

Gas Security of Supply Significant Code Review

Final policy decision

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Overview:

The aim of the Gas Security of Supply Significant Code Review is to reduce the likelihood, severity and duration of a gas supply emergency. We want to ensure that in an emergency the market rules provide appropriate incentives on gas shippers to balance supply and demand. We also propose a mechanism for paying large consumers if they are able to reduce their demand before an emergency. This is intended to avoid or minimise an emergency and protect consumers that incur high costs when interrupted.

This document describes our policy decision on a demand-side response mechanism, the principles we think it should meet and how we plan to develop it. It also gives an overview of our final policy decision for cash-out reform, and our proposed decisions on how our reforms will work in practice.

Alongside this document, we are publishing draft business rules and legal text for code and licence changes. We invite comments on this drafting. Our priority is to ensure it meets the intent of our policy decisions for cash-out reform and demand-side response.

Context

We began our Significant Code Review (SCR) into gas security of supply in January 2011, in response to concerns with the gas emergency arrangements. In July 2012 we published our proposed final decision to reform the commercial arrangements that would apply in an emergency. At the same time we provided our Gas Security of Supply Report to Government, assessing the risks and resilience of the gas market and considering some further measures that could enhance security of supply.

In response, Government considered whether further measures to support gas storage were necessary. This study found that it would not be cost effective to subsidise investment in new storage. We and Government both agree that efficient price signals are necessary to enhance security of supply.

Since the publication of our proposed final decision, we have received feedback from gas shippers, consumers and gas transporters – via consultation responses and meetings. In response, we engaged extensively with stakeholders to understand their concerns. They suggested a demand-side response (DSR) mechanism, and we have examined how this could be incorporated into our proposals.

In July 2013, we published a letter updating our proposed final decision for cash-out reform. This also set out our commitment to exploring a DSR mechanism.

Associated documents

Consultation on Business Rules and Legal Text – Gas Security of Supply Significant Code Review, February 2014:

<https://www.ofgem.gov.uk/publications-and-updates/gas-security-supply-significant-code-review-consultation-business-rules-and-legal-text>

Impact Assessment for Final Policy Decision – Gas Security of Supply Significant Code Review, February 2014:

<https://www.ofgem.gov.uk/publications-and-updates/gas-security-supply-significant-code-review-impact-assessment-final-policy-decision>

Updated Proposed Final Decision – Gas Security of Supply Significant Code Review, July 2013 (ref 128/13):

http://www.ofgem.gov.uk/Markets/WhIMkts/CompandEff/GasSCR/Documents1/130723_GasSCR_upfd.pdf

Demand-Side Response Tender Consultation – Gas SCR, July 2013 (ref 130/13):

http://www.ofgem.gov.uk/Markets/WhIMkts/CompandEff/GasSCR/Documents1/130723_GasSCR_DSRtender.pdf

Gas Security of Supply Report, November 2012:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=3&refer=Markets/WhIMkts/monitoring-energy-security/gas-security-of-supply-report>

Proposed Final Decision – Gas SCR, July 2012 (ref 111/12):

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=85&refer=Markets/WhIMkts/CompandEff/GasSCR>

Impact Assessment for the Proposed Final Decision – Gas SCR, July 2012 (ref 112/12):

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=91&refer=Markets/WhIMkts/CompandEff/GasSCR>

Draft Policy Decision - Gas SCR, November 2011 (ref 145/11):

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=46&refer=Markets/WhIMkts/CompandEff/GasSCR>

Initial Consultation - Gas SCR, January 2011 (ref 02/11):

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=1&refer=Markets/WhIMkts/CompandEff/GasSCR>

Launch Statement – Gas SCR, January 2011:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=2&refer=Markets/WhIMkts/CompandEff/GasSCR>

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Executive summary

The GB gas market has historically provided secure supplies, and it is likely to remain resilient to all but the most extreme shocks. We have never experienced a gas deficit emergency in GB, and the probability of one remains low. However, it is prudent to ensure that the market arrangements provide appropriate incentives to maintain secure supplies. If the supply of gas to GB is insufficient to meet demand a gas deficit emergency will occur. The aim of the Gas Security of Supply Significant Code Review (Gas SCR) is to reduce the likelihood, severity and duration of an emergency.

This document describes our final policy decision for cash-out reform under the Gas SCR. We want to ensure that in an emergency, market rules appropriately incentivise gas shippers to balance supply and demand. We also propose a centralised demand-side response (DSR) mechanism. This would reveal the cost of interruption for large consumers and pay them for reducing their demand before an emergency.

Cash-out reform

Gas shippers who do not balance their supply and demand are subject to cash-out charges. Under current arrangements, cash-out prices are frozen in an emergency. The emergency would be managed by National Grid instructing domestic gas suppliers to maximise flows and, where necessary, interrupting consumers.

