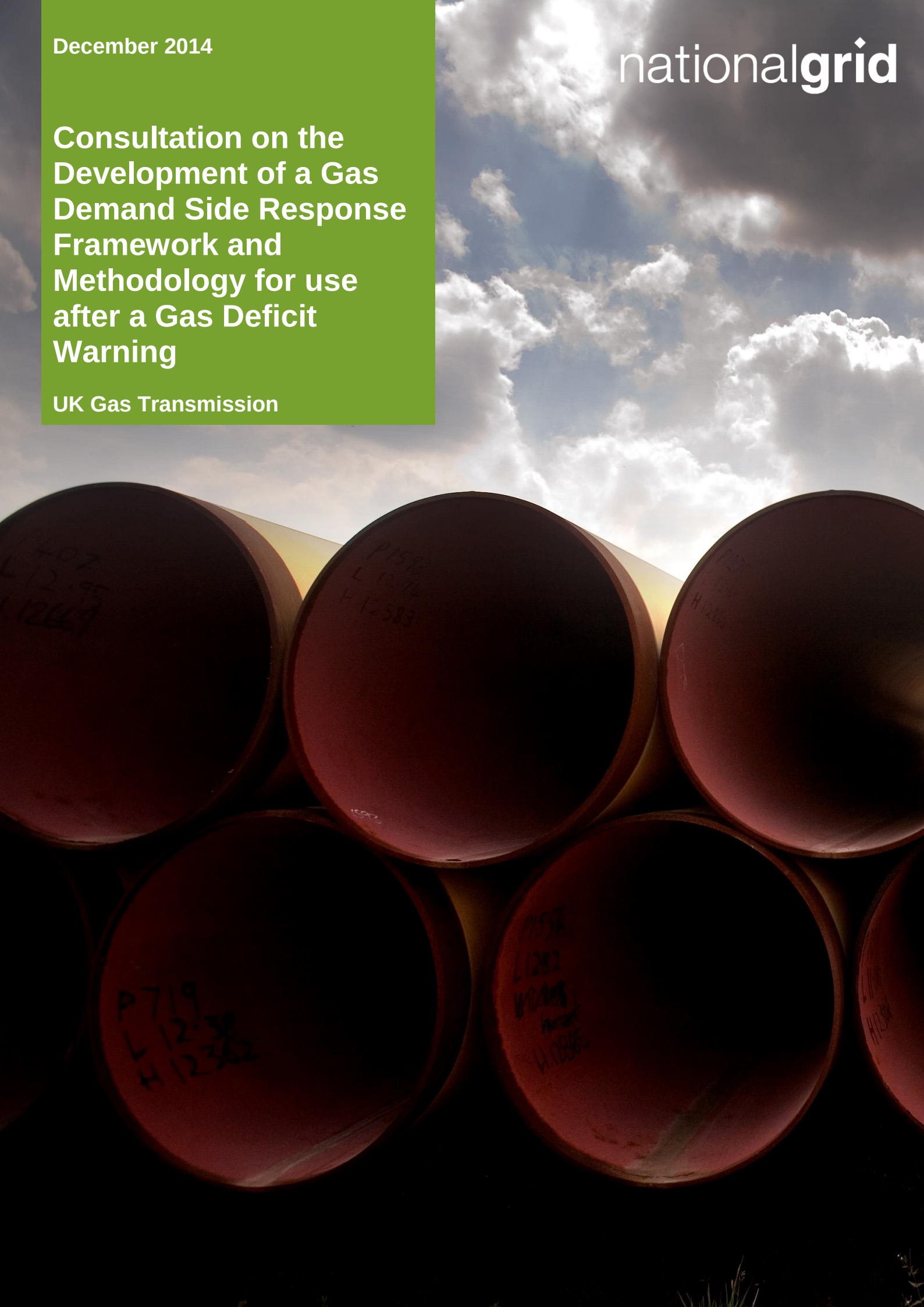
December 2014

Consultation on the Development of a Gas Demand Side Response Framework and Methodology for use after a Gas Deficit Warning

UK Gas Transmission



Executive Summary

This industry consultation seeks your views on the draft Demand Side Response (DSR) Framework and Methodology. The draft Demand Side Response Framework and Methodology sets out the details of a potential new gas market DSR product. This new DSR product would, if implemented, provide an additional 'route to market' through which Gas Consumers could offer to turn down their consumption of gas at times of gas system stress in return for a payment. The aim is that by providing DSR prior to entering a *Gas Deficit Emergency (GDE)*[1] Gas Consumers have the potential to protect their critical loads by turning down other, less critical loads. Any DSR procured through this mechanism would only be used to try and avert a GDE.

As a result of a series of working group meetings with representatives of the gas industry and other interested parties, the DSR Framework and Methodology outlines that:

- DSR Offers may only be accepted by National Grid in its *Residual Balancing* role, once a *Gas Deficit Warning (GDW)* has been declared.
- The DSR Product will utilise the existing gas industry 'On the day Commodity Market' (OCM) Locational Market.
- The DSR Product must be associated with a specific *Daily Metered (DM) Supply Point* that has a registered gas consumption *Annual Quantity (AQ*) greater than 2 million therms.
- The DSR Product will be offered to National Grid as a single *Daily* or grouped *Multi-day* product, which in turn may be offered in the form of;
    - a "7-day profiled" offer (enabling the ability to submit differing values (volume and price) for each day of the week or the same value for each day if required) within which the offer values may continuously roll over once the initial 7-day profiled offer (strip duration) has completed, which may be accepted for each individual day; or
    - A fixed offer in terms of price, volume and time period that is input for, and must be taken on, a *Multi-Day* basis.
- Where a DSR Offer is submitted and then accepted by National Grid on a *Day* where National Grid subsequently declares that the gas network has entered a *Gas Deficit Emergency* Stage 2 (**See appendix 5 for further information on the current network gas supply emergency stages)**, the *Supply Point* at which the DSR offer has been accepted will be required to maintain its reduction in offtake quantity until instructed by the *National Emergency Co-ordinator (NEC)* that its offtake restriction has been removed.

Further details of the DSR service are described in section two.

[1] Throughout this document (not including the appendices) there are references to particular sections of the Uniform Network Code (UNC) document; these are highlighted using the UNC reference code and / or italics.

This industry consultation has been raised following the publication of Ofgem's revision to National Grid's Gas Transporters Licence, which introduced a new Special Condition; Special Condition 8I – 'Development and Implementation of a Demand Side Response Methodology for use after a Gas Deficit Warning'

This consultation includes a number of questions. Each question includes a colour key which aims to provide guidance on who we believe are impacted by the subject matter of the question. The colour key is outlined below, it should be noted this is only a guide and we would welcome responses to all questions from all parties.

- Eligible Gas Consumer (Annual Quantity (AQ) greater than 2 Million Therms)
- Shipper
- Supplier
- User Group Representative
- Transporter
- Other

We would value your responses by 23rd January 2015 to the following email: **enquires@gasgovernance.co.uk**

Or alternatively by post to:

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Section 1
Background to the development of the DSR Framework and Methodology and the proposed new DSR Product

Ofgem's Security of Supply (SoS) Significant Code Review (SCR) identified that, in the build up to a *Gas Deficit Emergency (GDE)*, there may be merit in developing a mechanism to further encourage Gas Consumers, to signal their willingness to reduce their gas consumption, at times of system stress in return for a payment.

It was noted during the above review that Demand Side Response (DSR) from Gas Consumers may in some circumstances provide sufficient additional system balancing volumes to avoid entering into a *GDE*. This may therefore prevent Gas Consumers with more critical loads being unilaterally interrupted by National Grid during a *GDE* Stage 2 – *Firm Load Shedding*, whilst simultaneously mitigating the high costs and risks on the industry, associated with an escalation into a *Gas Deficit Emergency.*

The outcome of Ofgem's SoS SCR concluded that there would be merit in further development of a DSR mechanism. Ofgem considered that further development could be achieved outside of the SoS SCR process. Therefore is enabled the SCR cash-out reforms to be implemented as soon as possible, whilst allowing sufficient time for the DSR mechanism to be designed separately and in conjunction with industry parties and thus limit the probability of causing any distortions to the rest of the market.

As part of the SoS SCR Final Policy Decision Document (12 February 2014), Ofgem included a consultation on the Draft Gas Transporter Licence Obligation 'Special Condition 8I – Development and Implementation of a Demand Side Response Methodology for use after a Gas Deficit Warning'.

Following a consultation on the draft licence obligation, Ofgem published their Gas SoS SCR Conclusions in September 2014. This confirmed their decision to proceed with the development of a centralised DSR mechanism and to place the licence obligation on National Grid to develop the Methodology. The decision to modify the Gas Transporter licence to include Special Condition 8I took effect on 19th November 2014.

This consultation explains the outcome of subsequent industry developments for new arrangements relating to a DSR mechanism.

In June 2014, National Grid submitted an industry Uniform Network Code (UNC) contract change proposal, which highlighted how the DSR Framework and Methodology and supporting mechanism could be developed. This proposal was accepted by industry representatives as a suitable route to develop the arrangements. Subsequently National Grid has been working, with the help of a wide variety of industry representatives and the Joint Office of Gas Transporters, to carry out a series of workgroups outlining, and developing, the options in order to produce recommendations for a potential DSR Product, DSR Framework

and Methodology and supporting mechanism. This document describes the results of this development process.

Further information of the discussions within the workgroup meetings can be found on the Joint Office of Gas Transporters website at: http://www.gasgovernance.co.uk/dsr.

Following this consultation National Grid will:

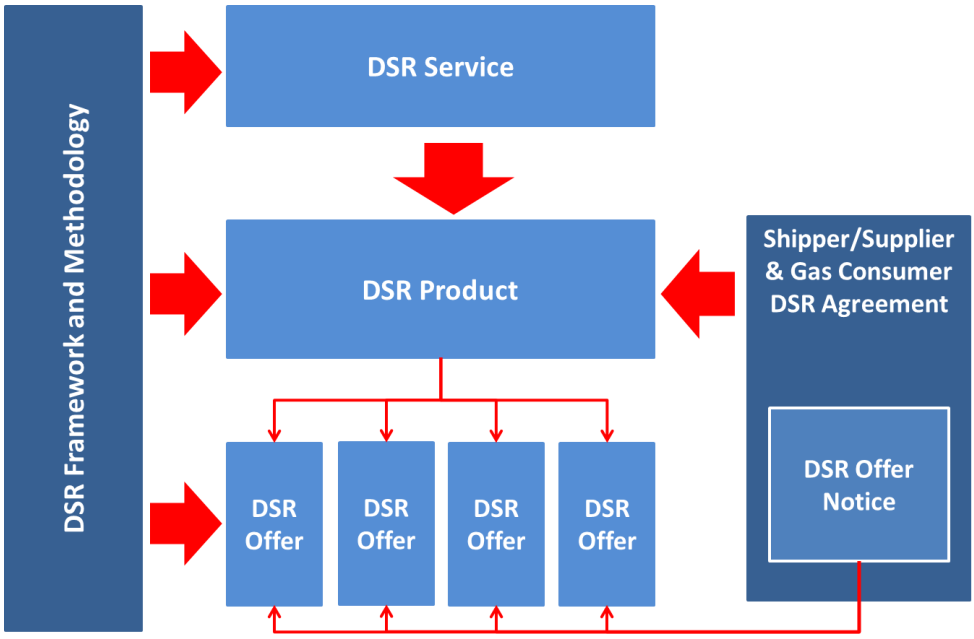
1. submit a draft DSR Framework and Methodology to Ofgem (the Authority) no later than 1st March 2015;
2. where subsequently directed by the Authority to do so, run a trial of the approved draft DSR Framework and Methodology;
3. following such a trial, submit to the Authority a report on the outcome and a final version of the DSR Framework and Methodology amended if necessary to address issues identified during the trial; and
4. where directed by the Authority to do so, implement the DSR Framework and Methodology.

This document sets out a potential future change to the commercial framework between National Grid, Shippers, Suppliers and Gas Consumers.

For further clarification on the terminology used within this document a glossary of terms is provided in Appendix one. Throughout this document (not including the appendices) there are references to particular sections of the Uniform Network Code (UNC) document (these are highlighted using the UNC reference code and / or italics). We have done this to ensure that this document remains aligned to the UNC should such areas of the main UNC document change in future and also to avoid replicating the existing UNC commercial regime methodologies within this document. The UNC document can be found on the Joint Office website at: http://www.gasgovernance.co.uk

Section 2
The DSR Framework and Methodology

2.1 DSR Overview diagram



2.2 The DSR Service

The DSR Service predominantly involves a three way party interaction between Gas Consumers, gas Shippers and National Grid (as shown in the diagram on page 9 below). This becomes a four way interaction when a gas Supplier is involved in between the Gas Consumer and the Shipper.

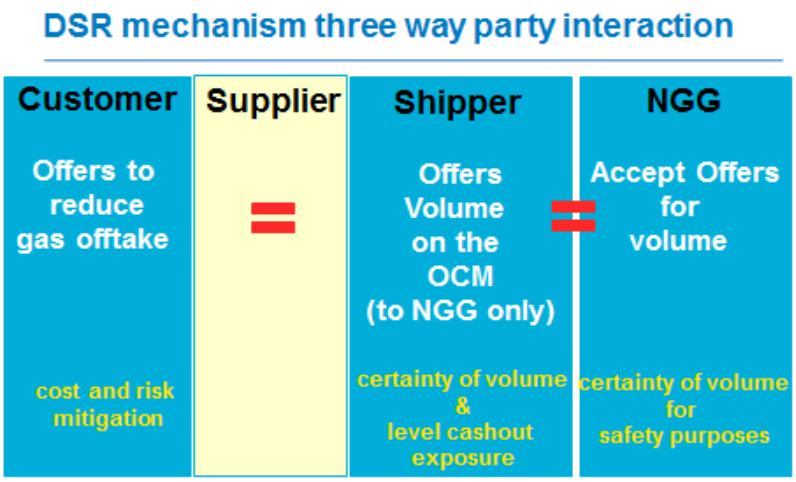
The DSR mechanism features two principles contractual arrangements:

- **Part One – For delivery of the physical action by the Gas Consumer to reduce the gas quantity offtaken, at a relevant Site, associated to the DSR Offer** – this is the Shipper/Supplier to Gas Consumer contractual arrangement. On behalf of the Gas Consumer (in some cases through instruction by the Supplier) the Shipper will agree to place an offer onto the DSR mechanism, which reflects the agreed DSR energy quantity and unit price for the Gas Consumer's reduction in offtake of gas from the gas network. In return the Gas Consumer commits to honouring and delivering on the agreed offtake reduction if called on to do so by the relevant Shipper following acceptance of the offer by National Grid. *(*Note: Requirements for this aspect of the DSR mechanism shall be defined by the Shipper, Supplier or Gas Consumer through their Contractual (gas supply contract) arrangements).

- **Part Two - For the procurement of the gas which would otherwise have been offtaken by the Gas Consumer which is now associated with the DSR Offer** –

this is the Shipper to National Grid contractual arrangement. Under prescribed parameters and criteria, the Shipper will offer to sell "title" to gas (associated to the DSR Offer) to National Grid in its role as the Residual Balancer. (Note: The requirements and provisions for this aspect of the DSR mechanism will be set out within the DSR Framework and Methodology and the Uniform Network Code (UNC)).

Q1: Do you consider that the DSR Framework and Methodology should set out provisions for the gas procurement arrangements between National Grid and Shippers, with only high level references to the Demand Side Response contractual arrangements between Shippers/Suppliers and Gas Consumers?



2.3 The OCM Locational Market

The DSR Service will utilise the existing OCM Locational Market. This will be revised from one in which all Shipper OCM market participants may both post and accept locational trades to a market where Shippers may only post trades and only National Grid is able to accept trades. Further information on the OCM Locational Market can be found in section 3.2 'Background to the use of the OCM Locational Market'.

Q2: Do you consider that the current On the Day Commodity Market (OCM) provides an appropriate platform to facilitate the provision of a DSR Product?

