecast undertaken prior to the NEC instruction to the DN to reduce load]. The ‘uplift’ will be enacted in the form of a ‘deemed’ trade with the SO. The ‘uplift’ quantity will determine the payment for additional gas that is ‘contracted’ to be delivered by NDM shippers; the shipper will receive 30 day SAP for this gas.
- On the GDE day; where the NEC has instructed the DN to reduce offtake to an LDZ; and NDM curtailment is likely to reduce NDM Allocation, shippers’ will be informed of the revised forecast demand that includes an ‘uplift’ quantity, which reflects the additional quantity of gas that is required to be delivered.
- The ‘uplift’ quantity used in the calculation of market imbalances for NDM shippers will only be used for Day 1 of the demand curtailed as part of Network Isolation. If additional Network Isolation is initiated on Day 2,

only demand curtailed as part of this additional Day 2 Network Isolation will be included in the calculation. For avoidance of doubt, a site will only be factored into the uplift calculation on the first day it is subject to Network Isolation.

- Where, following Stage 3 Network Isolation, the number of Supply Points affected by Network Isolation becomes clearer, a process will allow for the amended list of Supply Points to receive DSR payments.
- For the purposes of calculating imbalances, if NDM sites are asked to reduce or curtail the flow of gas to the site, the default assumption is that the customer obliges.
- For the purposes of calculating DSR payments if large NDM sites are asked to reduce or curtail the flow of gas to the site, the default assumption is that the customer has not reduced the flow of gas unless the customer can prove that the site has been curtailed.
- For the purposes of these business rules VoLL is equivalent to £0.682428 pence per kWh (£20/Therm).

## Business Rules

These business rules explain the proposed changes to the Uniform Network Code associated with the Gas Security of Supply – Significant Code Review.

### 1. Overview

In the event of a GDE (stage 2 and above) being declared by the National Emergency Coordinator (NEC) the following shall apply;

#### 1.1. Prior to Firm Load Shedding;

- (a) In the case of short shippers the SMP Buy price for the day will apply with no cap.
- (b) The day after stage 2 of the GDE has been declared, the SMP Buy price will be subject to a cap equating to Value of Lost Load (VoLL)
- (c) In the case of long shippers the SAP for the day will apply but will be subject to a cap equating to VoLL from the Day 2 of stage 2 onwards.

#### 1.2. Once the GDE has progressed to Firm Load Shedding within Stage 2 (and above):

- (a) In the case of short shippers, the cash out price for the day will equate to VoLL until restoration of the market
- (b) In the case of long shippers, the cash out price for each GDE day will be at SAP of the gas flow day (subject to a cap equating to VoLL until restoration of the market).

**Table 1: Cash out applicable to short shippers (pre-load shedding) and long shippers (from stage 2 onwards)**

	<b>Short shippers (GDE stage 2 Day 1)</b>	<b>Short shippers (after GDE stage 2 Day 1)</b>	<b>Long Shippers (GDE stage 2 Day 1)</b>	<b>Long shippers (after GDE stage 2 Day 1)</b>
Maximum Price (cap)	None	VoLL	None	VoLL
Price	SMP (Buy) of the day	SMP (Buy) of the day	SAP of the day	SAP of the day

1.3. Imbalance Charges paid by Users will flow into Neutrality (as is). Once payments to long shippers and Balancing Neutrality Charges have been calculated, the residual balance will be used to determine if additional funds are required to cover the DSR payments. Rather than this residual being smeared to all Users based on throughput, it will be retained.

1.4. Where there are insufficient funds to cover DSR payments (i.e. the residual as outlined in [1.3] is less than the [Required DSR Fund] as calculated in [3.1], Users with a negative Daily Imbalance shall pay a [DSR Fund] Imbalance Charge. If the [DSR Fund] Imbalance Charge over or under recovers the required DSR Funds, the following arrangements will apply:

- i. Where there continues to be a shortfall within the [DSR Fund] following the [DSR Fund] Imbalance Charge, then neutrality will be used to recover the remaining shortfall to ensure all DSR Payments can be made in full. This will be recovered from neutrality within the same Energy Balancing Invoice;
    - ii. Where there is a surplus within the [DSR Fund] following this [DSR Fund] Imbalance Charge, this surplus will be smeared back to all Users through neutrality. This will be smeared back through neutrality within the same Energy Balancing Invoice
  - (b) Where there is a surplus of funds following the DSR payments, this surplus will be smeared back to all Users through Neutrality.
- 1.5. LDZ Forecasts provided by DNs shall reflect the reduction in demand associated with NDM reduction in the LDZ.
  - 1.6. With the exception of Supply Points with a commercial demand reduction contract, where a User's Supply Point has been curtailed during Stage 2 or Stage 3 within a GDE, Xoserve will, subject to sufficient funds (as outlined in [4.2]) being paid into the DSR Fund, pay that Shipper a DSR Payment in relation to each relevant Supply Point.
  - 1.7. Where a Supply Point with a commercial demand reduction contract is curtailed as part of Firm Load Shedding, the ECQ process will not apply and no corresponding DSR Payment will be allocated.
  - 1.8. For the purposes of these business rules VoLL is equivalent to £0.682428 per kWh £20/Therm.
2. Market Imbalance Calculation applicable in the event of a GDE
    - 2.1. For Stage 2 of a GDE, the calculation to determine each shippers market imbalance will be calculated using the following:
      - (a) The ECQ methodology will be used to calculate DM volumes;
      - (b) A new 'uplift' methodology will be used to calculate NDM volumes (see below).
    - 2.2. Where NDM demand has been curtailed, a new methodology will be implemented that will 'uplift' a NDM shippers UDQO to account for the drop in demand that would have been allocated to that specific shipper were no NDM curtailment to have taken place. This 'uplift' quantity will be based on the difference between the forecast NDM demand for the gas flow day and the NDM allocation for the gas flow day.
    - 2.3. The 'uplift' quantity will be enacted in the form of a 'deemed' trade with the SO; and will be used to determine payment for additional gas that is 'contracted' to be delivered by NDM shippers.
    - 2.4. The shipper will be paid the 'uplift' quantity multiplied by the average of the previous 30 days SAP.
    - 2.5. The 'uplift' quantity used in the calculation of market imbalances for NDM shippers will only be used for Day 1 of the NDM demand curtailed as part of a Network Isolation. If additional Network Isolation is initiated on Day 2, only demand curtailed as part of this additional Day 2 Network Isolation will be included in the calculation.

2.6. For stage 2, where NDM demand has been curtailed and is likely to reduce the total LDZ's NDM allocation quantities, the 'uplift' will be calculated for each day that the relevant NDM demand is curtailed, or affects the NDM allocation.

### 3. Demand Side Response Fund and Payments

3.1. The [Required DSR Fund] will be calculated using the following formula:

$$\text{Required DSR Fund} = \text{DM curtailment Funds} + \text{NDM curtailment Funds}$$

Where:

$$\text{DM Curtailment Funds} = \text{VoLL} \times \text{applicable DM curtailment volume}$$

And:

$$\text{NDM Curtailment Funds} = \text{VoLL} \times \text{applicable NDM curtailment volume}$$

Applicable DM and NDM curtailment volume is calculated as in Appendix A.

3.2. Each shipper will receive, on behalf of each curtailed end consumer, a Demand Side Response Payment for each Supply Point curtailed during Stage 2 and 3 of a GDE in line with the following;

$$\text{Shipper DSR Payment} = \text{Shippers DM curtailment Payment} + \text{Shippers NDM curtailment Payment}$$

Where:

$$\text{Shippers DM curtailment Payment} = \text{VoLL} \times \text{Shippers DM curtailment payment volume}$$

And:

$$\text{Shippers NDM curtailment Payment} = \text{VoLL} \times \text{Shippers NDM curtailment payment volume}$$

Shippers DM curtailment payment volume is calculated using the ECQ methodology.

Shippers NDM curtailment payment volume =

$$\frac{\text{Total curtailed NDM volume}}{\sum \text{SOQs for all curtailed NDM supply points}} \times \sum \text{shippers consumers specific SOQ}$$

- (a) Subject to paragraph [3.2(b)], for each day within Stage 2 and above of a GDE, where a Firm Supply Point is curtailed as part of Firm Load Shedding, the Shipper will receive a Demand Side Response Payment for each relevant Supply Point as calculated using the methodology in [3.2].

- (b) For the avoidance of doubt, for each day within Stage 2 and above of a GDE, where a User's Supply Point, with a commercial demand reduction contract, is curtailed as part of Firm Load Shedding, the Shipper / consumer will receive no Demand Side Response Payment
  - (c) Sites curtailed as part of a GDE other than those identified in paragraph [3.2(b)] will be identified in line with the process described in Section [6] of these business rules.
  - (d) Subject to paragraph [3.2(b)], where a Firm Supply Point is curtailed as part of Network Isolation, the Shipper will receive a Demand Side Response Payment for each relevant Supply Point as calculated using the methodology in [3.2] for the first day of curtailment only.
- 3.3. The [Emergency Curtailment Volume] for Supply Points with a commercial demand reduction contract shall be equal to the Daily Curtailment Volume as stated in Section 7 of these Business Rules. This volume will be pro-rated if curtailment is for part day.
- 3.4. Xoserve will determine each shippers aggregate [DSR Payment] for all Supply Points across all days of the GDE in accordance with the DSR Payment calculation (see para [3.2]).
- 3.5. NDM Supply Points which participate in Stage 2 Firm Load Shedding shall provide information to prove that the flow of gas to the Supply Point was reduced or curtailed to the level determined in accordance with paragraph [3.2]. This will be the submission of a 'DM' read for the day and on the following day as part of DM Elective (AMR) regime. If no proof is provided, DSR payment will not be made.
- 3.6. Where there is more up to date information on what sites have been curtailed, the following will apply:
- a. Where additional sites have been identified as having been curtailed above that identified in the initial DN DSR curtailment information provision, the additional payment, calculated using [para 3.2] above, will be recovered from neutrality and go towards topping up the [DSR Fund]. These additional funds will be passed onto the relevant shipper as an additional DSR Payment;
  - b. Where it has been identified that there is a reduction in the number of sites that have been curtailed, the DSR Account will return the equivalent money to neutrality. If a DSR Payment has been made to a shipper that therefore should not have been made, this will be recovered from the shipper.