Given GB's increasing reliance on imports, managing an emergency by instructing domestic supplies to flow may not be enough to resolve an emergency. Furthermore, under current arrangements the cost of interrupting consumers (including domestic consumers) involuntarily is not factored into the cash-out price. This means the risks of interruptions in an emergency sit with consumers who are poorly placed to manage them. Thus shippers do not account for the full value consumers place on maintaining their gas supplies.

In July 2013, we published our proposals for cash-out reform under the Gas SCR. Our rationale for cash-out reform remains as we set out in July. We still think cash-out reform will improve incentives on shippers and reduce the likelihood or severity of an emergency. Key aspects of our proposals are:

- Cash-out is unfrozen and dynamic throughout an emergency.
- The cost of network isolation is priced at the estimate of a domestic consumer's value of lost load (VoLL) – £14/therm.
- Consumers are paid for the involuntary DSR service they provide if interrupted in an emergency.

On this basis, we have developed detailed business rules to implement cash-out reform.

Demand-side response

The gas market could benefit from large consumers reducing demand voluntarily ahead of an emergency. These benefits include:

- Reduced likelihood of entering an emergency.
- Interruptions in price order – rather than size order as in an emergency.
- Market prices (including cash-out) better reflect the value large consumers place on secure supplies, and so provide appropriate incentives for shippers.
- Large consumers paid for providing this service.

Stakeholders have expressed doubts that a market for voluntary interruption will emerge of its own accord. An emergency has a low probability of occurring and many consumers are unfamiliar with DSR. Large consumers have also told us that they are more willing to be interrupted for genuine safety reasons, than for commercial optimisation by shippers. Several stakeholders suggested the development of a centralised DSR mechanism to overcome these barriers, and we have examined this.

We are proposing the development of a centralised mechanism for DSR, run by the system operator, National Grid Gas (NGG). We envisage this kick-starting the market for commercial interruption in the medium to long term.

We also propose a licence obligation for NGG to develop a DSR methodology and consult on this. This obligation will set objectives and principles we think the methodology should meet. We would decide whether to approve it with regard to these principles, before NGG could implement DSR. The methodology must:

- create a route to market for additional DSR and not prevent commercial interruption from being agreed between suppliers and large consumers;
- reveal the price of DSR and factor this into cash-out; and
- minimise distortions and be efficient, cost effective and compatible with existing market arrangements.

Consultation

This document contains our final policy decisions. We are consulting on:

- i. business rules on cash-out reform;
- ii. associated code drafting to implement cash-out reform;
- iii. shipper and supplier licence drafting for the implementation of cash-out; and
- iv. a draft licence obligation on NGG to proceed with a DSR mechanism

Consultation responses to these documents should be sent to wholesale.markets@ofgem.gov.uk by 9 April 2014.

Next steps

We will consider responses to our consultation on the legal text to implement our policy decision and plan to issue statutory consultation on licence changes by summer 2014. We intend to issue our Direction for cash-out reform in summer 2014, to allow system changes to be implemented ahead of winter 2015/16. If we proceed to implement the DSR licence condition, we expect NGG to submit the DSR methodology for approval by March 2015. Subject to time required for system changes, we are aiming for full implementation of the DSR mechanism ahead of winter 2016/17, though would support earlier implementation if achievable.

1. Introduction

Background

Importance of security of supply

1.1. Natural gas is a crucial part of the GB energy mix. It will continue to be into the future. Ofgem's principal objective is to protect the interests of present and future consumers. A key interest for consumers is maintaining an uninterrupted supply of gas.

1.2. Historically GB relied on domestic gas production to meet its entire demand. However, domestic sources are declining and GB increasingly relies on imports from Norway, continental Europe and global Liquefied Natural Gas (LNG) markets. Whilst there is some uncertainty about GB's supply/demand outlook in the future, this trend of increasing import dependence is expected to continue.

1.3. Since liberalisation in the 1990s, the GB gas market has delivered secure supplies and substantial investment in new import infrastructure. We have not had an emergency due to a lack of gas supply and the probability of one occurring remains low. Nevertheless, it is important not to be complacent and we need to ensure our market arrangements are resilient to a range of future scenarios. In particular, we need to ensure that the prices within GB provide both appropriate incentives on market participants, and sufficient signals to attract gas imports when we need them.