2.4 The DSR Product

- The DSR Product must be associated with a specific *Daily Metered Supply Point (DMC)* that has a registered gas consumption *Annual Quantity (AQ)* greater than 2 million therms.
- The product will be offered to National Grid as: a *Daily* product and, where appropriate, it will be accepted for each gas *Day* exclusively in accordance with *UNC*

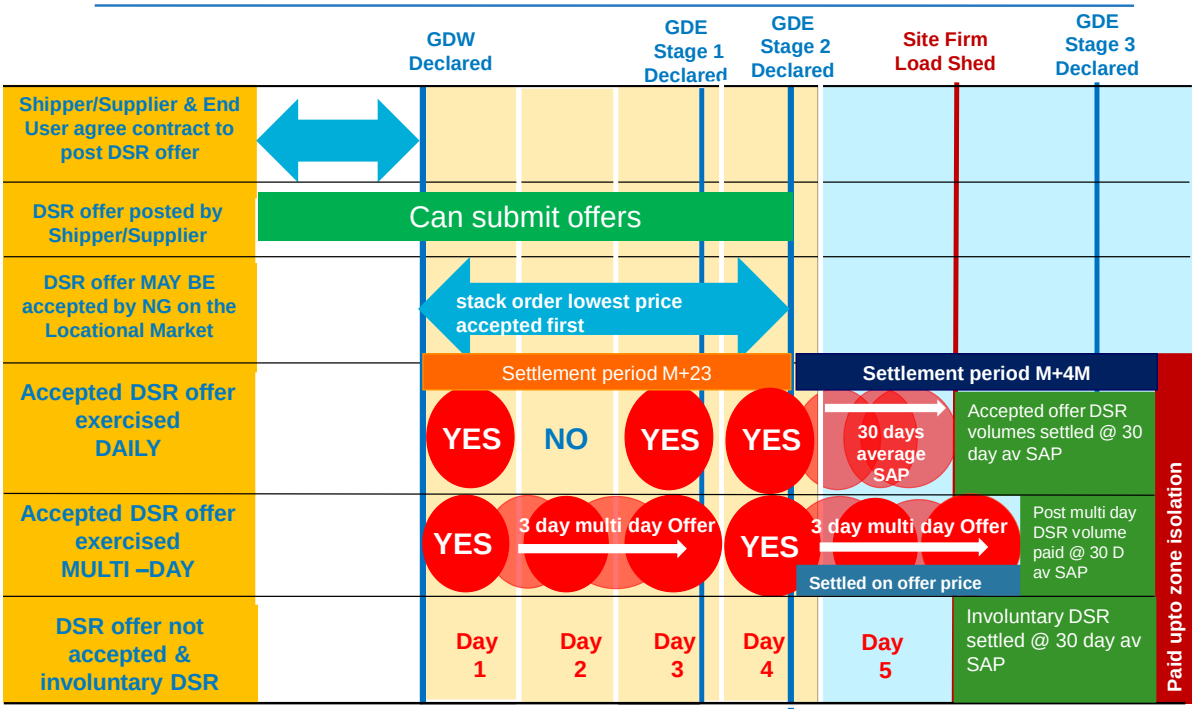
Section D2.2.1 (d) or as a *Multi-day* product undertaken in accordance with *UNC Section D4- Multi-Day Balancing Actions*;

- Features of the *Daily* DSR Offer product.
  - The *Daily* product may be offered in the form of:
    - a "7-day profiled" offer (enabling the ability to submit differing values (volume and price) for each day of the week or the same value for each day if required) within which the offer values may continuously roll over once the initial 7-day profiled offer (strip duration) has completed; or
  - A fixed offer in terms of price, volume and time period that is input for, and must be taken on, a *Multi-Day* basis.
- The Product may only be "offered" on the OCM Locational Market by a *Registered User* (Shipper) at the relevant *DMC*;
- Each DSR Offer must be greater than 100,000 kWhs/day in accordance with *UNC Section D4.3.*
- The DSR Product may be offered in multiple, and separate, tranches, which may be priced individually, according to the *Value of Lost Load (VoLL)* associated to each separate tranche;
- Each tranche will be submitted as a single DSR Offer and so must meet all of the eligibility criteria for a DSR Offer (e.g. minimum size of 100,000 kWhs/day);
- There may be more than one DSR Offer at a specific DMC;
- DSR Offers will be accepted by National Grid in its role as Residual Balancer on a daily basis, for the period between the *GDW* being declared and the former of the *GDW* being revoked or the end of the *Gas Deficit Emergency (GDE) Stage1*. This time period is the DSR Period.
- *Multi-day Offers,* if accepted, will be for the duration of the offer.
- Where a DSR Offer is submitted, and is subsequently accepted by National Grid, on the *Day* that the gas system enters into a *Gas Deficit Emergency Stage 2*, the *Supply Point* at which the DSR Offer has been accepted will be required to maintain the associated reduction in its offtake quantity until instructed by the *National Emergency Co-ordinator (NEC)* that its offtake reduction is no longer necessary.

Q3: Does the proposed DSR Product meet your expectations in respect of providing sufficient market offer flexibility to match your operational requirements when determining and offering DSR? If not, which aspect(s) would you change, add or remove?

The diagram below shows the proposed design of the DSR mechanism to provide further clarification (please note that a larger version of the diagram can be viewed in Appendix 9).

DSR Mechanism Process Flow: Daily or Multi-day Offers

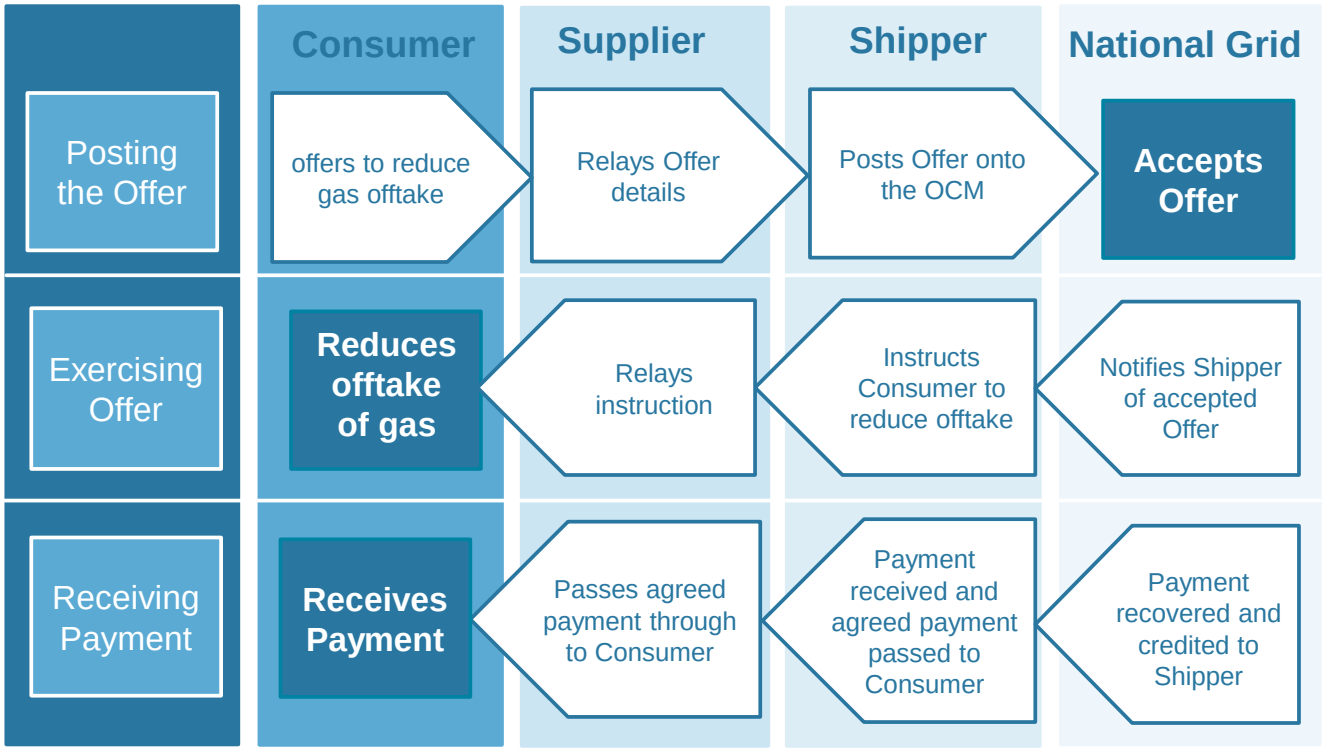


2.5 The DSR Offer

- All DSR Offers will be posted on the OCM platform but these offers will not become visible on the platform until a *GDW* has been declared.
- DSR Offers may be placed on, updated or withdrawn from, the OCM platform at any time up to the declaration of a *GDE Stage 2* for the relevant gas *Day*.
- DSR Offers may only be accepted by National Grid once a *Gas Deficit Warning (GDW)* has been declared for the relevant gas *Day*.
- DSR Offers may only be accepted by National Grid in its role as *Residual Balancer*.
- Each DSR Offer must be greater than 100,000 kWhs/day in accordance with *UNC Section D4.3.*
- Where a DSR Offer is accepted it will be regarded as a *Locational Market Balancing Action* that will be undertaken in accordance *with UNC Section D2.2.1 (d).*
- All accepted DSR Offers will be included in the calculation of *System Clearing prices* for the relevant gas *Day*.

Q4: Do the criteria and arrangements set out within the Framework and Methodology for the posting and processing of DSR Offers meet your requirements? If not, could you describe the new issues you would like to be considered?

2.6 DSR End to End Flow Diagram



Q5: In respect of the development of the DSR Framework and Methodology, do you consider that you have been given sufficient opportunity to provide your input into the development of the DSR Framework and Methodology? Have we listened and taken account of your views?

Section 3
Wider Market Considerations

3.1 Interactions with European Network Codes

During the development of the new DSR mechanism and framework National Grid has been mindful of the Gas Balancing of Transmission Networks Code 312/2014. We note that article 2.4 of the Balancing Code allows specific measures to be utilised by the Transmission System Operator in emergency situations and states that "This Regulation shall not apply in emergency situations where the Transmission System Operator shall implement specific measures defined under the applicable national rules and on the basis of Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply, as appropriate" .

Regulation 994/2010 states:

- "Measures necessary to ensure the fulfilment of the supply standard may include additional storage capacities and volumes, linepack, supply contracts, interruptible contracts or any other measures that have a similar effect, as well as the necessary technical measures to ensure the safety of gas supply".
- "Article 3 - The measures to ensure the security of supply contained in the Preventive Action Plans and in the Emergency Plans shall be clearly defined, transparent, proportionate, non-discriminatory and verifiable, shall not unduly distort competition and the effective functioning of the internal market in gas and shall not endanger the security of gas supply of other Member States or of the Union as a whole." As outlined in Section 5, which details the DSR service against the requirements set out within National Grid's Licence condition, we believe DSR does not distort competition as it provides no additional functionality than that which is already offered to shippers and consumers on the OCM Title Market.
- Within this Regulation, Annex II there is also a "list of market-based security of gas supply measures" which includes an equivalent to DSR "Demand Side Measure - voluntary *Firm Load Shedding*".

In addition we believe that the proposed DSR Product is a preventative market measure which aims to safeguard against a severe gas security of supply issue or an emergency. Therefore, we believe that the DSR Product described within this consultation would be exempt in accordance with article 2.4 of the EU Balancing code.

3.2 Background to the use of the OCM Locational Market

The OCM Market refers to the 'On the day Commodity Market' operated by ICE Endex for trading natural gas in Great Britain. The OCM consists of three Markets;

- Title,

- Physical, and
- Locational

The OCM is central to the operation of the commercial regime within the GB gas market. The Title Market is the most frequently used and "liquid" market and is where the vast majority of OCM trading takes place. In contrast the Locational Market is used very infrequently. Historically, evidence shows that National Grid has been the only party to take a bid or offer in this market. National Grid uses the Locational Market for constraint management purposes as well as National requirements; however this market hasn't been used for national gas balancing purposes since 2006.

As a result of the current functionality available on the OCM Locational Market and the historic underutilisation of this market, discussions at the DSR workgroups have indicated that the Locational Market would be suitable to facilitate the DSR mechanism. Discussions with ICE Endex, the OCM Operator, have also indicated that extending the scope of the existing Locational Market to include the new DSR Product would be more efficient and economic than building a new separate DSR platform, particularly when considering the low probability of a *GDE* occurring.

Section 4
Assessment of the DSR Service against the requirements set out in National Grid's Licence

This document has been developed as a result of Ofgem's revision to National Grid Transmission's Gas Transporter Licence. The potential changes to the UNC outlined in this document have been gauged against the "relevant objectives" set out in the licence and also the new DSR licence condition principles, further details on how, in National Grid's opinion, these changes further facilitate these areas are outlined below:

Relevant Objective a) Efficient and economic operation of the pipe-line system and b) Coordinated, efficient and economic operation of the combined pipe-line system

We consider that this draft DSR Framework and Methodology, if implemented, would facilitate further Demand Side Response from Gas Consumers who have indicated that they may not otherwise respond to a *GDW*, where the system is in a significant Supply / Demand deficit. Provision by Gas Consumers of this type of DSR may provide additional volumes that in some instances would be sufficient to prevent escalation of a severe national gas supply / demand imbalance into a full Gas Deficit Emergency. We believe that such additional response may therefore demonstrate an improvement to the efficient and economic operation of the pipe-line system during specified times where the system balance position is stressed. Also encouraging additional voluntary DSR facilitates economic disconnection based on individual Gas Consumer willingness and cost of their reduction rather than under current arrangements, where disconnection is left until post Stage 2 and is based on the Gas Consumer's size of load rather than the value of supply to the Gas Consumer. Additionally, we believe that these proposed changes may provide an improvement in the coordinated efficient and economic operation of the combined pipe-line system as they seek to enable DSR from the entire on-shore gas network, rather than just those directly connected to the National Transmission System.

Q6: Do you consider that the Draft DSR Framework and Methodology, the proposed DSR Mechanism and the suggested Shipper/Supplier to Gas Consumer service agreement structure delivers an efficient and economic approach, through which Gas Consumers may provide DSR, that may otherwise not be available during periods of acute gas market stress?

Relevant Objective c) Efficient discharge of the licensee's obligations

This draft DSR Framework and Methodology consultation has been raised as a result of Ofgem's revision to National Grid Transmission's Gas Transporters Licence which introduces a new Special Condition; Special Condition 8I. The Licence condition details a number of

criteria which National Grid must consider when developing the DSR Framework and Methodology, including; developing the DSR Framework and Methodology in consultation with interested parties and also using reasonable endeavours to ensure that the DSR Framework and Methodology is developed in accordance with the 'Demand Side Response Methodology Principles', as outlined below;

GT Licence Condition 8I.2 The Licensee must develop the Demand Side Response Methodology in consultation with interested parties.

To achieve the successful development of the DSR Framework and Methodology it is essential that National Grid understand the needs and requirements of all stakeholders that may have an interest participating in, or are potentially affected by, the DSR mechanism. This covers the range of interested parties already mentioned: Gas Consumers, Shippers, Suppliers and National Grid.

Given the importance of stakeholder input in developing the DSR Framework and Methodology we have strived to ensure we communicate with, listen to and involve as many stakeholders as possible. In order to do this we have held a number of;

- bi-lateral meetings,
- industry associations workshops,
- utilised the Joint Office workgroup structure to facilitate development discussions,
- surveyed stakeholders on the proposed product design ,and
- published summaries of meeting outcomes to stakeholders who were unable attend any of the above.

Overall we have held in excess of 25 meetings with interested parties, which has enabled us to engage directly with approximately 60 individual Gas Consumers and also a number of industry associations, who together represent what we believe to be the majority of the larger Gas Consumers and therefore those likely to be affected by DSR.

In June, following some initial engagement with stakeholders we raised a UNC Modification Proposal (0504) to provide the platform for a series of Joint Office administered industry workgroups to be held. To date we have held six of the scheduled seven workgroups and it has been within this forum where we have worked with the help of industry representatives to develop and agree the structure of the product and processes outlined in this consultation. During these workgroups we have considered stakeholder views gathered during earlier bi-lateral meetings, alongside views expressed within the workgroup in order to develop the DSR Framework and Methodology. The development workgroups have had representation

from Shippers, Transporters, industry associations, Gas Consumer groups, Ofgem and individual Gas Consumers.

As a result of the stakeholder engagement which we have undertaken to date, we believe that the DSR Framework and Methodology now represents a balanced consensus of stakeholder's views and opinions.

8I.3 The Licensee must use reasonable endeavours to ensure that it develops the Demand Side Response Methodology in accordance with the principles set out in paragraph 8I.4 (the "Demand Side Response Methodology Principles").

8I.4 The Demand Side Response Methodology Principles are that the Demand Side Methodology must;

(a) Ensure that any party making a Demand Side Response Offer is a party to the Uniform Network Code;

We believe that the DSR Framework and Methodology meets this licence principle because all DSR Offers will be posted on to the OCM platform. Only Gas Act licenced gas Shippers have the ability to post Locational Market offers on the OCM, and all licensed Shippers must accede to the UNC prior to arranging to ship gas through the GB gas network. Therefore, any party submitting a DSR Offer has to be a signatory to the Uniform Network Code (UNC).