This process will be run each month, for the first 4 months following the end of an emergency and then on an ad-hoc basis dependent on information received.

- 3.7. Interest accrued by the DSR Account will be passed through neutrality. This will only be undertaken once the DSR Account has invoiced all shippers their relevant DSR payments due to their curtailed consumers.
4. Managing an imbalance within [Initial DSR Fund];
- 4.1. [National Grid] will remain neutral to the [DSR Fund] and as such any imbalance within this account will be managed as per the following:
  - 4.2. A [**“DSR Fund Imbalance”**] is calculated as the aggregate Demand Side Response Payments payable to all Users for a day as calculated in line with

paragraph [3.1] less the sum of the residual Imbalance neutrality Charges funds payable by Shippers calculated in line with paragraph [1.3] (the [Initial DSR Fund]).

4.3. Where the [DSR Fund] Imbalance] is negative, the [**“Unit DSR Fund Imbalance”**] shall be calculated in line with the following;

(a) The Unit [DSR Fund Imbalance] is the sum of the [DSR Fund] Imbalance divided by the greater (in absolute value) of the total volume of demand side curtailment or the sum of all shipper negative imbalance positions.

4.4. Where the [DSR Fund Imbalance] is positive, the surplus will be smeared back to the industry using the neutrality mechanism.

4.5. Where the [DSR Fund] Imbalance is negative, for each Shipper, the [DSR Fund] Imbalance Charge will be calculated in line with the following:

(a) Shippers with a negative Emergency Daily Imbalance will pay [National Grid NTS] a [**DSR Fund] Imbalance Charge**, as calculated in line with paragraph [4.3(a).] above multiplied by the User’s Daily Imbalance. The [**DSR Fund] Imbalance Charge** will be in addition to the emergency imbalance charge.

## 5. Settlement Timing

5.1. Imbalance Charges and [DSR Fund Imbalance Charges] will be included within the same relevant Energy Balancing Invoice.

5.2. Subject to the [DSR Fund] having sufficient cleared funds to pay all DSR Payments; the DSR Payments shall be included in the subsequent Energy Balancing Invoice. (*This is likely to be 4<sup>th</sup> Energy Balancing Invoice following the GDE*)

5.3. If a GDE spans across two or more calendar months, the Imbalance Charges calculated in paragraph 2 shall be included within the relevant (separate) Energy Balancing Invoice and not invoiced together.

5.4. For GDEs that span across two or more calendar months, the DSR Payments to shippers will be paid in a single invoice after the GDE has ceased (see 5.2 for expected timescales).

5.5. Shippers will be obliged to pass the relevant DSR Payments on to their suppliers (as soon as reasonably practicable), which in turn will be obliged to pass these on to customers (as soon as reasonably practicable), e.g. through a rebate on the next energy bill. This process will be enforced through licence conditions.

5.6. Xoserve will administer the reconciliation outlined in para [3.7].

5.7. The DSR Payment will be passed onto the relevant Shipper [4 months after the end of the GDE (or on the 4<sup>th</sup> EBI)] subject to:

- a. The Shipper has fully settled their Energy Balancing Invoice; or
- b. The Shipper has been deemed by the EBCC to fulfil [some criteria].

5.8. The DSR Payment will not be made to a Shipper that has:

- a. Not settled its Energy Balancing Invoice in full; and
- b. Has been deemed by the EBCC to [not be fully solvent].



5.9. Any DSR Payment not passed onto shippers will held in the DSR Fund until [the customers due payment for DSR services change to a solvent supplier].

6. Demand side reduction information

6.1. This section explains the process to identify the supply points curtailed in the event of a GDE escalating.

For Firm Demand Curtailment (as part of stage 2)

6.2. In the event of a firm demand side curtailment occurring as part of a GDE the relevant Gas Transporter (NTS and DN) shall determine each site affected for each day of the GDE and identify for each site;

- (a) Meter Point Reference Number; and
- (b) For DM sites, volume of demand curtailed (it is expected that this volume will be the same as that calculated for ECQ);
- (c) For NDM sites, shipper name(s).