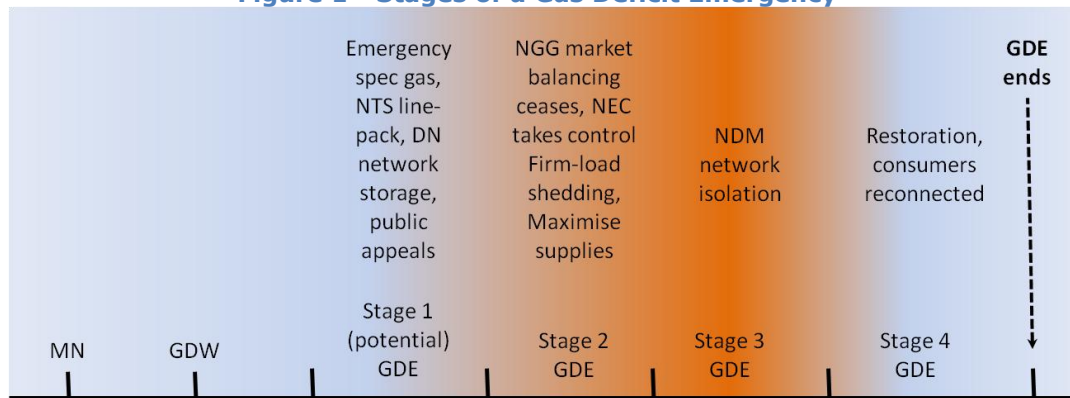
1.4. Failure to adequately secure gas supplies to meet demand may result in an emergency and consumer interruptions. For most domestic households a loss of gas supply would mean a loss of access to essential services such as heating and cooking. Clearly this could have severe consequences, particularly during winter and for the most vulnerable consumers. For industries reliant on gas as a fuel or feedstock, a loss of supplies could mean a major loss of output and possibly significant damage to machinery and equipment. A loss of gas supply for gas-fired power stations could have knock on impacts on electricity security of supply. Ensuring GB's gas security of supply is adequately protected is therefore of vital importance.

The current arrangements

1.5. In GB shippers pay imbalance (cash-out) charges if they do not take the same amount of gas off the system as they put in. Where a shipper puts more gas onto the system than they take off, they are "long". Where they take off more than they put onto the system they are "short". Cash-out charges reflect the costs to the System Operator (SO) of balancing the system. They are generally more expensive than the costs the shipper would have faced had they balanced their position on the market.

1.6. If the system overall is substantially “short”, the supply of available gas would be insufficient to meet demand and a Gas Deficit Emergency (GDE) could be declared. Figure 1 below sets out the various stages of a GDE. Prior to the emergency the SO would issue a series of warnings that supplies are running low. If the situation worsens, and the mitigating actions taken by the SO are insufficient, an emergency would be declared and consumers could be interrupted. Daily metered (DM) consumers (ie, large consumers) would be interrupted first during a process known as firm-load shedding. If this fails to resolve the problem, non-daily metered (NDM) consumers would be interrupted as parts of the network would need to be physically isolated.

Figure 1 - Stages of a Gas Deficit Emergency¹



Ofgem’s concerns

1.7. Ofgem has had long standing concerns with the current cash-out arrangements and these were set out in detail in Project Discovery (2010)². At present cash-out prices would be frozen following the declaration of a Stage 2 GDE, and domestic supplies instructed to flow at maximum. Freezing cash-out prices means that the incentive to bring gas to GB may not reflect the condition of the system. For example this could mean they are not sufficiently sharp to attract imported gas. As GB becomes increasingly dependent on imported gas, instructing domestic gas supplies to flow may not be sufficient on its own to meet demand during a GDE.

1.8. Current arrangements do not assign a cost to consumer interruptions. This means shippers do not currently face the true costs of an emergency. A key principle underlying cash-out charges is that they should reflect the cost to the SO of balancing the system. If the SO is forced to curtail consumers during an emergency

¹ MN – Margins Notice; GDW – Gas Deficit Warning. Full details of the National Gas Emergency Plan can be found here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65596/6913-national-emergency-plan-gas.pdf

² <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=73&refer=Markets/WhlMkts/monitoring-energy-security/Discovery>

in order to balance the system, we consider this is a balancing action that should be priced and paid for where appropriate.

1.9. Further, under current arrangements the interruption of NDM consumers would result in shippers' imbalances improving (becoming longer or less short).³ This undermines the incentives on shippers to meet consumer demand.

1.10. Lastly, encouraging large industrial and commercial (I&C) consumers to reduce their gas demand at times of system stress has repeatedly been identified as offering potentially significant security of supply benefits.⁴ However, concerns have emerged that there could be barriers obstructing the provision of DSR from these I&C DM consumers. Our Gas Security of Supply Report⁵ to Government in 2012 identified a DSR auction as one of a list of potential options that could further enhance security of supply.

Our Gas SCR final policy decision

1.11. This document sets out our proposed decision to proceed with the introduction of a DSR mechanism. This is subject to NGG designing a methodology in line with the principles set out in this document. This methodology would be subject to Ofgem approval.

1.12. This document also sets out our final policy decision for cash-out reform – as described in our July 2013 letter. It covers key issues we have considered in developing draft business rules and legal text to implement cash-out reform.

1.13. The remainder of this document is structured as follows:

- **Chapter 2** sets out our proposed decision on whether to proceed with a DSR mechanism, the principles we think a DSR mechanism should meet, and our initial views on key design features following consultation. It also sets out next steps on DSR.
- **Chapter 3** reiterates our proposed decision on cash-out reform and our rationale.
- **Chapter 4** describes our positions on key issues for implementing our final policy decision for cash-out reform. It also sets out next steps in implementing these changes.