Q7: Do you consider that the proposed DSR Framework and Methodology appropriately meets the requirements set out in the gas Transporters Licence principles, i.e. that only signatories to the Uniform Network Code may post a DSR Offer? If not, please detail how you feel this SC8I.4 (a) licence obligation may be better achieved?

(b) Set out the criteria for determining that particular "DMC" Supply Point Components are "DMC" Supply Point Components in respect of which a party may not make Demand Side Response Offers;

An eligible *Supply Point* is a '*DMC*' *Supply Point* as defined in *Section A4.5* of the Uniform Network Code. That is a *Supply Point* whose *Annual Quantity* is greater than 2 million therms. An eligible site must be able to offer a minimum DSR Offer energy quantity of not less than 100,000 kWhs/day in any one DSR Offer. The workgroup agreed that the OCM was the most appropriate platform for the DSR mechanism and therefore that the 100,000 kWh/day minimum DSR Offer notice was also appropriate given that this is the minimum trade size allowable on this platform. This also aligns with National Grid's System Management Principles Statement which states that 'the

smallest bid / offer volume of gas capable of being posted by market participants is 100,000 kWhs/day'.

Q8: Do you consider that the proposed DSR Framework and Methodology satisfies the eligibility criteria set out in the Licence condition SC8I.4 (b)? If not, do you have any views on how to better satisfy this principle?

(c) Allow the Licensee to accept Demand Side Response Offers only where a Gas Deficit Warning is in place or within Stage 1 of a Gas Deficit Emergency;

National Grid will be the sole party able to accept DSR Offers within the DSR mechanism. DSR Offers may be accepted by National Grid in its role as *Residual Balancer* at any time following the declaration of a *GDW* for the relevant gas *Day* and before the revocation of the *GDW* or the end of *GDE Stage 1* (the DSR Period).

Q9: Are you satisfied that the introduction of the DSR Framework and Methodology through the proposed revisions to the Locational Market of the OCM Platform is the most appropriate approach to meet the principles set out in SC8I.4 (c)? If not, would you like to share any other options which in your opinion would better satisfy this principle?

(d) Demonstrate compatibility with existing market arrangements by setting out the manner in which any Demand Side Response Offers accepted by the Licensee are to be treated as Eligible Balancing Actions and included in the System Clearing Contract, System Marginal Buy Price and System Marginal Sell Price;

The DSR mechanism will utilise the existing OCM platform. The OCM is a familiar platform for Shippers and National Grid and is currently used by both for trading purposes. By utilising an existing, well established, highly regarded and understood platform the DSR mechanism will use functionality which is familiar to Shippers and this familiarity could increase participation in this product. The existing OCM Locational Market is proposed to be revised from a market in which all Shipper OCM market participants may both post and accept locational trades and National Grid can only accept such trades, to a market where Shippers may only post trades and National Grid is the sole party able to accept trades.

All DSR Offers will be identified by a DSR Flag and will not become visible on the market platform prior to the declaration of a GDW, at which point they become visible to all participants and available for acceptance by National Grid. All accepted DSR Offers will be treated as *Market Balancing Actions (MBA)* and all accepted DSR Offer prices and volumes will feed into *System Clearing processes* for the relevant gas *Day* in accordance with existing arrangements for other *Market Balancing Actions*.

Q10: Do you consider that this proposed DSR Framework and Methodology satisfies the principle set out in SC8I.4 (d) which requires all DSR Offers to be treated as 'Eligible Balancing Actions' and included in System Clearing Contracts and the calculation of Cash-out prices? If not, could you provide details of any compatibility issues that you feel would conflict with this principle?

e) Promote, and further facilitate, parties making Demand Side Response Offers to the Licensee through open and transparent market-based arrangements;

The DSR mechanism seeks to provide an additional 'route to market' for Gas Consumers (via their contracted Shipper/Supplier) to signal their willingness to make available DSR energy quantity, which may not have otherwise been offered through existing commercial market arrangements. DSR Offers may only be accepted by National Grid where a *GDW* has been declared and is in effect for the relevant gas *Day*. This requirement was driven from industry discussions which highlighted that although some Gas Consumers were willing to offer DSR, this was only where such offers were absolutely necessary i.e. at times of significant system stress rather than as a general commercial balancing tool. Therefore Gas Consumers requested that National Grid will only use this DSR Product in these circumstances.

To encourage participation in the DSR mechanism, and reduce costs to Gas Consumers, this is a simple product that, where possible, utilises existing market arrangements and trading platforms e.g. adapting / supplementing the existing UNC defined and established products available on the existing OCM platform through the Locational Market.

This simplified approach aims to effectively and efficiently balance the conflicting priorities of:

- Facilitating the provision of additional DSR;
- Minimise the costs associated with the implementation of the DSR mechanism;
- Minimise any adverse impacts on the development of competition and innovation from industry participants who may want to provide a commercial product to Gas Consumers outside of the centralised DSR mechanism;
- Ensure that a high-level of industry familiarity of the functionality used to offer the DSR Product is maintained during the period of normal system operation.

Q11: Do you consider that the proposed DSR Framework and Methodology provides you or other Gas Consumers with an additional 'route to market'?

Q12: Does the proposed DSR Framework and Methodology provide a 'route to market' for a DSR product that you would be interested in providing?

(f) Not unduly preclude the emergence of commercial interruption arrangements;

As outlined within Ofgem's Final Policy Decision – SoS SCR' document the intention of the DSR mechanism is to familiarise Gas Consumers with calculating their *Value of Lost Load (VoLL)* and arranging with their Shipper / Supplier to offer into a DSR mechanism. It has been recognised that the DSR mechanism should not unduly deter the development of a more competitive DSR market and, where such a competitive market is shown to be established then the centrally provided DSR mechanism should be withdrawn, as a competitive market for DSR is likely to be more efficient than a centralised mechanism.

To facilitate the evolution to a competitive DSR market, the DSR development workgroup recognised that the centralised DSR mechanism needs to be a simple "vanilla" product. This would then allow 'space' for further development and innovation of more complex / tailored commercial services by industry participants, who may want to provide a more bespoke commercial product to their contracted Gas Consumers. As a result, the DSR mechanism has been designed to utilise existing market arrangements and platforms, including;

- Utilising the existing OCM platform and offer a *Daily* and *Multi-day* product to mirror the options already available on the OCM.
- The DSR mechanism will offer an 'exercise only' product with no regular "option fee" payment being made for availability.

We believe that this simple DSR mechanism balances the "market maker" benefits of introducing a centralised DSR service against the risk of stifling the emergence of fully competitive market wide commercial DSR arrangements.

Q13: Would you agree that the proposed DSR Framework and Methodology does not unduly preclude the emergence of further commercial interruption arrangements? If not, could you provide information regarding which element you feel could prevent the emergence of commercial interruption, and any view on how this could be mitigated?

(g) Minimise distortions and unintended consequences on existing market arrangements and the principle of parties balancing their own positions in the wholesale gas market;

Within Ofgem's 'Final Policy Decision – SoS SCR' document, Ofgem identified a number of potential unintended consequences, which could arise as a result of implementing a centralised DSR mechanism. One area of interest was the potential unintended consequences that the DSR mechanism could have on the day to day operation of the current National Balancing Point (NBP) Title gas market, in particular

the risk of removing existing liquidity from the OCM Title market. In order to minimise this risk the DSR development workgroup looked in great detail at the issues that surround eligibility of participation in the DSR mechanism and in particular at the inclusion of gas-fired power generation. Within their 'Final Policy Decision – SoS SCR' document Ofgem were "concerned" about the inclusion of gas-fired power generators within the DSR mechanism, stating that the quantitative analysis undertaken by Pöyry showed that their inclusion would not be cost effective due to the low likelihood of the mechanism being utilised.

In the interest of creating a DSR mechanism which 'promotes and further facilitates parties making DSR Offers' and also in "consultation with industry parties", the DSR Framework and Methodology does not require UNC changes that directly propose the exclusion of gas-fired power generation from this mechanism.

National Grid recognises that the participation of gas-fired power generation in the DSR mechanism could have a number of adverse commercial and competition effects on the wider gas market. For this reason, we have strived to ensure the proposed DSR mechanism is simplistic, and wherever possible utilises existing market arrangements thereby creating no new incentive for gas-fired power generation to participate in the DSR mechanism, as outlined below:

- DSR Product utilises the existing OCM Locational market which is already available to all DMCs including gas fired power generation;
- DSR Product is offered to National Grid as a *Daily* Product and accepted for each gas *Day* exclusively in accordance with *UNC Section D2.2.1 (d)* or as a *Multi-day* product undertaken in accordance with *UNC Section D4- Multi-Day Balancing Actions* which again is already available to all DMCs;
- No "up-front" payments will be made as part of the DSR mechanism; DSR Payments are only made if a DSR Offer is accepted. There are no payments for availability (no option fees) which again is consistent with existing market arrangements;
- Active Title market participants such as market participants with gas-fired generation assets, would likely want to remain on the more active OCM Title 'many to many' market rather than participate in the less liquid DSR Market where they are at greater risk of not having their offer accepted;
- The OCM already has the functionality to allow *Related Market Offers* (Linked bids) which would mean that any market participant, including those with gas-fired power generation, assets could participate in both markets at the same time, maintaining liquidity within the OCM Title market.

In consequence, as outlined within the DSR Framework and Methodology, it is our opinion that, the proposed DSR mechanism does meet the obligation to minimise distortions and unintended consequences on existing market arrangements and the principle of parties balancing their own positions in the wholesale gas market.

Q14: Do you foresee any distortions or unintended consequences that the introduction of the DSR Framework and Methodology may have on the existing gas market or gas supply contract arrangements and the principle of parties balancing their own positions in the wholesale gas market?

(h) Ensure that Demand Side Response is procured in a manner consistent with the Licensee's duties under the Act and, in particular, the Licensee's obligation to operate the pipe-line system to which this licence relates in an efficient, economic and co-ordinated manner.

In July 2012 Red Point Energy were commissioned to conduct economic modelling to assess Ofgem's proposed final decision on the gas SoS SCR. This report[2] outlined that under current arrangements the likelihood of a *GDE* affecting *Firm-Daily Metered* customers was a 1 in every 55 years occurrence, proving that even under current arrangements a *GDE* is a very rare event. Whilst recognising this, Ofgem indicated that the gas market could further benefit from the establishment of DSR mechanism, where large *Gas Consumers* could offer to voluntarily reduce their demand ahead of the system entering a GDE. However, for the DSR mechanism to be effective, Ofgem noted that it should also be cost effective. Based on additional economic modelling by Pöyry Ofgem advised against the inclusion of annual option fee payments to Gas Consumers in return for DSR commitments.

The inclusion of option fees within the DSR mechanism was discussed at a number of the DSR Workgroups, where a number of stakeholder groups expressed views that without option fees they would either not participate or would only be able to offer limited DSR energy quantities. These stakeholders highlighted that the inclusion of option fees may encourage additional amounts of DSR to be made available and could improve the efficiency of the operation of the pipeline system, by providing further system balancing options to National Grid. When looking at the viability of options fees, National Grid considered the relative efficiency of inclusion of such fees (as outlined in Pöyry's analysis of a DSR mechanism) against the likelihood of GDE occurrence as previously outlined in Red Point's analysis. Based on this assessment and the likelihood of this rare event, National Grid has concluded that the inclusion of options fees cannot be justified against the Relevant Objective of an 'economic and

[2] https://www.ofgem.gov.uk/ofgem-publications/40922/120731gasscrrp.pdf

efficient pipeline system' and as a result they have not been included within the design of the DSR mechanism.

Throughout the development of the DSR mechanism, both National Grid and the industry have expressed views to keep the design simple in order to attract participation, minimise costs and maximise the space for the emergence of a fully competitive market. This is particularly true when considering the platform on which DSR Offers will be submitted and accepted. For this reason it is proposed that the DSR mechanism will utilise the existing Locational market within the OCM Platform. The intention is for this existing market to be revised from one in which all Shipper OCM market participants may both post and accept locational trades and National Grid can only accept such trades to a market where Shippers may only post trades and National Grid becomes the sole party able to accept trades.

Q15: Do you believe that the proposed DSR Framework and Methodology facilitates the procurement of DSR in a manner consistent with the licensee's obligation to operate the pipeline system in an efficient and economic manner?

e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards

As outlined by principle (d) within Special Condition 8I, accepted DSR Offer prices and quantities will be required to feed into the *System Clearing* (Cash-out) processes for the *Day*. We believe that the DSR mechanism facilitates the discovery of appropriate Shipper incentives via price signals to the market for relevant Shippers and Suppliers to secure that the domestic customer supply security standards are met. This will be achieved as the cash-out prices will reflect the value that the Gas Consumer places on their provision of Demand Side Response.

Q16: Do you consider that the proposed DSR Framework and Methodology would provide an improvement to the incentives on the relevant suppliers to secure the domestic customer supply security standard?

Section 5
When might these changes come into effect?

At present we are not proposing a change to the UNC, Special Condition 8I does not specify an implementation date for the DSR Framework and Methodology, although Ofgem have indicated that a winter 2016-17 delivery would be preferable.

We are working towards the timescales specified within the licence obligation for the development of the DSR Framework and Methodology, as outlined below:

- The Licence Obligation states that the DSR Framework and Methodology must be developed in consultation with the Industry; a report submitted for industry wide consultation, and the report and consultation responses sent to the Authority for approval no later than the **1 March 2015**; and

- No later than **90-days** following the receipt of the proposed DSR Framework and Methodology report, the Authority will make a decision on whether to approve the DSR Framework and Methodology. Where the authority approves the Proposed DSR Framework and Methodology Report, it may direct National Grid to run a paper based Trial;

- Upon Completion of the Trial, National Grid will be required to prepare and issue a report to the Authority within **28-days** of the final day of the Trial;

- **28 days** after receiving the Trial report, where the Authority, has not stated otherwise, National Grid is required to develop the appropriate modifications to the Uniform Network Code and other processes and systems to enable it to implement the DSR Framework and Methodology.

Section 6
What will this cost?

It is not yet fully clear what the development, implementation and operational cost, associated with this proposal, will be. However, we anticipate that there may be potential costs associated with:

- National Grid's running, administering and reporting on the Trial,
- The amendments needed to the OCM Locational market, in terms of systems and market rules;
- Shipper / Supplier and Gas Consumer administration costs associated with establishing contracts and inputting / monitoring DSR offers; and

Having detailed the above, we can say that, throughout the development of this service, we and industry representatives have been mindful of not introducing unnecessary or inefficient costs into the current regime. An example of this is the proposal to adapt an existing part of the OCM platform to enable it to fulfil the remit of this service and therefore avoid the costs of providing an additional market.

Section 7
Frequently asked questions?

1. Which Gas Consumers can participate?

In order to participate in DSR a Gas Consumer has to be *Daily Metered Supply Point* which has an annual quantity greater than 2 million therms and is able to offer a minimum DSR energy quantity of 100,000 kWhs/day in a DSR Offer Notice.

2. Over what duration can a DSR Offer be made?

A DSR Offer may be made either on an individual daily basis with the option of a 7 day energy volume profile or on a multiday basis with identical energy volumes on each day within the multiday offer. Additionally a Gas Consumer can decide whether a DSR Offer can be replicated in the following period e.g. if a Gas Consumer has 100,000 kWh's available on every Monday the offer can be set to post that energy quantity offer on each and every Monday.

3. How long does a DSR Offer last after it is exercised?

A DSR Offer can be submitted on a daily basis (daily product) or on a multi-day basis (multi-day product). Once the DSR Offer has been exercised it was last for the duration for which the contract is struck. e.g. for a daily product this will last for one day, for a multiday product this could last up to 7 days, but this is dependent upon the original DSR Offer duration thus the contract agreed.

4. How will the DSR Product accommodate consumers with variable load profiles?

The DSR Product has been designed to provide Gas Consumers with the flexibility to submit offers to the DSR mechanism which aligns with their load profile; this is accommodated by allowing a series of different offer structures as outlined below;

- a "7-day profiled" offer (enabling the ability to submit differing values (volume and price) for each day of the week or the same value for each day if required) within which the offer values may continuously roll over once the initial 7-day profiled offer has completed; or
- an offer that is input for a *Multi-Day* basis; (enabling Gas Consumers the ability to offer DSR energy quantity for a set duration of time at a pre-determined price up to a maximum of 7 days e.g. A Gas Consumer offers to turn down by their DSR energy quantity for 4 days in a row).

5. Where will NG and Shippers make these DSR trades?

The DSR Service will utilise the existing OCM Locational Market (further information on the OCM Locational market can be found in section 3.2.).