6.3. This information will be passed onto Xoserve no later than [5] business days after the curtailment has occurred.

For Network Isolation (as part of stage 3):

6.4. In the event of a Network Isolation occurring within an LDZ as part of a GDE the relevant Gas Transporter (DN) shall determine each NDM property affected by the Network Isolation for each day of the GDE and identify for each property;

- (a) Meter Point Reference Number; and
- (b) Postcode and house number.

Xoserve will use this information to determine the following:

- (c) Meter Point specific Supply Offtake Quantity (SOQ).

6.5. No later than [5] business days following the start of a GDE, all Gas Transporters will confirm to [Xoserve] whether or not Network Isolation occurred within one or more of its Local Distribution Zones and, if Network Isolation has occurred, provide the accompanying Network Isolation information as stated in paragraph [6.4(a) & (b)] above

6.6. If, following the submission of the information described in paragraph [6.4], the relevant Transporter is aware of an amendment to this information the relevant Transporter shall submit an amended version of this information to [Xoserve] as soon as is reasonably practical. This information shall feed into the process outlined in para [3.6].

6.7. If Xoserve is unable to process the relevant DSR Payments before submitting the 'final' Energy Balancing Invoice as described in paragraphs [5.1 and 5.2], these payments will be processed within a proceeding Energy Balancing Invoice and shall be funded by Neutrality.

6.8. Xoserve will, where a Shipper has received a Demand Side Response Payment for one or more of its smaller NDM Supply Points, provide to each Shipper the relevant supporting information to support the onward payment of the DSR Payment to the End Consumer. This supporting information will include the information described in 6.2(a) and 6.2(b).

7. Where a Supply Points with a commercial demand reduction contract is curtailed as part of Firm Load Shedding

7.1. Suppliers shall, where a commercial demand reduction contract has been agreed between the Supplier and end consumer, submit to Xoserve, 30 days prior to the start of October each year, or, as soon as is reasonably practical after the information is known but prior to the emergency occurring, the following information relating to the relevant Supply Point

- (a) The quantity of gas calculated as available for reduction or discontinuance per day “Daily Curtailment Volume” (*maximum can be no more than SOQ*);
- (b) Details of the specific site, i.e. site name, postcode, LDZ site is located and meter point reference number;
- (c) Relevant shipper / supplier name and contact information; and
- (d) Any other remarks that will need to be known e.g. limitations in time to turn down.

Xoserve will pass this information onto National Grid.

7.2. [For sites with partial commercial demand reduction contracts, the same process will be used as outlined in para [7.1]. In addition to the information outlined in para [7.1], the following additional information will be required:

- (a) The quantity of gas calculated as available for reduction or discontinuance per day “Daily Curtailment Volume” as a proportion or percentage of the overall demand; or
- (b) The quantity of gas demand remaining post curtailment.]

7.3. [Xoserve] will maintain a register of all Supply Points submitted to it by Users in accordance with paragraph 7.1 submitted to it by Users in accordance with paragraph 7.1

7.4. Where a Supply Point with a commercial demand reduction contract is curtailed as part of Firm Load Shedding, the relevant User shall receive no Demand Side Response Payment. However, the ECQ methodology will not apply for this Supply Point and as such the DM demand shall be assumed to have been reduced by the Daily Curtailment Volume.

8. Process Closeout

8.1. The process will close out in line with the current provisions in Section S, 1.8, i.e. 18 months after the invoice due date. The close out of the process will mean:

- (a) No additional curtailment information will be taken into account post close out date;
- (b) Any surplus / deficit in the DSR Fund will be recovered from / passed onto neutrality at the next settlement date;
- (c) No additional DSR Payments will be made to shippers or onto consumers;
- (d) No additional payments will be recovered from shippers [or neutrality].

## APPENDIX A

### Emergency Curtailment Volume Calculation

#### A1. DSR Volumes

A1.1 The daily Emergency Curtailment Volumes will be calculated using the following formula:

Applicable DM curtailment volume + Applicable NDM curtailment volume

A1.2 The following information is required:

- (a) DM metered volumes;
- (b) LDZ metered volumes;
- (c) [Forecast demand as at start of day].

A1.3 For DM applicable curtailment volume :

*DM demand side curtailment volume* = The expected offtake for the relevant day, using same methodology as the ECQ process – Emergency Curtailment Volume

For days of part curtailment, pro-rated volumes shall be used

A1.4 For NDM demand applicable curtailment volume:

*Applicable NDM curtailment volume* = ([Forecast demand] – End of day metered demand)

*End of day metered demand* = LDZ metered at the end of the day – DM demand

*Forecast demand* = [Start of day NDM forecast]