³ This is not the case for DM consumers who are currently subject to the Emergency Curtailment Quantity (ECQ) arrangements. Our reforms look to effectively extend these to incorporate NDM interruptions as well.

⁴ See for example Pöyry's 2010 report on gas security of supply for Government. The report can be found here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47872/114-poyry-gb.pdf

⁵ <https://www.ofgem.gov.uk/publications-and-updates/gas-security-supply-report>

1.14. Alongside this document we have published an impact assessment which quantitatively and qualitatively considers the impact of our proposals.

1.15. We have published for consultation:

- v. business rules on cash-out reform;
- vi. associated code drafting to implement cash-out reform;
- vii. shipper and supplier licence drafting for the implementation of cash-out; and
- viii. a draft licence obligation on NGG to proceed with a DSR mechanism

1.16. We invite comments on this drafting. Our priority is to ensure the proposed drafting meets the intent of our policy decision for cash-out reform and DSR. Responses should be sent to wholesale.markets@ofgem.gov.uk by 9 April 2014.

1.17. We are holding a workshop on 7 March 2014 to discuss questions on our impact assessment, business rules and legal drafting. Those interested in attending should contact wholesale.markets@ofgem.gov.uk.

2. Policy decision on DSR

Chapter Summary

We have decided to proceed with the development of a DSR mechanism through development and consultation on a detailed methodology and subject to trial. This chapter sets out the rationale for this decision, the principles we think the DSR mechanism should meet and our current view on key design features.

2.1. During the SCR process, several stakeholders suggested that a centralised DSR mechanism could have merit. In our 2012 report to Government on Gas Security of Supply, we also noted a DSR mechanism as an option that could further enhance security of supply in addition to cash-out reform. In July 2013 we issued a consultation on a DSR mechanism, and have held several workshops to discuss key issues.

Rationale for DSR

2.2. A key part of our cash-out proposals is attaching a price to consumer interruptions that reflects the value consumers place on maintaining their gas supplies – their Value of Lost Load (VoLL). This is important, as it allows prices to reflect the true cost of interruptions. This creates incentives for shippers to take actions consistent with the value consumers place on secure gas supplies.

2.3. DM consumers could reveal the cost of demand interruptions and provide DSR organically in the market. This would be through various bilateral agreements as listed below (although not all options will be available to each consumer):

- Sign an interruptible contract.
- Sell gas directly on to the market (if hold a shipper licence).
- Sell gas through shipper / broker agreement.
- Sell gas to NGG through a multiday trade.
- Choose not to offtake gas in daily nominations.

2.4. Demand side stakeholders expressed doubts that a market for interruptible contracts would emerge. Large consumers highlighted a potential lack of trust between shippers and consumers. Large consumers said that they did not want to be interrupted for commercial purposes but only in near emergency circumstances to protect security of supply. They had concerns that agreements with shippers could be utilised more frequently in response to commercial drivers rather than genuine system tightness. Therefore they only wanted DSR to be exercised by the SO.

2.5. We recognise that energy is not necessarily the core business of I&C consumers, so they may have limited interest in commercial interruption. However, this does not necessarily imply that these consumers would continue manufacturing at all costs, even when the cost of doing so significantly exceeds the revenue they could obtain by interrupting their own demand.

2.6. Whilst stopping production in some sectors may be prohibitively high, this is unlikely to be the case across all consumers. For example, some I&C consumers may have flexible processes and stock available to fulfil some proportion of future orders and therefore it could be inefficient to continue to manufacture at very high gas prices. Therefore a centralised DSR mechanism would help ensure that I&C consumers calculate their value of lost load ahead of any emergency or tight gas market.

2.7. Secondly, in the event of a GDE under current arrangements, sites are disconnected in size order during firm load shedding. This is inefficient with respect to the economic costs incurred by society. It does not reflect the differing values that consumers place on avoiding interruption. The cost of interruption varies between consumers, and is not necessarily a function of size. Reordering interruptions in a more economic and efficient manner – ie, in price order not in size order – would result in overall net benefit to GB.

2.8. Finally, as a GDE is a low-probability high-impact event, interruptible contracts may never emerge if market participants deem a GDE an extremely unlikely event. However, if and when a tight market materialises there would be strong incentives for DSR contracts to emerge in response to price. Depending on the speed with which a GDE materialises, it may not be possible for market participants to organise commercial interruption in large volumes before involuntary disconnections occur. This may lead to chaotic negotiations between shippers and large consumers. This could make it more difficult to achieve interruptions in an efficient order which reflects the differing value large consumers place on their gas supplies. Therefore, a centralised DSR mechanism could provide a guarantee that DSR emerges, and does so in a more efficient manner.