6. How does the DSR product accommodate partial interruption?

The DSR mechanism allows Gas Consumers to turn down a proportion of their sites energy quantity and does not require sites to cease offtake of gas. This turn down can be offered in multiple tranches of energy quantity, which may be priced individually, according to the Value of Lost Load (VoLL) associated to each separate tranche. Each tranche will be submitted as a single DSR Offer and must meet all of the eligibility criteria for a DSR Offer (e.g. minimum size of 100,000kwh/day).Therefore it is possible for there to be more than one DSR Offer at a specific *Daily Metered Supply Point*.

7. When will NG potentially use this DSR product?

National Grid will only consider accepting DSR Offers in the period following the declaration of a *Gas Deficit Warning (GDW)* and the former of the *(GDW)* being revoked or the end of the *Gas Deficit Emergency (GDE) Stage 1* (the DSR Period).

8. How will payments be made for DSR?

DSR Payments will be in accordance with the agreed DSR Offer price for the contract duration. These will be paid within the same timescales *as Market Balancing Actions* which are outlined in the UNC, unless the contract runs beyond the end of *Stage 1 GDE*, in which case the payment arrangements introduced under the SCR will apply (see UNC section Q6.4.7[3]).

9. Will payments still be paid if we go into a GDE?

Yes, once a DSR Offer is exercised a DSR Payment will be made for the duration of the DSR Offer; this is irrespective of any instruction from National Grid that the GDW for the relevant gas *Day* has been revoked. In the event that the accepted Multi-day Offer contract durations runs beyond *Firm Load Shedding*, the payment will continue to be paid in accordance with the agreed DSR Offer price until the contract duration finishes.

10. How quickly can a Gas Consumer resume normal consumption?

Within the DSR Period Gas Consumers may resume consumption on the day following the end of their DSR Offer contract. Where a DSR Offer is submitted and is subsequently accepted by National Grid on the *Day* where the situation progresses into a *Gas Deficit Emergency Stage 2*, the *Supply Point* at which the DSR Offer has been accepted will be required to maintain the associated reduction in its offtake quantity until instructed by the National Emergency Co-ordinator (NEC) that its offtake reduction is no longer necessary.

[3] UNC text to be implemented September 2015 In accordance with the Authority's direction on Gas SCR http://www.gasgovernance.co.uk/sites/default/files/gasscrs36cdirectiondraft.pdf

11. When will DSR Offers be visible to the market?

For all market participants, including National Grid, DSR Offers will only become visible on the 'On the day Commodity Market' (OCM) Locational Market once a *Gas Deficit Warning* has been declared for the relevant gas *Day*.

12. How will DSR affect System Clearing Prices (cash-out)?

All accepted DSR Offers will be included in the calculation of *System Clearing prices* (Cash-out) for the relevant gas *Day* and will be treated as *Market Balancing Actions*.

Section 8
Consolidated Consultation Questions

In order to ensure that attention is drawn to Consultation Questions that are most relevant to you, we have colour coded the questions that may have greater relevance to you and your organisation.

- Eligible Gas Consumer (Annual Quantity (AQ) greater than 2 Million Therms)
- Shipper
- Supplier
- User Group Representative
- Transporter
- Other

Q1: Do you consider that the DSR Framework and Methodology should set out provisions for the gas procurement arrangements between National Grid and Shippers, with only high level references to the Demand Side Response contractual arrangements between Shippers/Suppliers and Gas Consumers?

Q2: Do you consider that the current On the Day Commodity Market provides an appropriate platform to facilitate the provision of a DSR Product?

Q3: Does the proposed DSR Product meet your expectations in respect of providing sufficient market offer flexibility to match your operational requirements when determining and offering DSR? If not, which aspect(s) would you change, add or remove?

Q4: Do the criteria and arrangements set out within the Framework and Methodology for the posting and processing of DSR Offers meet your requirements? If not, could you describe the new issues you would like to be considered?

Q5: In respect of the development of the DSR Framework and Methodology, do you consider that you have been given sufficient opportunity to provide your input into the development of the DSR Framework and Methodology? Have we listened and taken account of your views?

Q6: Do you consider that the Draft DSR Framework and Methodology, the proposed DSR Mechanism and the suggested Shipper/Supplier to Gas Consumer service agreement structure delivers an efficient and economic approach, through which Gas Consumers may provide DSR, that may otherwise not be available during periods of acute gas market stress?

Q7: Do you consider that the proposed DSR Framework and Methodology appropriately meets the requirements set out in the Licence principles, i.e. that only signatories to Uniform Network Code may post a DSR Offer? If not, please detail how you feel this SC8I.4 (a) licence obligation may be better achieved?

Q8: Do you consider that the proposed DSR Framework and Methodology satisfies the eligibility criteria set out in the SC8I.4 (b)? If not, do you have any views on how to better satisfy this principle?

Q9: Are you satisfied that the introduction of the DSR Framework and Methodology through the proposed revisions to the Locational Market of the OCM Platform is the most appropriate approach to meet the principles set out in SC8I.4 (c)? If not, would you like to share any other options which in your opinion would better satisfy this principle?

Q10: Do you consider that this proposed DSR Framework and Methodology satisfies the principle set out in SC8I.4 (d) which requires all DSR Offers to be treated as 'Eligible Balancing Actions' and included in System Clearing Contracts and the calculation of Cash-out prices? If not, could you provide details of any compatibility issues that you feel would conflict with this principle?

Q11: Do you consider that the proposed DSR Framework and Methodology provides you or other Gas Consumers with an additional 'route to market'?

Q12: Does the proposed DSR Framework and Methodology provide a 'route to market' for a DSR product that you would be interested in providing?

Q13: Would you agree that the proposed DSR Framework and Methodology does not unduly preclude the emergence of further commercial interruption arrangements? If not, could you provide information regarding which element you feel could prevent the emergence of commercial interruption, and any view on how this could be mitigated?

Q14: Do you foresee any distortions or unintended consequences that the introduction of the DSR Framework and Methodology may have on the existing gas market or gas supply contract arrangements and the principle of parties balancing their own positions in the wholesale gas market?

Q15: Do you believe that the proposed DSR Framework and Methodology facilitates the procurement of DSR in a manner consistent with the licensee's obligation to operate the pipeline system in an efficient and economic manner?

Q16: Do you consider that the proposed DSR Framework and Methodology would provide an improvement to the incentives on the relevant suppliers to secure the domestic customer supply security standard?

Q17: We would value any additional comments you would like to share with us regarding the development of the DSR Framework and Methodology?

Responses

Thank you for taking the time to read this consultation. Please send your responses and or feedback by 23rd January 2015 to the following email:

enquires@gasgovernance.co.uk

Or alternatively by post to:

Claire Thorneywork
National Grid House,
Warwick Technology Park,
Gallows Hill,
Warwick,
CV34 6DA

Appendix 1
Glossary

In the context of the DSR Framework and Methodology Consultation document the following definitions should be applied to the terms outlined below;

Demand Side Response (DSR) - The reduction in an Eligible DMC's rate of gas offtake in the period following declaration of a GDW

DSR Offer - Each individual trade/tranche offer that may be submitted on to the OCM Locational platform

DSR Period - The period between the GDW being declared for the gas Day and the earlier of: (i) the revocation of the GDW; or (ii) the end of GDE Stage 1. This is the period where National Grid may accept DSR Offers

DSR Product - The basis of the DSR Framework and Methodology which puts in place the arrangements by which all DSR Offers will be placed and accepted. As set out in section [4] of the DSR Framework and Methodology

DSR Service - The framework as set out in the DSR Service Agreement in which the Gas Consumer and Shipper/Supplier will determine, agree and offer DSR to National Grid. As set out in section 2 of the DSR Framework and Methodology

Eligible DMC – An Eligible DMC will be:

- A Supply Point with a registered demand >2million therms per Annum (2M tpa);
- Able to offer a minimum DSR Offer volume of 100,000 kWhs/day in any one DSR Offer Notice

Firm Load Shedding (FLS) - During Stage 2 of a GDE; upon direction from the Network Emergency Coordinator (NEC), National Grid and relevant Transporters may instruct the End Users to curtail gas offtake at specified offtakes

Gas Consumers – eligible DMC sites with a Supply Point which has a demand greater than 2 million therms per annum and those who are able to offer a minimum energy quantity of 100,000 kWhs/day in any one DSR Offer

GDE - Gas Deficit Emergency ref: UNC Section Q3.2

GDW - Gas Deficit Warning ref: UNC Section V5.9

Multi-Day – A Offer to reduce demand offtake for a period greater than one gas Day up to a maximum of 7 gas Days ref: UNC Section D4

OCM Locational Market - The market that DSR Offers may be submitted upon, as set out in section 3 of the DSR Framework and Methodology

The GDE Stages - GDE Stages are defined in UNC TPD Section Q and in the Network Gas Supply Emergency Classifications as provided in the National Grid Safety Case for a Network Gas Supply Emergency

Tick Down - A DSR Offer may be offered with a feature that reduces the volume of DSR available for the gas Day as the unaccepted Offer progresses through that Day

Appendix 2
Special Condition 8I

Schedule

Special Condition 8I: Development and implementation of a Demand Side Response methodology for use after a Gas Deficit Warning

Introduction

8I.1 The Licensee must:

(a) develop a methodology (the "Demand Side Response Methodology") for assessing and accepting Demand Side Response Offers;
(b) submit a draft version of the Demand Side Response Methodology to the Authority for approval no later than 1st March 2015;
(c) where Directed by the Authority to do so, run a trial of the approved draft Demand Side Response Methodology;
(d) following such a trial, submit to the Authority a report on the outcome of the trial and a final version of the Demand Side Response Methodology amended to address issues identified by the Licensee during the trial; and
(e) where Directed by the Authority to do so, implement the Demand Side Response Methodology.

Part A: Development of a Demand Side Response Methodology

8I.2 The Licensee must develop the Demand Side Response Methodology in consultation with interested parties.

8I.3 The Licensee must use reasonable endeavours to ensure that it develops the Demand Side Response Methodology in accordance with the principles set out in paragraph 8I.4 (the "Demand Side Response Methodology Principles").

8I.4 The Demand Side Response Methodology Principles are that the Demand Side Methodology must:

(a) ensure that any party making a Demand Side Response Offer is a party to the Uniform Network Code;
(b) set out the criteria for determining that particular "DMC" Supply Point Components are "DMC" Supply Point Components in respect of which a party may not make Demand Side Response Offers;
(c) allow the Licensee to accept Demand Side Response Offers only where a Gas Deficit Warning is in place or within Stage 1 of a Gas Deficit Emergency;
(d) demonstrate compatibility with existing market arrangements by setting out the manner in which any Demand Side Response Offers accepted by the Licensee are to be treated as Eligible Balancing Actions and included in the System Clearing Contract, System Marginal Buy Price and System Marginal Sell Price;
(e) promote, and further facilitate, parties making Demand Side Response Offers to the Licensee through open and transparent market-based arrangements;
(f) not unduly preclude the emergence of commercial interruption arrangements;
(g) minimise distortions and unintended consequences on existing market arrangements and the principle of parties balancing their own positions in the wholesale gas market; and
(h) ensure that Demand Side Response is procured in a manner consistent with the Licensee's duties under the Act and, in particular, the Licensee's obligation to operate the pipe-line system to which this licence relates in an efficient, economic and co-ordinated manner.

Part B: Submission, approval and publication of the Demand Side Response Methodology

8I.5 The draft Demand Side Response Methodology submitted by the Licensee must be accompanied by any written representations (including any proposals that have not been accepted by the Licensee) that were received from interested parties during the consultation process and have not been withdrawn.

8I.6 The Authority will make its decision on whether to approve the Demand Side Response Methodology within 90 days beginning on the date on which the Licensee submits the Demand Side Response Methodology. In considering whether to approve the draft Demand Side Response Methodology, the Authority may have regard to whether it is consistent with the Demand Side Response Methodology Principles.

8I.7 Where the Authority approves the draft Demand Side Response Methodology, it may direct the Licensee to:

(a) conduct a trial of the draft Demand Side Response Methodology; and
(b) publish the draft Demand Side Response Methodology,
in accordance with Part C of this condition.

8I.8 If the Authority does not approve the draft Demand Side Response Methodology, it may Direct the Licensee to consult with interested parties and submit to the Authority for approval a revised draft Demand Side Response Methodology in accordance with any conditions and within such a timescale as may be set out in its Direction.

Part C: Trial and implementation

8I.9 Where the Authority directs the Licensee to conduct a trial pursuant to paragraph 8I.7 above, the Licensee must:

(a) conduct a trial of the draft Demand Side Response Methodology in order to assess the effectiveness of the Demand Side Response Methodology proposed by the Licensee; and
(b) within 28 days beginning on the last day of the trial, submit to the Authority a report on the outcome of the trial and any proposed changes to the draft Demand Side Response Methodology.

8I.10 Following completion of the trial and the making of submissions to the Authority pursuant to paragraph 8I.9 above, unless the Authority directs otherwise within 28 days, the Licensee must:

(a) develop appropriate modifications to the Uniform Network Code and other processes and systems to enable it to implement the Demand Side Response Methodology;
(b) once the modifications, processes and systems are complete, implement the Demand Side Response Methodology as soon as is reasonably practicable; and
(c) publish the final Demand Side Response Methodology on its website and in such other manner as the Authority may direct.

Part D: Exception to compliance with condition

8I.11 The Licensee is not required to comply with this condition to such extent and subject to such conditions as the Authority may from time to time direct.

8I.12 The Authority may, following consultation with the Licensee and interested parties, direct that the Licensee must temporarily or permanently cease operation of the Demand Side Response Methodology.

Part E: Revising the Demand Side Response Methodology

8I.13 The Licensee must, if so directed by the Authority, and in any event at least once in each

Formula Year, review and if appropriate revise the Demand Side Response Methodology implemented in accordance with paragraph 8I.10 in consultation with interested parties.

8I.14 The consultation must allow a period of not less than 28 days in which interested parties can make representations or objections to the Licensee.

8I.15 Within seven days after completing the consultation, the Licensee must send to the Authority:

(a) a report on the outcome of the review;
(b) a statement of any proposed revisions to the Demand Side Response Methodology that the Licensee (having regard to the outcome of the review) reasonably considers would better achieve the Demand Side Response Methodology Principles; and
(c) any written representations or objections (including proposals for revising the statement that have not been accepted by the Licensee) that were received from interested parties during the consultation process and have not been withdrawn.

8I.16 The Licensee may revise the Demand Side Response Methodology only in accordance with any revisions set out in the statement required by paragraph 8I.15(b) and only if the Authority has not directed otherwise within 28 days of receiving the documents referred to in paragraph 8I.15 above.

Appendix 3
The DSR Framework and Methodology Document

Background

In February 2014 Ofgem published its Final Policy Decision Consultation on the Gas Security of Supply (SoS) Significant Code Review (SCR). As part of the Consultation, Ofgem proposed a revision of National Grid's NTS Transporters Licence to introduce a new Special Condition 8I (SC8I) – 'Development and Implementation of a Demand Side Response (DSR) Methodology for use after a Gas Deficit Warning'. The Licence revisions were approved by the Authority in September 2014. SC8I requires National Grid NTS to:

1. Develop a framework and methodology (the "Demand Side Response Methodology"), in consultation with the industry, for assessing and accepting Demand Side Response Offers, with a draft to be submitted to the Authority no later than 1st March 2015;

2. Where Directed by the Authority to do so, run a Trial of the approved draft Demand Side Response Methodology;

3. Following such a Trial, submit to the Authority a report on the outcome of the Trial and a final version of the Demand Side Response Methodology, amended to address issues identified by the Licensee during the Trial; and

4. Where Directed by the Authority to do so, implement the Demand Side Response Methodology.

The DSR Framework and Methodology arrangements described within this document seek to ensure that all relevant SC8I Licence condition principles are met.

The DSR Framework and Methodology

Ofgem's SCR process identified that the gas market would benefit from large End Users (i.e. the Gas Consumer) reducing demand voluntarily ahead of an emergency. However, during the same process stakeholders expressed doubts that a market for commercially contracted reduction in demand would emerge of its own accord. During this process a number of stakeholders also suggested the development of a centralised mechanism for DSR. Ofgem has since directed National Grid NTS to develop a centralised mechanism for specific types of End Users to Offer their DSR directly to National Grid NTS. It is envisaged that establishing this mechanism will ultimately serve to 'kick-start' the market for commercially contracted reduction in demand between End Users and Shippers/Suppliers in the medium to long term and thereby increase competition in the provision of DSR.