Benefits, Costs and Unintended Consequences

2.9. In the tender consultation document in July 2013 we set out the qualitative costs and benefits of introducing a DSR mechanism. These are summarised in Table 1 below:

Table 1 – Summary of DSR costs and benefits

Benefits of Tender	Costs of Tender
Sends the correct price signals to the market - cost of interruption and value of lost load priced into cash-out	Admin costs for all years DSR mechanism is running – ie, irrespective of GDE occurring
Helps facilitate and ensure more economic interruption of demand and more gas security for those that value it most	Costs incurred when DSR utilised
Ensures consumers receive appropriate payment if they are interrupted	Centralised approach not necessarily most efficient – eg, could crowd out commercial interruption
Possibly overcomes potential barriers to commercial DSR (consumer-shipper trust issues, excessive complexity)	Unintended consequences – eg, removing liquidity from the on-the-day commodity market (OCM) (discussed in the section below)
Could kick-start commercial interruption	
Greater certainty over how much DSR comes forward	

2.10. In the consultation Ofgem set out three options ('strawmen') for a potential DSR tender design. In response to our consultation NGG put forward an alternative proposal for design of the DSR mechanism. These are discussed in more detail in the impact assessment and associated report by Pöyry Consulting⁶.

2.11. Pöyry Consulting undertook a cost benefit analysis to quantitatively assess the value of DSR under these design options in two scenarios, as set out in Table 2. The first scenario was National Grid's Gone Green Future Energy Scenario (FES). The second was a 'High Demand' scenario in which the FES Slow Progression demand was used.

Table 2 – Cost Benefit Analysis

NPV of various reform options (£ million to 2030)							
Policy scenario	Current	Cash-out reform	Cash-out reform + NGG platform	Cash-out reform + Strawman 2 (exercise only)		Cash-out reform + Strawman 3 (inc option fees)	
Gas-fired power station eligibility	N/A	N/A	N/A*	Inc.	Exc.	Inc.	Exc.
Gone Green	£0.0	£0.0	-£34.3	-£41.0	-£41.0	-£91.3	-£162.3
High Demand	£0.0	£2.7	£37.5	£30.8	£20.5	-£35.5	-£89.3

*N/A for modelling purposes only

⁶ Published here:

<https://www.ofgem.gov.uk/ofgem-publications/85990/poyrygasscrdsrbcfinalreportv20.pdf>

2.12. The quantitative results suggest that the higher the risks of a security of supply event in gas, the higher the benefits of implementing a centralised DSR solution are likely to be. Under certain designs, the net benefits outweigh the cost of implementation in the High Demand scenario. However, the quantitative results only show the impact of more efficient use of DSR. They do not capture the dynamic implications of either sharpening price signals or transferring risks from consumers to shippers. These have been assessed qualitatively in the Impact Assessment (IA).

2.13. The quantitative costs that arise if a DSR mechanism is implemented are associated with the fixed costs of implementation and annual running costs. Unquantified costs are summarised below and discussed in the IA.

2.14. The Gone Green results show negative NPVs because no unserved energy was generated by the modelling (and so the DSR mechanism is never utilised). This highlights the resilience of GB supply security in a low demand world. The High Demand results did produce unserved energy and so gave the various DSR mechanisms the chance to produce benefits.

2.15. In the designs where gas-fired generators are accepted the modelled net benefits are higher. This does not represent a true benefit arising from including gas-fired generators, but is a function of how the mechanism has been modelled. This is explained in more detail in our accompanying IA. We discuss our views on gas-fired generators and the DSR mechanism in more detail below.

2.16. The unintended consequences and unquantified costs are discussed in the IA. Key issues that have been taken into consideration are:

- The DSR mechanism could have unintended consequences on the day-to-day operation of the gas market. In order to resolve the trust issue the DSR mechanism would have NGG as the sole buyer of DSR. The consequence of this is that it risks removing liquidity from the OCM. Consumers who would have sold their gas on the market (where all participants could offer to buy) may now choose to sell to NGG directly. This could reduce the ability for shippers to balance their own positions.
- There is a risk that I&C consumers do not bid the true cost of disconnection but may be able to bid strategically thereby pushing up the cost of disconnecting the site and therefore the cost to consumers.

2.17. We have considered the significant benefits that could arise from having more secure DSR in the event of an emergency and weighed these against costs, unintended consequences and risks.

2.18. We have decided that the potential benefits associated with DSR outweigh the costs and therefore decided to proceed with the next steps towards the introduction of a DSR mechanism. This is subject to NGG and industry designing a methodology that meets the objectives and principles set out in the draft licence condition. This methodology would be subject to approval by Ofgem and the DSR mechanism will also be subject to successful testing before full implementation.