Over the last year we have held several industry engagement sessions, meeting with approximately 60 Large Industrial End Users, Shippers and Suppliers, and initiated a suit of Industry Workgroups for Modification Proposal 0504 – 'Development of a Demand Side

Response Methodology'. Based on what we have learnt through Industry engagement and DSR workgroup sessions, National Grid NTS has drafted a DSR Framework and Methodology that seeks to reflect the views expressed by Industry and represent the broad workgroup consensus of DSR discussions to date.

The DSR Framework and Methodology seeks to provide an additional 'route to market' through which End Users (via their Shipper/Supplier) can signal their willingness to make available additional DSR energy quantity, i.e. DSR energy quantities which would not otherwise be offered through existing market mechanisms. Encouraging DSR energy quantity to come forward, post a Gas Deficit Warning (GDW), but prior to the end of Gas Deficit Emergency (GDE) Stage 1 may, in some circumstances, provide sufficient additional system balancing volumes to avoid the system entering a GDE Stage 2. This may enhance the security of supply to more critical load and help all affected parties avoid the high costs and risks associated with an escalation into the later stages of a GDE.

DSR Framework and Methodology

Index

DSR Methodology

Section 1. Definitions

1.1. Definitions:

a	DSR	Demand Side Response. The reduction in an Eligible DMC's rate of gas offtake in the period following declaration of a GDW.
b	DSR Service	The framework within which the end to end DSR processes are operated. As set out in section 2 of this document.
c	DSR Offer	Each individual trade offer that may be submitted on to the OCM Platform– Locational market.
d	DSR Product	The arrangements by which all DSR Offers will be placed and accepted. As set out in section 4 of this document.
e	DSR Period	The period between the GDW being declared for the gas Day and the earlier of: (i) the revocation of the GDW; or (ii) the end of GDE Stage 1. This is the period where National Grid NTS may accept DSR Offers.
f	OCM Platform – Locational market	The market that DSR Offers may be submitted upon. As set out in section 3 of this DSR Methodology.
g	GDW	Gas Deficit Warning ref: UNC Section V5.9.
h	GDE	Gas Deficit Emergency ref: UNC Section Q3.2
i	Firm Load Shedding (FLS)	During Stage 2 of a GDE; upon direction from the Network Emergency Coordinator (NEC), National Grid NTS and relevant Transporters

		may instruct the End Users to curtail gas offtake at specified sites. Ref: UNC Section Q3.5.
j	Tick Down	A DSR Offer may be offered with a reducing down feature that reduces the volume of DSR available on the gas Day as the unaccepted Offer progresses through the Day.
k	The GDE Stages	GDE Stages are defined in UNC TPD section Q3.2 and in the Network Gas Supply Emergency Classifications as provided in the National Grid NTS safety case for a Network Gas Supply Emergency
l	Eligible DMC	As set out in section 5.2 of this DSR Framework and Methodology

Where capitalised words and phrases are used within this document, those words and phrases shall usually have the meaning provided within the Uniform Network Code (unless they are otherwise defined within the terms detailed above).

Section 2. DSR Service

2.1. The DSR service features two principle contractual arrangements:

- **For reduction in gas quantity offtaken, at relevant Site** – Shipper/Supplier to End User contractual arrangement. On behalf of the End User (in some cases through instruction by the Supplier) the Shipper will agree to place an offer onto the DSR mechanism, which reflects the agreed DSR energy quantity and price for End User's reduction in offtake from the NTS. In return the End User commits to honouring and delivering on the agreed energy quantity reduction if called to do so by the relevant Shipper following acceptance of the offer by National Grid. (Note: Requirements for this aspect of the DSR mechanism shall be defined by the Shipper, Supplier End User through their DSR Service agreement)s; and

- **For the procurement of the gas associated the DSR Offer** – Shipper to National Grid NTS contractual arrangements. Under prescribed parameters and criteria set out in this DSR Framework and Methodology, the Shipper will offer to sell title to gas (associated to the DSR Offer), to National Grid, in its Role as Residual Balancer.

2.2. The End User (in some cases through the Supplier) will work together with their registered Shipper to set-out and agree details, criteria and arrangements associated with posting the DSR Offer(s) for an Eligible site onto the OCM Platform – Locational market. DSR Offers may be placed, updated or withdrawn, at any time up to the declaration of a GDE Stage 2.

2.3. DSR Offers associated to the DSR Service may only be accepted by National Grid NTS and only for a gas Day in which a GDW has been declared and is in effect. DSR Offers posted onto the Locational market will be available for National Grid NTS to accept throughout the DSR Period.

2.4. National Grid NTS will promptly notify the OCM Market Operator that a GDW has been declared and is in effect and also when a GDW has been revoked.

2.5. Where a DSR Offer is accepted by National Grid NTS on the OCM Platform – Locational market;

2.5.1. The Shipper will notify the End User of the requirement to reduce their notified End Of Day (EOD) offtake by an energy quantity at least equal to the DSR Offer (including any allowances for 'Tick down').

2.5.2. The Gas Balance position, for both the Shipper and National Grid NTS, in its Residual Balancing role, registered on the UK Link system, will be adjusted to reflect the completed gas trade on the OCM Platform – Locational market.

2.5.3. DSR Offers may be accepted:

a Solely by National Grid NTS for National Balancing purposes; and

b Post the declaration of a GDW up to the end of Gas Deficit Emergency Stage 1; and

c Where the DSR Offer meets the criteria set out in this DSR Framework and Methodology.

Section 3. The OCM Locational Market

The OCM's Locational market will be revised from a market in which Shipper OCM Market participants may both post and accept Locational bids and offers to a market where National

Grid NTS is permitted to accept Locational bids and offers; and Shipper Market participants are only able to post Locational bids and offers.

3.1. National Grid NTS will be the only Market participant on the OCM Locational market able to accept Locational bids and Offers;

3.2. As Network Code signatories able to post Physical Offers, Shippers will be the only Market participants able to post Locational bids and offers ;

3.3. DSR Offers will be posted on to the OCM Locational Market;

3.4. DSR Offers will be identified by a DSR Flag;

3.5. DSR Offers will not be visible on the Locational market until a GDW for a gas Day has been declared;

3.6. Where a DSR Offer is accepted it will be regarded as a 'Locational Market Transaction' that will be undertaken in accordance with UNC section D2.2.1 (d) a 'Locational Market Transaction'; and

3.7. For the avoidance of doubt, all accepted DSR Offers will be included in the system clearing processes and cash-out for the relevant gas Day.

Section 4. The DSR Product

4.1. The DSR Product provides 2 items:

a A specified energy quantity of DSR to be provided by the End User; and

b A Gas Trade for the equivalent DSR energy quantity provided by the Shipper.

4.2. Features of the DSR Product:

4.2.1. The DSR Product must be associated with a specific Daily Metered Supply Point that has a registered Annual Quantity (AQ) greater than 2 million therms (DMC).

4.2.2. The Product must be submitted onto the OCM Platform– Locational market by a Registered User at the relevant DMC.

4.2.3. The Product may be offered as;

a a Daily product and accepted for each gas day exclusively in accordance with UNC Section D2.2.1 (d) a 'Locational Market Transaction' ; or

b a Multiday product undertaken in accordance with the UNC Section D4 – Multi-Day Balancing Actions ;

4.2.4. The DSR Product must be submitted onto the OCM Platform - Locational market as a DSR Offer, prior to the declaration of a Gas Deficit Emergency (GDE) Stage 2;

4.2.5. The DSR Product may be offered in separate tranches of energy quantity, which may be priced individually;

4.2.6. Each tranche will be submitted as a single DSR Offer;

4.2.7. There may be more than one DSR Offer at a specific DMC;

4.2.8. Each DSR Offer must be greater than 100,000 kWhs (4k therms on OCM);

4.2.9. Where the DSR Offer has been submitted onto the OCM Platform - Locational market for a relevant gas Day, and remain a valid offer, National Grid NTS may accept the Offer, during the DSR Period;

4.2.10. Features of the daily DSR Offer product. The daily DSR Offer may be offered in the form of:

a an offer that is input on a daily basis; or

b a 7 Day profile of daily offers (submit differing values for each day of the week if so required) the 7 day profile of daily offers will be replicate automatically until revised or withdrawn.

Section 5. Eligibility

5.1. Only a Registered User at the Supply Points that comply with the eligibility rules specified in this DSR Framework and Methodology may enter offers into the DSR mechanism. In turn the DSR Framework and Methodology must satisfy the criteria and obligations set out in the GT Licence obligation SC8I.

5.2. An Eligible Supply Point is a 'DMC' customer as defined in the UNC Section A4.5. An Eligible DMC will be:

a A Supply Point with a registered demand >2million therms per Annum (2M tpa);

b Able to offer a minimum DSR Offer energy quantity of 100,000 kWhs in any one DSR Offer Notice.

5.3. A Shipper may only submit a DSR Offer onto the OCM Platform – Locational market for an Eligible DMC where:

a it is a Registered User at the Eligible DMC; and

b it has entered into a DSR Service Contract, with the relevant End User, prior to the relevant GDW being declared.

Section 6. DSR Participants

6.1. There are four/five counter parties participating in the DSR arrangement.

6.1.1. End User at the Eligible DMC;

6.1.2. Shipper & Supplier;

6.1.3. OCM Market Operator; and

6.1.4. National Grid NTS

6.2. **End Users**

6.2.1. The End User, with an Eligible DMC, may choose to enter into a DSR arrangement with its registered Shipper.

6.3. **The Shipper/Supplier**

6.3.1. The Shipper/Supplier, who must be a Registered User at the Eligible DMC, is the party eligible to participate on the OCM Platform - Locational market on behalf of the relevant End User with the Eligible DMC.

6.4. **OCM Market Operator**

6.4.1. The OCM Market Operator will provide the Locational market within the OCM.

6.4.2. The OCM Market Operator will facilitate offer and acceptance of DSR trades in accordance with the OCM Market Rules contract, and UNC Section Annex D1, which will reflect the DSR Framework and Methodology provisions.

6.5. **National Grid NTS**

6.5.1. National Grid NTS will be the sole party that may accept DSR Offers within the DSR mechanism.

6.5.2. National Grid NTS will only accept DSR Offers for national balancing purposes.

6.5.3. DSR Offers for the relevant gas Day may be accepted by National Grid NTS at any time following the declaration of a GDW for the relevant gas Day and for the duration of the DSR Period.

6.5.4. The acceptance of a DSR Offer by National Grid NTS does not affect, or set aside, the Network Emergency Coordinator's (NEC), National Grid NTS's or other relevant Transporters' rights or obligations when undertaking their duties under the provisions set out in 'The Gas Safety (Management) Regulations 1996 - NEC Safety Case'.

Section 7. DSR Contractual Relationship

7.1. Prior to posting a DSR Offer the registered Shipper must seek agreement with the relevant End User that the registered Shipper may post DSR Offers onto the OCM Platform - Locational Market, on behalf of the End User;

7.2. Where a DSR Offer is accepted by National Grid NTS:

7.2.1. The DSR Offer acceptance will be a contractual arrangement between the Shipper and National Grid NTS through the existing OCM Market Rules and UNC contractual arrangements.

Section 8. The DSR Offer Price

8.1. The DSR Offer price will be a p/kWh per gas Day conforming to OCM Market Rules.

8.2. The derivation of the DSR Offer price will be agreed between the relevant End User and its registered Shipper/Supplier.

8.3. Accepted DSR Offers will be treated in a similar manner to a Market Balancing Actions (MBA) and as such all accepted DSR Offer prices will feed into the System Average Price (SAP) and System Marginal buy Price (SMPb) calculation for the relevant gas Day in accordance with existing arrangements for other MBAs.

8.4. Payment for the accepted DSR Offer will be paid within the same timescales prescribed for all other MBAs, and in accordance with the UNC TPD Section S;

8.5. The Shipper will pay the End User the agreed DSR payment for an accepted DSR Offer in the timescale agreed by the two parties

Section 9. Posting DSR Offers

9.1. A DSR Offer energy quantity placed on the OCM Platform – Locational Market, in respect of any DSR Offer, must be greater than 100,000 kWhs.

9.2. In respect of a DSR Offer submitted through the gas Day on a ‘Tick Down’ option, once the DSR Offer reduces below the allowed minimum quantity the DSR Offer will be withdrawn from the market for the relevant gas Day, this is due to the DSR Offer falling below the minimum bid criteria and will therefore not be a valid offer.

9.3. DSR Offer(s) will be for a specified offtake reduction energy quantity (kWhs) at an Eligible DMC and in the form specified by the DSR Framework and Methodology. Each DSR Offer(s) will relate to one individual energy quantity of reduced offtake (a

tranche); for each Eligible DMC the total energy quantity of offtake reduction of all DSR Offers shall not exceed the prevailing Supply Point nominated daily offtake quantity, as set out in the prevailing Gas Flow Nomination, submitted by the relevant Shipper, for the Eligible DMC, for the relevant gas Day.

9.4. A DSR Offer may be posted on to the Locational market of the OCM at any point in time up to the declaration of GDE stage 2 for the gas Day, but will only be able to be accepted during the DSR Period.

Section 10. DSR Offer Acceptance Arrangements Process

10.1. Where a GDW has been declared National Grid NTS may accept DSR Offers on the Locational market for each Day up to the Day that the GDW is revoked, or the gas Day within which GDE Stage 1 has ended and Stage 2 is declared.

10.2. Following the declaration of a GDE Stage 2 National Grid NTS will not be required to accept any further DSR Offers.

10.3. Where Declaration of a GDE Stage 2 occurs within a gas Day all DSR Offers accepted whilst in GDE stage 1 will apply.

10.4. All available DSR Offers will be displayed in a price order consistent with all other OCM markets.

10.5. National Grid NTS will accept lowest priced offers first in stack order, making an assessment across the OCM Title, Physical, Locational Markets.

10.6. Where National Grid NTS accepts a DSR Offer the Shipper will be notified through existing OCM notification processes.

Section 11. Exercising The Accepted DSR Offers Process

11.1. **Daily Product**

Where National Grid NTS accepts the DSR Offer;

11.1.1. The relevant Shipper will notify the relevant End User of the requirement to reduce their gas offtake for the gas Day by the energy quantity specified; at the specified site, within the timescales, and arrangements prescribed in the relevant DSR Offer Notice.

11.1.2. As with all Locational Market Offers accepted on the OCM, the Shipper will notify National Grid NTS of the intent to reduce offtake at the Eligible DMC by submitting a re-nomination at the Eligible DMC Supply Meter Point, as prescribe in UNC Section D2.3 – Contract Re-nominations.

Section 12. Treatment of Accepted Offers When Entering into a GDE Stage 2

12.1. Where National Grid NTS has already accepted a DSR Offer for a gas Day on which National Grid NTS subsequently declares a GDE Stage 2 the accepted DSR Offer will be exercised for each Day following the Day the offer was accepted until countermanding instructions are issued by National Grid NTS i.e. instruction from National Grid NTS during the restoration stage of the GDE.

Section 13. Payment Arrangements

13.1. In respect of the Day, or Multiday, that the DSR Offer contract duration was accepted for, payment will be made in accordance with the accepted DSR Offer price,

13.2. For subsequent Days during GDE stage 2; payment at 30 day average SAP for the accepted DSR energy quantity will made up to the point that the relevant site has been instructed to Firm Load Shedding (FLS), by National Grid NTS or such other relevant Transporter.

13.3. In the event that the accepted Multiday Offer contract duration runs beyond FLS; the payment will continue to be paid in accordance with the agreed DSR Offer price until the contract duration is extinguished.

13.4. Where the Eligible DMC is FLS the prevailing DSR payment arrangements will apply in accordance with the Ofgem Gas Significant Code Review (SCR) on Security of Supply (SoS) UNC provisions[4], in which UNC section Q 6.4 - 'DSR Payments' prescribes a DSR payment, for each Day of curtailment, of 30 Day Average SAP (price set from the Day prior to entering Stage 2) multiplied by the energy quantity that was FLS.

13.5. As the DSR is exercised through an OCM trade, once the DSR service has been exercised, the relevant End User will be entitled to receive the relevant DSR payment until the end of the contracted duration on which the DSR Offer was accepted, irrespective of any countermand instruction from National Grid NTS that the GDW for the relevant gas Day has been repealed.

[4] UNC text to be implemented September 2015 In accordance with the Authority's direction on Gas SCR http://www.gasgovernance.co.uk/sites/default/files/gasscrs36cdirectiondraft.pdf

Section 14. DSR Settlement Arrangements

14.1. For the purposes of payment and settlement arrangements all accepted DSR Offers will be regarded as Market Balancing Actions (MBA) taken by National Grid NTS. These payments will be settled with the relevant Shipper.