Principles of DSR Mechanism

2.19. The next section discusses the principles set out in the draft licence condition. In considering whether to approve the proposed DSR methodology, the Authority may have regard to whether it is consistent with the DSR principles. The DSR methodology shall:

- (a) *"ensure that any party making a Demand Side Response Offer is a party to the Uniform Network Code"*. It is not possible for NGG to contract directly with consumers. Therefore gas shippers will need to submit offers on behalf of consumers.
- (b) *"set out the criteria for determining in respect of which "DMC" Supply Point Components a party may not make Demand Side Response Offers"*. The Methodology must set out which end consumers are eligible to participate in the DSR mechanism.
- (c) *"allow the Licensee to accept Demand Side Response Offers only where a Gas Deficit Warning is in place"*. This principle refers to the trigger point at which DSR becomes available with NGG. This has been discussed extensively with stakeholders in working groups. DSR would be available only in the approach to an emergency – following declaration of a GDW.
- (d) *"be compatible with existing market arrangements setting out how any Demand Side Response Offers accepted by the Licensee are to be treated as Eligible Balancing Actions, included in the System Clearing Contract, System Marginal Buy Price and System Marginal Sell Price"*. Exercised DSR bids should be factored into the cash-out price and if the highest balancing action set the cash-out price for short shippers.
- (e) *"promote, and further facilitate, parties making Demand Side Response Offers to the Licensee through open and transparent market-based arrangements"*. At the very least any DSR mechanism must provide a route to market for a wider range of consumers than those that may have easy access to the traded markets eg, through a shipper licence or the very largest I&C consumers.
- (f) *"not unduly preclude the emergence of commercial interruption arrangements"*. Any mechanism design must not foreclose the market for commercial interruption products, or penalise self interruption by consumers.
- (g) *"minimise distortions and unintended consequences on existing market arrangements and the principle of parties balancing their own positions in the wholesale gas market"*. Ofgem's own and other independent analysis have consistently shown that the gas market is resilient to a security of supply event having invested over the recent years in infrastructure including import capacity. GB also has the most liquid and one of the largest gas markets in

Europe and therefore it is imperative that the introduction of the DSR mechanism does not harm the normal operation of the traded gas markets.

(h) “ensure that Demand Side Response is procured in a manner consistent with the Licensee’s duties under the Act and its obligations under this licence (and in particular the obligation to operate pipe-line system in an efficient economical and co-ordinated manner)”. It is important that the DSR mechanism is cost effective to ensure that the cost to consumers is minimised. Therefore in the event of a stress event it is important that NGG procures DSR in an economic and efficient manner in line with the System Management Principles Statement (SMPS).

Design Features of the DSR Mechanism

2.20. In the DSR tender consultation and in stakeholder working groups Ofgem, industry and NGG have discussed a number of design features. As per the proposed licence obligation, NGG will build on these and future discussions and submit a detailed DSR methodology.

2.21. In the following section we give our current view on design features of the DSR mechanism. For avoidance of doubt the principles set out in the licence condition are binding. These view just represent our current thinking on key aspects of DSR.

Platform Linked to the OCM

2.22. In response to the DSR Consultation in July 2013 which set out potential design options for a DSR mechanism, NGG submitted an alternative proposal. In working group meetings the demand side stressed the importance of ensuring the mechanism was simple and felt that the NGG proposal was simpler than those that Ofgem had proposed.

2.23. Secondly, Ofgem and stakeholders recognised the benefits of the proposal’s similarities with the existing mechanisms. For consumers this will mean lower transaction costs in terms of understanding the mechanism and contractual relationships. Additionally, similarity with existing mechanisms is important as the intention of this mechanism is to encourage DSR to be offered commercially. We also recognise that this platform would offer consumers some form of flexibility given that the current proposal allows consumers to regularly update volume and price of bids to a certain extent. Therefore Ofgem would support development of the “platform” proposal put forward by NGG.

DSR as a market balancing action

2.24. As set out above, a key part of our proposals is attaching a price to consumer interruptions. This should reflect the value that consumers place on maintaining their gas supplies – their individual VoLL. For large consumers, this can be revealed through the DSR mechanism. Therefore it is important that DSR actions are

considered as market balancing actions taken by the SO and priced into cash-out appropriately. If a DSR action is the highest priced balancing action it should set the SMPbuy price.

Trigger Point

2.25. The point when DSR would become available to NGG has been discussed with stakeholders in working groups. We have recognised that there are trade-offs between the DSR mechanism becoming available to help avert an emergency and therefore ahead of a Stage 1 and trying to ensure that it is activated as late as possible to avoid crowding out a commercial DSR market. Through working groups it was generally agreed that the trigger point for availability should be a GDW but as much information as possible should be provided by NGG at the time; particularly on the likelihood of it taking a DSR bid. This would aid the market in responding appropriately to a GDW.

Product Type

2.26. As part of stakeholder meetings the group has discussed the type of product. The key issue is whether the product should specify a volume or flow rate to which a consumer should turn down from their prevailing flow; or a fixed volume of response that a consumer contracts to provide regardless of their flow at the point the interruption is called. Ofgem recognises that, amongst stakeholders, views on this issue are likely to differ and the final product design needs to be suited to both I&C consumers' needs and NGG's needs.

2.27. Ofgem recommends that industry and NGG work further jointly to design an appropriate product which meets the principles set out in the licence condition. This should include investigating if a 'turn down to' is more appropriate for demand side consumers and if it could be feasibly implemented. However, we acknowledge the importance to NGG of having confidence in the level of response that the product will actually provide and that it can be priced into cash-out appropriately.

Ofgem View on Gas-fired Generators

2.28. DSR would help reveal the cost of demand reductions and allow for appropriate price signals to be sent to the market. Over the long term we want a commercial market for DSR to develop. However in the short term we have recognised that some consumers do not have a sufficient route to market.

2.29. This is not the case for gas-fired generators, which optimise their gas requirements on an intra-day basis in response to price signals. They already have, and use, a route to market.

2.30. Secondly, we are concerned that if gas-fired generators participated in the mechanism this could lead to significant distortions and unintended consequences. The DSR platform proposed is a one buyer (NGG) to many sellers platform. The current gas market (eg, the OCM) is many buyers to many sellers.

2.31. In the gas market, shippers are responsible for balancing their own positions. The DSR mechanism could reduce the ability of shippers to balance their own portfolio if consumers who would have sold their gas on the market – where all participants could buy – now choose to sell to NGG directly. As gas-fired generators already participate in the traded gas market including them in any mechanism risks removing significant volumes from the OCM, distorting the current market. The reduced liquidity would also impact on the ability of shippers to balance their own positions and could leave shippers more likely to have to face cash-out charges.

2.32. Some stakeholders have argued that in the event of a GDE they should not be liable for the penalties proposed under the Electricity Market Reform Capacity Mechanism or electricity cash-out. Concerns exist that the exposure to these penalties and imbalance charges would not be offset by payment from reduced gas usage.

2.33. We strongly believe that it is highly unlikely that a gas-fired generator would receive no payment in the event that they were curtailed in a GDE. We set out the reasons for this view below

2.34. It is likely to be in the interests of the generator and shipper to classify themselves as interruptible by notifying NGG at any point preceding an emergency. In this case the shipper would retain title to the gas that the generator would have consumed. They would then be able to get:

- a) At least the system average price (price paid to long shippers);
- b) Price from trading with other shippers on the market (greater than the system average price); or
- c) System average price (SAP) + PEC (post emergency claims).

2.35. The PEC process recompenses shippers for the cost of delivering gas if this is greater than they receive from the cash-out regime. To claim PEC shippers would have had to post an offer at opportunity cost on the traded market. To ensure appropriate competition Ofgem assesses the top 20% of PEC claims. Therefore the onus would be on gas-fired generators to prove their opportunity cost of gas as part of any PEC claim⁷.

Option Fees

2.36. Ofgem strongly advises against any DSR mechanism design that incorporates option fees. The key reason is that they are not cost effective as shown in the

⁷ Paragraphs 1.19 – 1.25 of the PEC guidance covers the economic assessment for DSR from electricity generators: <https://www.ofgem.gov.uk/ofgem-publications/40811/post-emergency-claims-economic-assessment-guidelines-version-2final.pdf>

quantitative analysis undertaken. This is mainly due to the fact that we enjoy high levels of gas supply security provided by a diverse range of supply sources therefore the likelihood of the mechanism being utilised is extremely low.

2.37. Secondly, Ofgem believes it is important not to foreclose the market for commercial interruptible contracts. If the DSR mechanism does not include the payment of option fees it will be possible for shippers to offer more attractive terms to industrial consumers and kick-start the market for commercial DSR.

Contingency Cash-out

2.38. As set out in Chapter 4 if the DSR mechanism was unsuccessful – eg, as a result of the insufficient volume of bids and therefore not enough price competition – the cash-out arrangements would revert to the “contingency” arrangements. We propose to introduce a provision for the Authority to direct that the mechanism is suspended or withdrawn if we consider that it is not operating successfully

Long Term Vision for DSR

2.39. The Authority reserves the right to withdraw the DSR mechanism following review when it is no longer deemed necessary, ie the intention of this mechanism is to make consumers familiar with calculating VoLL and bidding into a DSR mechanism. Therefore when this support mechanism is no longer needed to encourage DSR to come forward it is important that it is withdrawn, as a market for DSR is likely to be more efficient than a centralised mechanism. This is because under bilateral agreements shippers would be directly exposed to the cost of DSR. This would make them better placed to make trade-offs between DSR and other sources of flexibility, based on the risks to security of supply.

Next steps on DSR

Development and potential implementation

2.40. We propose to implement our proposals for DSR by placing a licence condition on NGG to develop a methodology. A draft licence condition has been published alongside this document for consultation.

2.41. The draft licence condition sets out the objective of the DSR methodology as well as the principles we expect it to meet. The licence condition proposed does not describe the detailed design of how the DSR mechanism will operate. This should be developed as part of the methodology. We will consider responses to our consultation on the legal text to implement our proposals and plan to issue a statutory consultation on the licence changes by summer 2014.