14.2. The Shipper will be required to pass agreed payments associated with the DSR Offer to the relevant End User within their agreed settlement timescales.

14.3. Where National Grid NTS accepts a DSR Offer on a Day for which it later declares a GDE Stage 2; the offer acceptance shall continue to be exercised throughout GDE Stage 2 and higher emergency stages. Payments associated with accepted DSR offer energy quantities will be settled as follows:

a For each relevant Day after the declaration of GDE stage 2, all settlement of DSR Offer energy quantities accepted prior to the declaration of entry into GDE stage 2, will NOT be executed within the settlement timescales prescribed for Market Balancing Action settlement arrangements. These DSR Offer payments will be settled in accordance with the Gas SCR SoS UNC provisions[5], UNC section Q 6.4.7 - 'DSR Payments', and will be settled within the same timescales and under the funding arrangements provided for DSR Payments relating to Involuntary DSR through FLS.

b Accepted DSR Offers will receive DSR Payment, at the offer price multiplied by the energy quantity accepted in the DSR Mechanism, for each Day the site is curtailed, up to the day on which the site is subject to FLS. A FLS site will receive DSR Payments, for the total energy quantity of the accepted Offer (including both voluntary and involuntary DSR) in accordance with the DSR settlement arrangements prescribed in UNC section Q 6.4.7 – 'DSR Payments' (SCR SoS provisions to be introduced in September 2015).

14.4. Supplier Licence Condition 19D of the Gas Supply Licence and Shipper Licence Condition 15A of the Gas Shipper Licence set out the obligation for passing on Involuntary DSR payments to End Users as soon as reasonably practicable.

Section 15. Liability Arrangements

[5] UNC text to be implemented September 2015 In accordance with the Authority's direction on Gas SCR http://www.gasgovernance.co.uk/sites/default/files/gasscrs36cdirectiondraft.pdf

15.1. When submitting the DSR Offer onto the OCM Platform – Locational market the Shipper warrants that the DSR Offer accurately reflects the details agreed in the relevant DSR Offer Notice. The Shipper will be solely responsible and liable for any error or omission in the DSR Offer, when registering onto the Locational market; these liabilities will manifest themselves as clearing (cash-out) costs, Physical Re-nomination Incentive (PRI) charges and Scheduling charges.

15.2. Where the amount of gas offtaken for a relevant gas Day at the relevant Eligible DMC is not less than or equal to the re-nomination submitted by the Shipper, in response to the acceptance of a DSR Offer, then the Shipper is potentially exposed to clearing costs, and the End User has therefore not met its trade requirements. The End User and the registered Shipper should consider liability arrangements associated with the Shipper's exposure to such clearing costs.

Section 16. The UNC Provisions

In respect of the DSR Framework and Methodology the UNC will include the following provisions:

16.1. Prior to posting a DSR Offer onto the OCM the registered Shipper will have a record of the agreement, with the relevant End User of the relevant site, that the Shipper may post the DSR Offer(s) on behalf of the relevant End User.

16.2. An accepted DSR Offer will be processed and settled in accordance with Locational Market Transaction arrangements.

Appendix 4
Volumetrics and DSR Survey analysis results

Background

During initial Industry discussions on the development of a Demand Side Response Mechanism, there was a common desire to understand and gain further details on the potential size of the DSR market. In order to address this request, National Grid carried out a piece of analysis to assess the potential DSR energy quantity that could be made available by Gas Consumers through DSR.

Assumptions

Throughout the analysis we made a number of informed assumptions to ensure that the data presented was as representative of the population of eligible sites as possible. These assumptions are outlined below;

Creating the scenarios

- **Supply Offtake Quantity (SOQ)** – As a starting point we gathered each eligible site's SOQ figure. This showed us the expected maximum daily consumption of gas at all eligible sites.
- From the historical data gathered during the analysis we could see that it is very rare for a site to actually utilise their maximum daily gas consumption (SOQ). Therefore to get a more representative starting point of what an 'average' site's gas consumption could be expected to be on any one day we created a base scenario.
    - To create the base scenario we looked at the gas consumption on seven high winter demand days during the last three years, these seven days included the peak gas demand day over this period, which was seen on 23rd January 2013.
    - We then compared each site's consumption on these seven days with their SOQ figure, this enabled us to see an average percentage utilisation of SOQ figures across all of the potentially eligible sites.
    - The assessed 'average' maximum percentage utilisation of SOQ was 60%.
    - As a result of this analysis we decided to use 60% of each site's SOQ figure as our base scenario.
    - We then used the base scenario as a starting point for the four additional scenarios which were;
        - 50% of the Base scenario
        - 20% of the Base scenario
        - 10% of the Base scenario
        - 5% of the Base scenario

- These scenarios enabled us to demonstrate a potential range of DSR energy quantity availability across a series of circumstances.
- Sites which we were aware offtake gas primarily for use in Gas fired generation were omitted from the analysis due to already having an established route to market.

Participation

- The scenarios assume that all Gas Consumers who are able to participate (DM sites >2 million therms per annum) would be willing to participate.
- The scenarios also assume that everyone would participate on an equal basis e.g. all sites would be willing to offer the same amount of their gas demand (50%, 20%, 10% or 5%).

Analysis Results

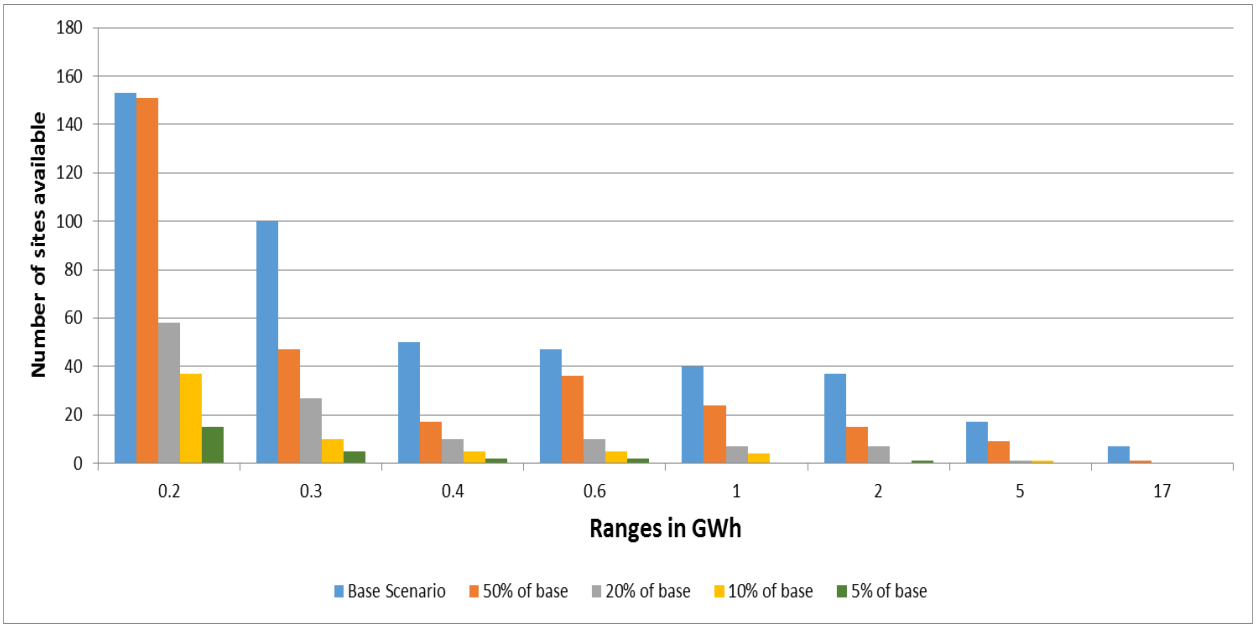
The table below shows the estimated energy quantity availability in GWh/day, and the number of sites that would be eligible to participate in the DSR mechanism; based on the base scenario and the 'four percentage of base' scenarios.

Scenarios	Estimated Volume Available (GWh)	Number of sites
Base Scenario - 60% of SOQ figures	291	451
50% of base scenario	134	300
20% of base scenario	41	120
10% of base scenario	17	62
5% of base scenario	6	25

The table above shows that based on the design of the agreed DSR Product there is an estimated 291 GWh/day of gas and up to 451 sites that could participate in the DSR mechanism. The number of sites which could participate in each scenario is dependent upon them still being able to offer at least the minimum trade energy quantity on the OCM (100,000 kWh). Therefore, it can be seen that as the scenarios half in size, e.g. from 20% to 10% the energy quantity and number of sites which are able to participate doesn't simply half alongside this, as some of the sites will have fallen below the minimum OCM trade quantity of 100,000 kWh and therefore excluded from the analysis.

The graph below shows the potential DSR availability in terms of the number of sites which

can participate. We created eight energy quantity ranges to show the number of sites which are able to participate in each range based on the 5 scenarios previously described.



Within the above chart, each coloured column represents one of the five scenarios. The lighter blue column shows the results of the Base Scenario, each column represents the number of sites within that scenario which would be able to offer an energy quantity within the range outlined on the x axis e.g. the first blue column shows that within the Base Scenario the analysis suggests that approximately 150 sites would be able to offer an energy quantity of DSR between 0.1 and 0.2 GWh. In contrast in the 10% of Base Scenario, which is depicted in the yellow columns, there is only 1 site which is able to offer an energy quantity of DSR within the range of 2 – 5 GWh

The DSR Survey Results

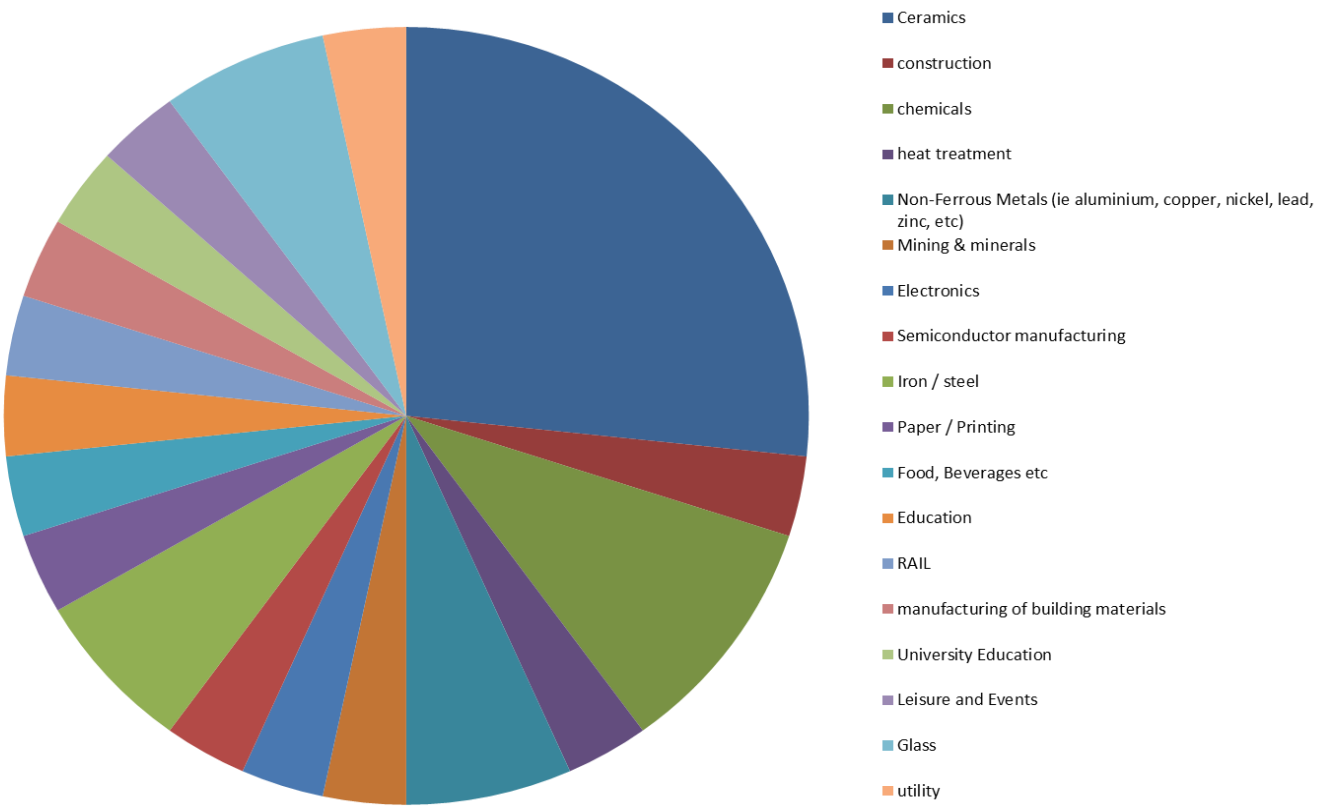
Following the completion of the analysis, and agreement on the proposed DSR Product design as outlined within the DSR Framework and Methodology, the workgroup recognised that it would be appropriate to gather wider views from Gas Consumers on the proposed product design, to understand if they would be interested in participating in the DSR mechanism. In order to gather these wider views the workgroup agreed the content of a stakeholder survey. This survey asked a number of key questions including:

- In the event that the gas market was under stress and wholesale prices were rising significantly, would you voluntarily reduce your demand?
- Approximately what is your average daily gas demand?
- Approximately what proportion of your load would you be willing to offer in DSR?

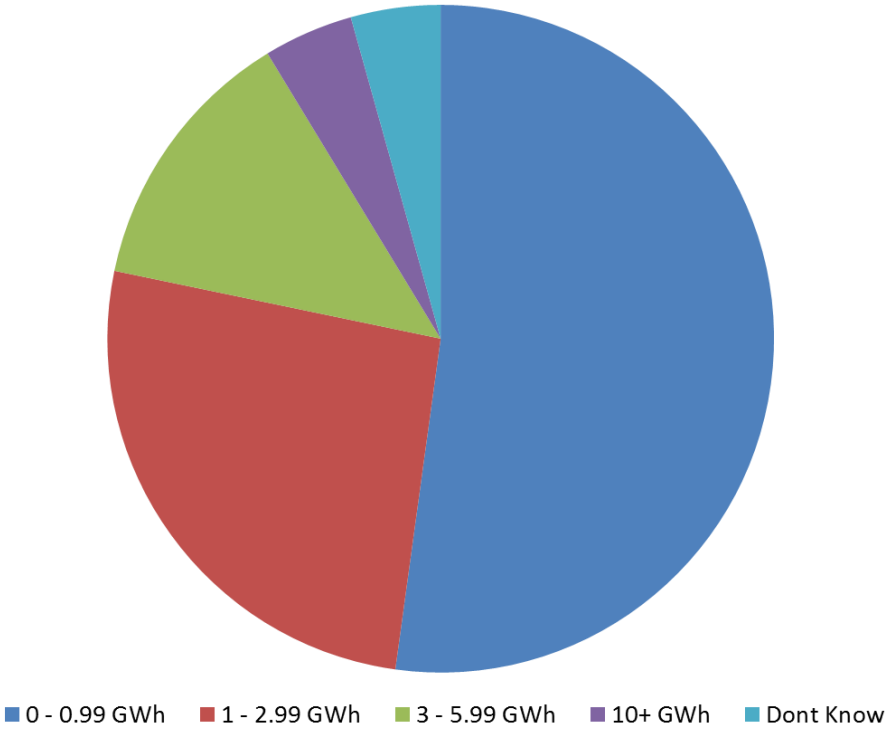
- Would you be interested in participating in a DSR mechanism if this helped to protect your critical loads and you received compensation for doing so?
- National Grid intends to run an 'Expression of Interest' trial of the potential DSR mechanism following the industry development process and before launching the final product. Would you be willing to participate in this simple paper based trial exercise?

The information presented below was gathered from the responses received from the DSR stakeholder Survey. The DSR Survey was sent out by both National Grid and the Joint Office on various industry distribution lists capturing a wide Gas Consumer audience. The diverse audience targeted enabled us to get responses from a wide range of sectors as can be seen in the pie chart below.

What sector are you in?

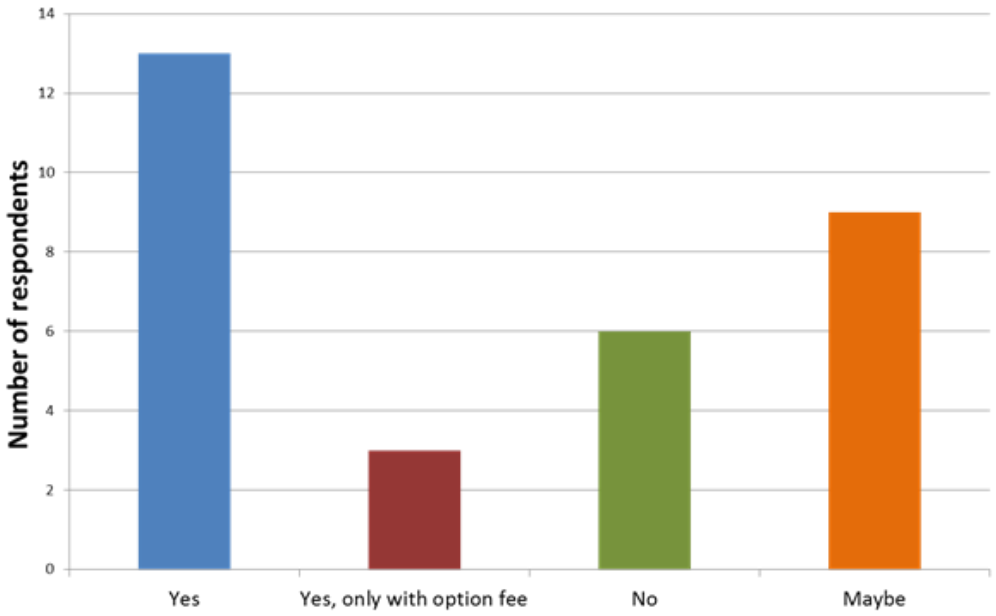


What is your average daily gas demand?



As can be seen from the pie chart above, over half of the respondents fell within the smallest applicable daily gas demand category of 0 - 0.99 GWh/day and only one respondent fell within the largest applicable daily gas demand category of over 10 GWh/day.

Would you be interested in participating in a DSR mechanism?

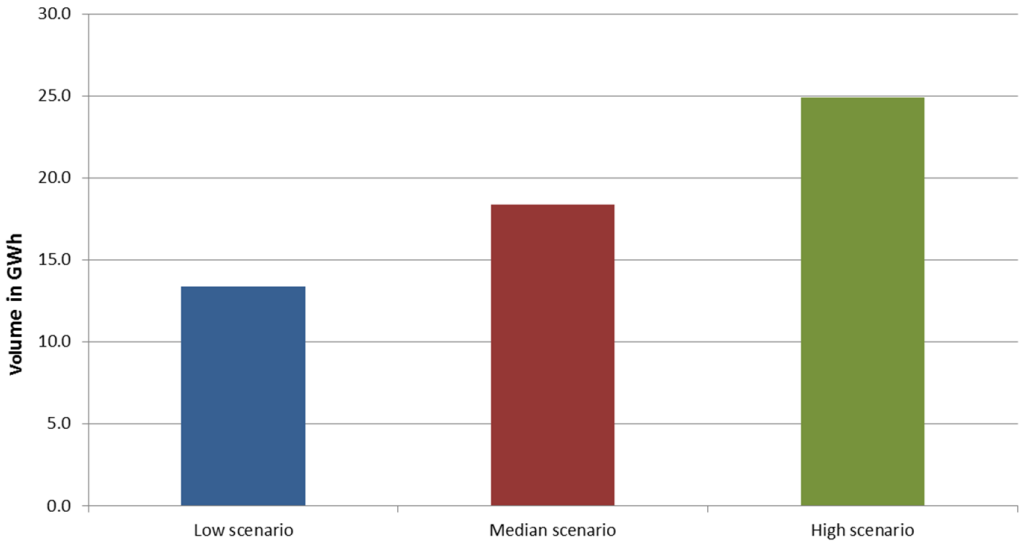


In total National Grid received 31 responses to the DSR Survey of which 25 respondents gave favourable responses of either yes or maybe.

The graph below excludes the respondents who answered 'No' to participating in the DSR mechanism. This is to ensure that the analysis shows an accurate picture with regards to the potential energy quantity which DSR Offers may be made available for. Therefore the following graph is based on the 25 'favourable' responses.

The responses to two questions within the survey, 'Approximately what is your average daily gas demand' and 'Approximately what proportion of your load would you be willing to offer in DSR' together with further information gathered from discussions with the respondents who left their contact details, enabled National Grid to generate three further energy quantity scenarios. These scenarios enabled us to present an alternative range depiction of how much energy quantity could be offered from the 25 respondents, who answered 'favourably' to participate in a DSR mechanism.

Three scenarios to show the potential volume availability from the 25 favourable responses



As can be seen from the bar chart above the 25 respondents who answered 'favourably' to the DSR Survey could potentially offer an energy quantity of gas 'turn down' in the range of 14 – 25 GWh.

- The low scenario represents each respondent offering the minimum of the range outlined in their response to the survey, in terms of volume and proportion of load, they would be willing to offer;

- The high scenario represents each respondent offering the maximum of the range outlined in their response to the survey, in terms of volume and proportion of load, they would be willing to offer;
- The median scenario represents each respondent offering the median of the range outlined in their response to the survey, in terms of volume and proportion of load, they would be willing to offer.

Summary of the analysis

The volume of responses received to the DSR Survey represents approximately 7% of the sites that would be eligible to participate in the DSR mechanism. Of the 31 responses received 25 indicated a 'favourable' response answering either 'yes' or 'maybe' to participating in the DSR mechanism, which is approximately an 80% favourable response rate from this population of Gas Consumers. Although these responses only represent a small proportion of the eligible sites it does provide an indication of the potential for participation in the DSR mechanism.

Overall, although both the analysis results and the DSR Stakeholder Survey results do rely on a number of broad assumptions they do provide an indication to the potential number of sites that are eligible and potentially willing to participate in the DSR mechanism and also the potential gas DSR energy quantity that could be made available through the mechanism.

Appendix 5
Network Gas Supply Emergency Classification

Please see the table below for a high level overview of the Network Gas Supply Emergency Classification. Further detailed information relating to the occurrence of a gas supply emergency can be found within the Uniform Network Code – Transportation Principle Document – Section Q.3.

	Network Gas Supply Emergency Classification		
	Gas Deficit: Insufficient Gas Supplies Available to the NTS		Critical Transportation Constraint in the NTS
Emergency Stage	Gas Deficit Emergency	Safety Monitor Breach	Critical Transportation Constraint

1 (Potential)	• Emergency Spec Gas
	• NTS Linepack
	• Distribution Network Utilisation
	  ○ Distribution Network Storage
	  ○ Emergency Interruption
	• Public Appeals
		• Instruct shippers & storage operators to amend storage flows
		• Distribution Network Utilisation
		  ○ Emergency Interruption
		• Public Appeals
			• Emergency Spec Gas
			• NTS Linepack
			• Distribution Network Utilisation
			  ○ Distribution Network Storage
			  ○ Emergency Interruption
			• Public Appeals

2	• National Grid Gas plc's participation in the OCM will be suspended • Maximise Supplies • Firm Load Shedding • Public Appeals	• National Grid Gas plc's participation in the OCM will be suspended • Maximise Supplies • Firm Load Shedding • Public Appeals	• National Grid Gas plc will continue to participate in OCM • Maximise Storage • Firm Load Shedding • Public Appeals
3	• Public Appeals • Allocation & Isolation	• Public Appeals • Allocation & Isolation	• Public Appeals • Allocation & Isolation
4	• Restoration		

Appendix 6
Shipper / Supplier & Gas Consumer DSR Service Agreement – Items for consideration

The purpose of this paper is to provide some suggested points for gas Shippers/Suppliers and Gas Consumers to consider when developing a DSR Service Agreement. The content detailed below is intended to provide guidance on what might be expected to be included within such an agreement. However this guidance is not intended to be either prescriptive or exhaustive.

The words in "Bold" below are defined within the DSR Methodology and therefore their use within any Service Agreement would simplify alignment between the agreement and the Methodology.

1.1. The DSR Service Agreement may contain the contractual arrangements for the Shipper/Supplier & Gas Consumer:

> For the reduction in gas quantity offtaken at a relevant Site (**Eligible DMC**) – Shipper/Supplier to Gas Consumers contractual arrangement. In exchange for the payment of a service fee the Shipper (following instruction by the relevant Gas Consumer, and in some cases directed through the relevant Supplier) will agree to post a **DSR Offer**, on behalf of the Gas Consumer, to reduce offtake from the gas network. In return the Gas Consumer commits to delivering on the agreed offtake reduction if called on to do so by the relevant Shipper/Supplier. These arrangements will be undertaken within the terms provided in the **DSR Methodology**, and secured upon the **DSR Offer** being accepted on the 'On the day Commodity Market' (OCM).

1.2. The Gas Consumer (in some cases through its Supplier) will work together with their Shipper to enable the Shipper to post the relevant **DSR Offer**(s) onto the OCM. **DSR Offers** may be placed, updated or withdrawn, on the OCM at any time up to the declaration of a Gas Deficit Emergency (GDE) Stage 2 as defined within the UNC section Q3.2 – 'Gas Deficit Emergency'.

1.3. Any DSR Service Agreement should be consistent with the provisions set out in the **DSR Methodology**, relevant Uniform Network Code (UNC) provisions and the OCM Market Rules.

1.4. **The DSR Service Agreement – Points for Consideration**

1.4.1. Prior to participating in the **DSR Mechanism** on behalf of the **Eligible DMC**, the relevant Shipper and Gas Consumer (in some cases through the Supplier) may consider entering into a **DSR Service Agreement** which may set out standardised Heads of Terms which define;

a. Arrangements for the Registered User (Shipper) to post **DSR Offers** on behalf of the Gas Consumer, for the **Eligible DMC** onto the OCM;
b. Information provision, communication arrangements and timings of communications;
c. Commercial / financial settlement arrangements;
d. Liabilities for non-compliance arrangements;
e. The nature of the **DSR Service** being provided;
f. Details of the Shipper's Service fees;
g. Details of Liabilities; and
h. **DSR Offer Notice** arrangements.

1.5. **DSR Offer Notice**

1.5.1. In respect of each specific **DSR Offer**, the relevant Shipper and relevant Gas Consumer (in some cases through the Supplier) may prepare and agree a **DSR Offer Notice** which will specify:

a. Price p/kWh;
b. Volume (kWh);
c. Required lead time between **DSR Offer** acceptance by National Grid and commencement of the offtake rate reduction at the **Eligible DMC** (which will include any Shipper to Gas Consumers notification time period);
d. Timing of **DSR Offer** availability within the relevant gas Day (i.e. Evergreen, reducing volume or only during a specified period ;
e. Location (UNC Supply Point ref number);
f. Gas Consumer contact details;
g. For **'multiday' DSR Offer,** specify the number of gas Days included in the Offer;
h. 7 day Profiling of **Daily Offer** volume and/or price details e.g. week / weekend profile to account for reduction in demand at weekends;
i. Indicate whether the 7 day profile of daily offers should be continuously reposted automatically.

1.5.2. This information may be used by the Registered User (Shipper) at an **Eligible DMC** to place the **DSR Offer(s)** onto the OCM.

1.6. Where a **DSR Offer** is accepted by National Grid on the OCM;

1.6.1. The Shipper will notify the Gas Consumer (in some cases through the Supplier) of the requirement to reduce their notified End of Day (EOD) gas offtake by an amount at least equal to the accepted **DSR Offer**.

Demand Side Response - Example of DSR Service Agreement – Heads of Terms

Detailed below are points to consider when developing a DSR Service agreement. It should be noted that the list is not intended to be prescriptive and is not exhaustive.

a.	The DSR Service	Description of the DSR Service agreed
		Responsibilities
b.	DSR Offer Notice Arrangements	Preparing each DSR Offer Notice (for each tranche) – specify volume, duration , product type (e.g. daily/multi-day)
		Offer Price – (Value of Lost Load (VoLL) price + Gas price + Admin fee)
		Exercise Lead-times
c.	Operational Arrangements	Communication and Response Timescales
		Submitting/Amending/Revising DSR Offers
		Site Maintenance Notification
		Notification of accepted DSR Offer and response to exercise
		Contact information etc.
d.	Liabilities	Failing to reduce Offtake
		Errors submitting DSR Offers
e.	Payment and settlement Arrangements	Payment timings

Appendix 7
DSR End to End Process

The DSR mechanism features two principle contractual arrangements:

Part One – For delivery of the physical action by the Gas Consumer to reduce the gas quantity offtaken, at a relevant Site, associated to the DSR Offer – this is the Shipper/Supplier to Gas Consumer contractual arrangement. On behalf of the Gas Consumer (in some cases through instruction by the Supplier) the Shipper will agree to place an offer onto the DSR mechanism, which reflects the agreed DSR volume and price for the Gas Consumer's reduction in offtake of. In return the Gas Consumer commits to honouring and delivering on the agreed offtake reduction if called on to do so by the relevant Shipper. *Requirements for this aspect of the DSR mechanism may be defined by the Shipper, Supplier or Gas Consumer through their contractual (gas supply contract) arrangements*; and

Part Two - For the procurement of the gas which would otherwise have been offtaken by the Gas Consumer which is now associated with the DSR Offer – this is the Shipper to National Grid contractual arrangement. Under prescribed parameters and criteria, the Shipper will offer to sell "title" to gas (associated to the DSR Offer) to National Grid in its Role as the Residual Balancer. *The requirements and provisions for this aspect of the DSR mechanism will be set out within the DSR Methodology and the Uniform Network Code (UNC).*

Determining what amount of DSR to Offer

To be eligible to participate in the DSR Mechanism the Gas Consumer's site must consume enough gas per year to be classified as a Daily Metered Component 'DMC' customer. A 'DMC' customer is a Gas Consumer with a site (supply point), which has a yearly demand of greater than two million therms (2M tpa). Eligible sites also have to be able to offer a DSR Offer quantity of 100,000 kWhs/day in any one DSR Offer Notice (e.g. tranche of DSR volume).

The first step for an eligible Gas Consumer who wishes to participate in the DSR mechanism, is to decide what level of Demand Side Response energy quantity they are prepared to make available and at what price (depending on how the Gas Consumer values the cost associated with the reduction of specific quantities of their gas supply). Eligible sites are permitted to make multiple separate DSR offers which can be priced individually (tranches); all DSR Offers must meet the minimum trade volume criteria.

The details, criteria and arrangements associated with the DSR energy quantity to be offered may be set-out and be discussed with the site's registered Shipper (in some cases through instructions with the relevant Supplier).

Posting a DSR Offer

Where the Shipper, (Supplier) and Gas Consumer agree that the Shipper will post the DSR Offer(s) on behalf of the Gas Consumer; the Shipper will place the agreed DSR values in the form of a DSR Offer(s) onto the DSR mechanism. The DSR mechanism will be facilitated through the 'On the day Commodity Market' (OCM) - Locational Market. As a Network Code Signatory the site's registered Shipper is the only party permitted to enter a DSR Offer(s) onto the DSR mechanism on behalf of the relevant Gas Consumer associated with that specific site. In accordance with arrangements agreed with the Gas Consumer, the Shipper may post update or withdraw DSR Offer(s), at any time up to the declaration of a Gas Deficit Emergency (GDE) Stage 2.

Accepting the DSR Offer

DSR Offers may only be accepted by National Grid, where a Gas Deficit Warning (GDW) has been declared, and is in effect, and only during the DSR Period (the period between GDW and the end of GDE stage 1). A DSR Offer may be posted and accepted for a single gas Day or for multiple gas Days (as a Multiday trade - this may not exceed 7 days).

In respect of determining which offers to accept National Grid will access all of the available DSR Offers, together with all other market offers, posted for the relevant gas Day, across all of the OCM platform markets (including OCM Title, Physical, and Locational) and National Grid will accept the lowest price offer available first.

Where National Grid accepts a DSR Offer for the gas Day:

- The Shipper (in some cases through the Supplier) will notify the Gas Consumer of their requirement to physically reduce their gas demand (as previously notified by their End Of Day (EOD) offtake) by an energy quantity at least equal to the accepted DSR Offer .The system balancing clearing position, for both the Shipper and National Grid, in its Residual Balancing role, will be adjusted to reflect the completed gas trade, affected through accepting the DSR Offer.
- The Shipper will revise the relevant Gas Consumer's site/sites' nomination quantity, through a Physical Re-nomination, which will reflect the title trade (for the DSR Offer) energy quantity.

Where National Grid accepts a Multiday DSR Offer it will be in accordance with existing arrangements set out in the UNC Transportation Principles Document (TPD) Section D4.

Accepted DSR Offers will be treated in a similar manner as other actions National Grid undertakes for system balancing purposes, and, as such, all accepted DSR Offer prices and energy quantities will feed into the calculation of the cash-out prices and balancing neutrality processes for the relevant gas Day.

Payments for the accepted DSR Offers will be paid to the Shipper by National Grid within the same timescales set-out for other Market Balancing Actions as detailed in Section S of the UNC TPD. The Shipper will then pay the Gas Consumer the agreed payment for the accepted DSR Offer(s).

Arrangements relating to the day in which a GDE Stage 2 is declared

Where National Grid accepts a DSR Offer for a gas Day in which a GDE Stage 2 is subsequently declared; the accepted DSR Offer will continue to be required on each following day, until revoking instructions are issued by the National Emergency Co-ordinator (NEC).

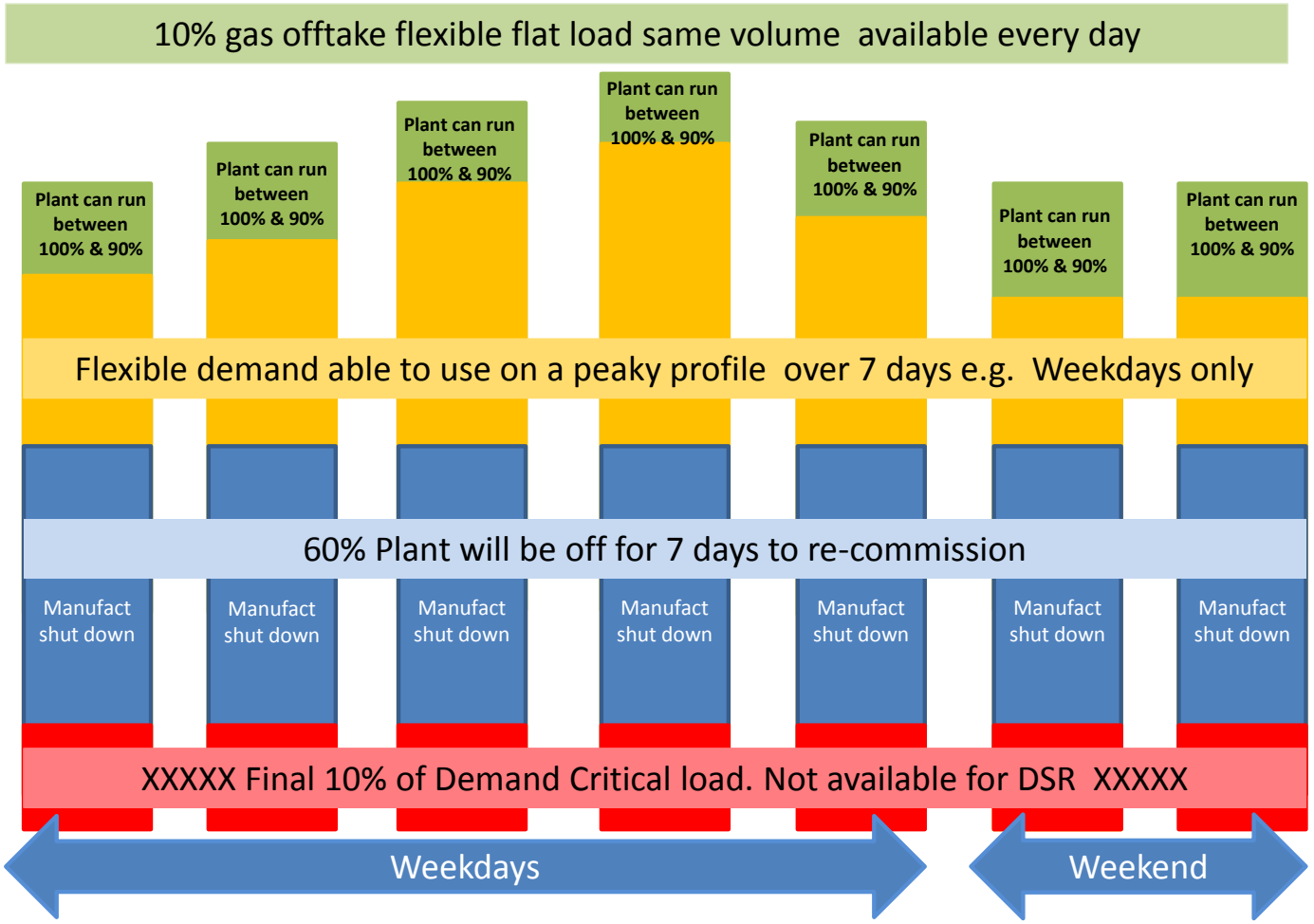
Payment for such actions will be:

- Settled for the Day, or Multiday duration, that the DSR Offer contract was accepted, payment will be made in accordance with the accepted DSR Offer price. The standard settlement period will apply as detailed in Section S of the UNC TPD i.e. end of the month in which the DSR Offer is accepted plus 23 working days.
- For subsequent Days payment will be at the 30 day average System Average Price (SAP) for the accepted DSR energy quantity, this will be made for the DSR energy quantity until the site is subject to an instruction to Firm Load Shedding (FLS) it's remaining offtake energy quantity as part of the Stage 2 emergency process.
- Where the Consumer's site is instructed to Firm Load Shed, the involuntary DSR payment arrangements as set out in the Ofgem Significant Code Review on Security of Supply Conclusions document will then apply.

In the event that an accepted Multiday Offer contract's duration runs beyond the point at which the site is subject to an instruction to Firm Load Shedding, the payment associated with the accepted DSR Offer will continue to be paid in accordance with the agreed DSR Offer price until the accepted contract's duration has concluded.

Appendix 8
DSR Product Options for available DSR energy quantities at an Eligible site

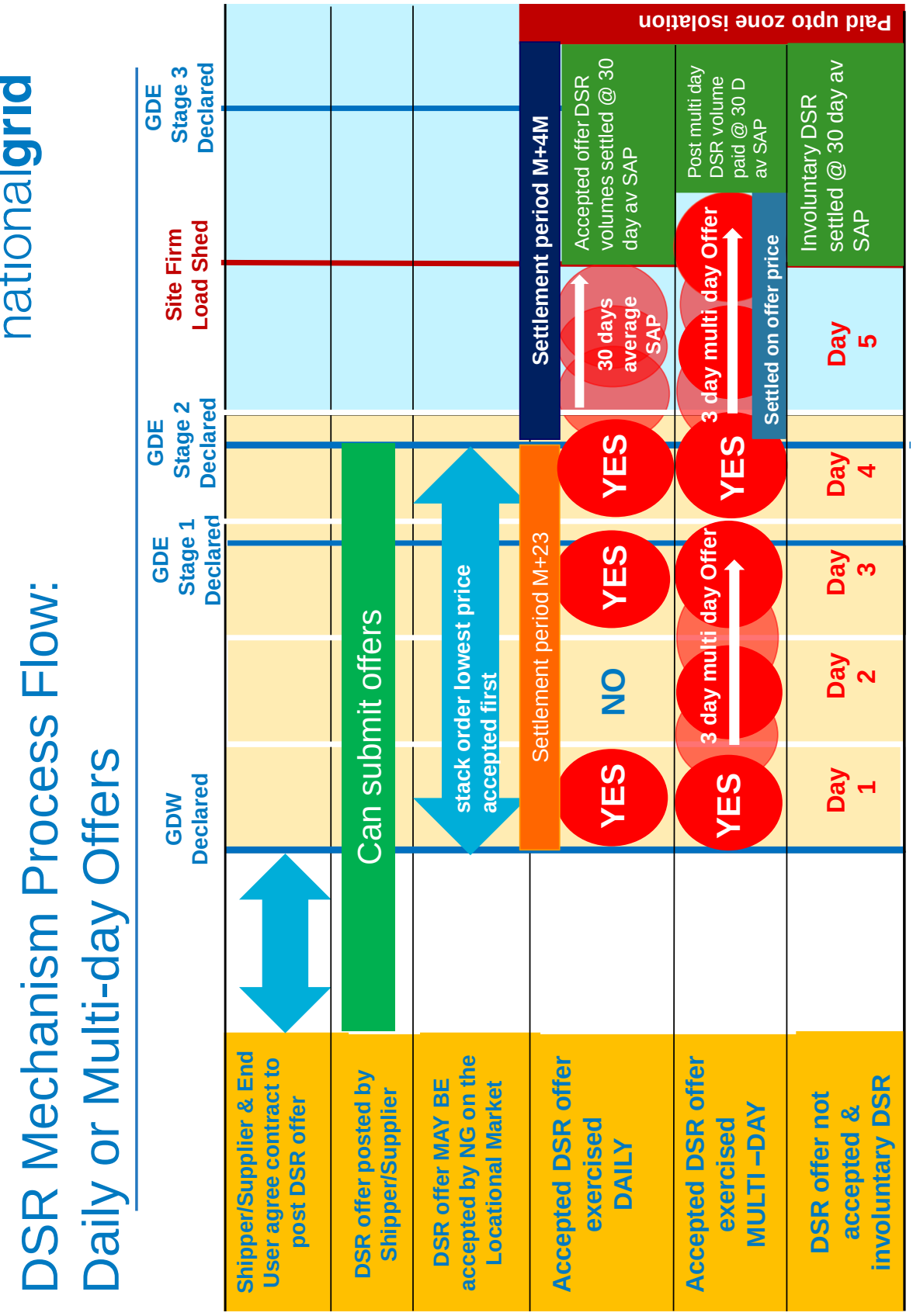
When determining which DSR Product best meets the requirements of your site's daily and weekly offtake profile you may wish to consider the following options:



Sites Available DSR tranches for a day	Recommended DSR Product Option
10% gas offtake flexible flat load With the same volume available every day **Tranche 1**	**Daily Product** – Flat load - posted each day for the same volume . May be posted in 'strips' of 7 days or posted on a daily basis. The 7 day strip is designed for ease of posting the same offer for each day, however the Offer may only be accepted for on each day exclusively and not one 7 day duration.
Flexible demand able to use on a peaky profile ? e.g. Weekdays only **Tranche 2**	**Daily Product** – Peaky load - Offer can be posted on a daily basis or posted in a 7 day 'strip' of offers with varying volumes offered depending on the offtake profile through the 7 days. As above these offer will be accepted for each day exclusively.
60% of Demand Plant will be off for 7 days to re-commission **Tranche 3**	**Multiday Product** - committed for posted durations. Max duration of contract 7 days (may be posted via automatic rolling offer, or posted as a one off closer to the relevant 7 day contract) Required to reduce by the same volume for each day of the contract. Will be accepted for the contracted duration .
Final 10% of Demand Critical load	No available for DSR

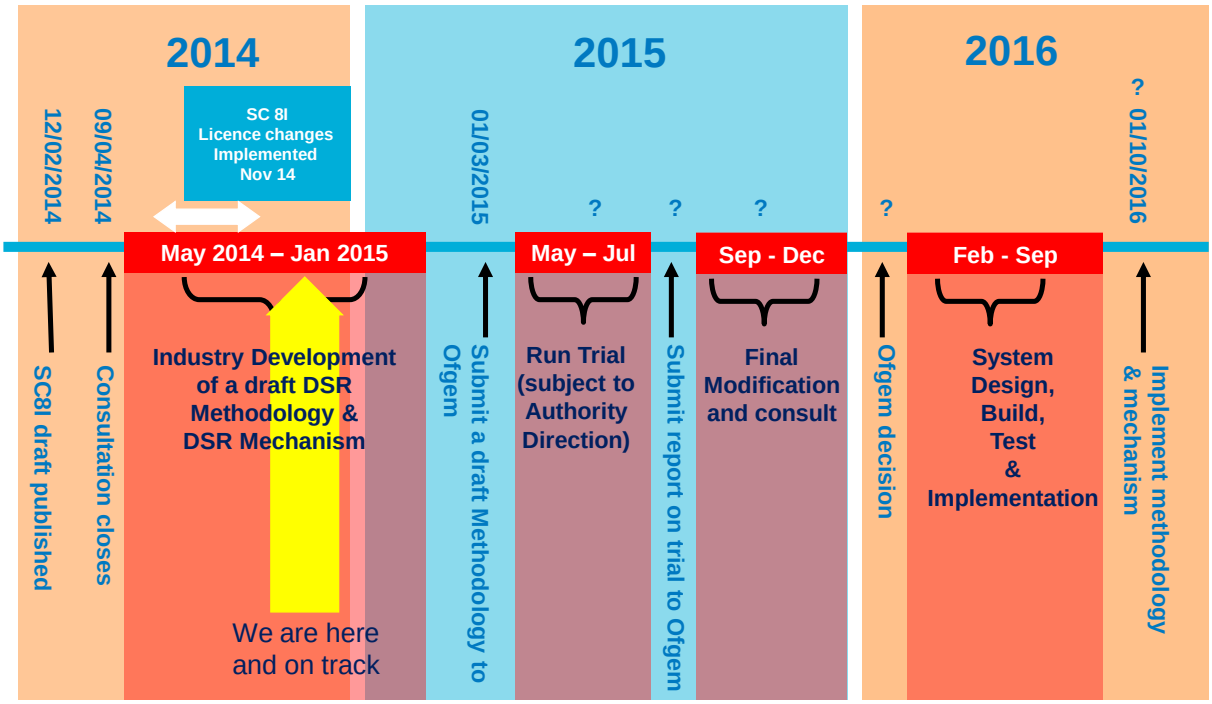
Both Daily and Multiday DSR Offers may be posted and automatically replicated, on a rolling 7 day strip. This may reduce the workload required to post DSR Offers.

Appendix 9
DSR Mechanism Process Flow

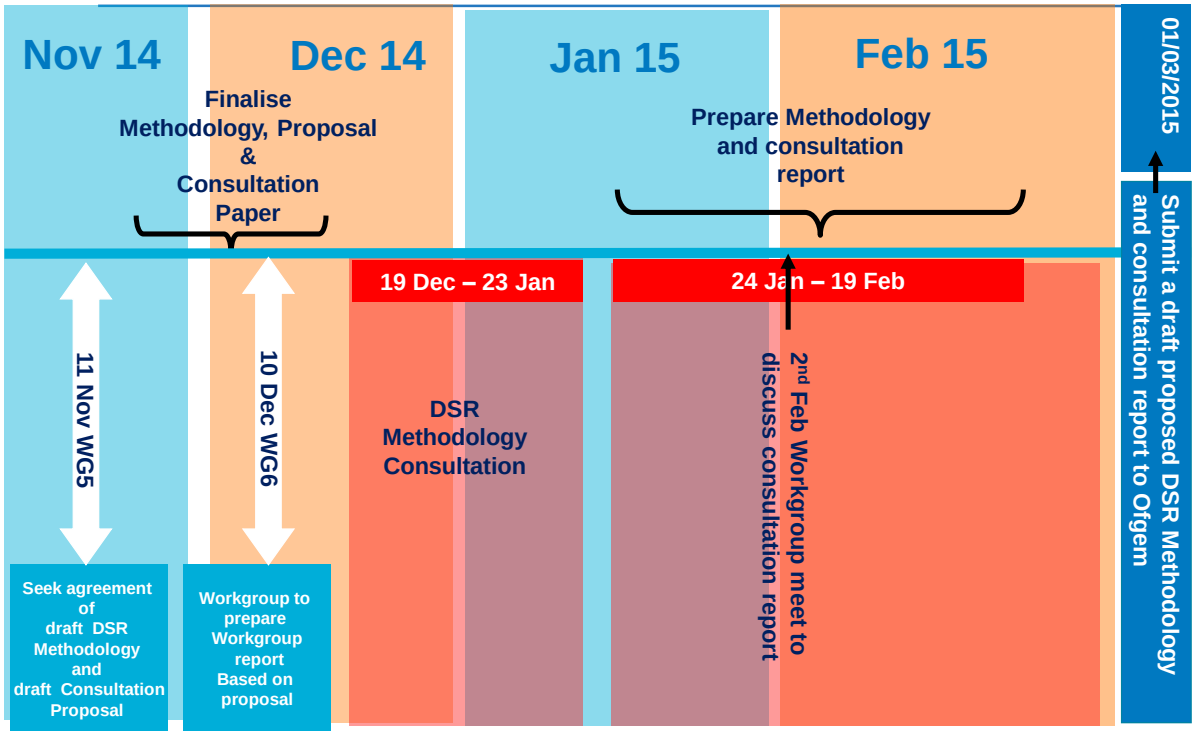


Appendix 10
Timescales for the development of the DSR Framework and Methodology

DSR Methodology and Mechanism Timescales



DSR Methodology Consultation Timescales



Consultation Schedule

Task	Action	Delivery date
DSR Consultation	Consultation Opens	19 December 14
	Consultation Closes	23 January 15
	Initial Consultation Responses issued to Workgroup	27 January 14
Next DSR Workgroup session	To discuss consultation responses and DSR Methodology report	02 February 15
DSR Methodology Consultation Report	Submitted to Ofgem	01 March 15