2.42. If we proceed to implement the DSR licence condition, we expect NGG to submit the DSR methodology for approval by March 2015. We expect NGG to develop the methodology in consultation with industry and relevant stakeholders. We

will assess the methodology against the principles set out in the licence condition and make a decision whether or not to approve it.

2.43. If we decide to approve the methodology, NGG will carry out a test to assess participation. Subject to a successful test, we will then direct NGG to develop systems changes to implement the methodology. If the test is unsuccessful, we will make a further decision as to whether to proceed, or to direct further development of the methodology. We would expect any Uniform Network Code (UNC) changes necessary to incorporate DSR into cash-out to be developed in parallel to the development and testing of the methodology. Subject to time required for system changes, we are aiming for full implementation of the DSR mechanism ahead of winter 2016/17, though would support earlier implementation if achievable.

2.44. As consumers become more familiar with calculating VoLL and submitting bids we consider that the methodology should be updated where appropriate. We propose that the methodology is subject to annual review, following a similar process to the SMPS.

2.45. We have previously said that the DSR mechanism should not preclude the emergence of commercial DSR products. If it is successful in kick-starting a market for commercial DSR, consumers may decide it is preferable to contract with shippers rather than participate in a centralised mechanism. The draft licence condition contains provision for the Authority to issue a direction that NGG is not required to comply with the condition. This would allow the mechanism to be suspended or withdrawn if there is insufficient DSR available for it to be run efficiently or it is deemed no longer necessary.

3. Policy decision on cash-out

Chapter Summary

In July 2013, the Authority made a decision to proceed with cash-out reform as part of the Gas SCR. Our policy decision for cash-out reform improves incentives on shippers to avoid an emergency and/or limit its severity. This chapter summarises our rationale for cash-out reform, as set out in our July 2013 letter.

Our July 2013 updated proposed final decision

3.1. In July 2013, we published revised proposals on the Gas SCR. This followed an extensive period of stakeholder engagement to further develop our proposals. They built on our proposed final decision published in July 2012. These updates were:

- Cash-out is unfrozen and dynamic throughout an emergency subject to 'robustness criteria'. We no longer propose capping cash-out at VoLL.
- The cost of network isolation is priced at the estimate of a domestic consumer's VoLL which is revised to £14/therm.
- Consumers are paid from the money collected from short shippers. We committed to exploring the alternative options available for the treatment of any shortfalls in funds.

3.2. As set out in chapter 2, we also committed to exploring the use of an SO-run DSR mechanism to determine the VoLL of large consumers and payments to those consumers.

3.3. This chapter sets out and reaffirms our policy decision on cash-out. Since July, we have worked with stakeholders to develop the detail of our proposals. These key technical decisions are set out in Chapter 4. In this chapter we set out an overview of our cash-out reform proposals, and discuss our rationale for these reforms. We have published the business rules, licence and UNC drafting for consultation.

Cash-out reform policy decision

Rationale

3.4. We set out our detailed rationale for cash-out reform in our July 2013 letter. In summary, our policy decision for cash-out reform ensures shippers face more appropriate incentives to balance, both in the approach to and during a GDE. An unfrozen price allows cash-out to better reflect the conditions of the system on a given day. Incorporating the cost of network isolation for NDMs ensures that prices reflect the value domestic consumers place on secure gas supplies. Improving

incentives through cash-out acts to reduce the likelihood, duration and severity of a GDE.

3.5. Our proposals also use funds collected through cash-out to make payments to consumers who are involuntarily interrupted. These payments transfer some of the risks of emergency from consumers to shippers. This places risks with those better placed to manage them, and maintains strong incentives for shippers to avoid firm consumer interruptions.

Unfrozen cash-out price

3.6. Our proposals implement an unfrozen cash-out price throughout a GDE. This improves price signals during a GDE by allowing prices to move with market conditions. It allows prices to rise above the level at which they would be frozen under current arrangements, if this is necessary to attract additional sources of gas. It also allows prices to more quickly return to normal as the emergency is resolved. Unfrozen cash-out provides incentives for shippers that better reflect the condition of the gas system on a given day.

3.7. Prices on the OCM are measured using a weighted average of trades – referred to as SAP. We propose to implement criteria to determine whether trading on the OCM during a GDE has been sufficient that we can consider SAP to be robust. This is important as an unfrozen price could potentially be set using a SAP based only on shipper-to-shipper trades. A price set by a low number or volume of trades may not necessarily reflect the true price of gas on that day. If the criteria are not met on a particular day, then we propose to define a “fall-back” price that takes the place of SAP.

3.8. In moving to an unfrozen price, there is a risk that prices could fall as the emergency escalates. As a result, we also propose to introduce a safeguard to prevent this. In Stages 2 or 3 of a GDE, the price would be at least the level it reached upon entry to that stage. Moving from Stage 1 to Stage 2 (and from Stage 2 to Stage 3) represents an increasing severity of situation, and so it is important that price signals do not weaken. Without this safeguard, there could be perverse incentives if cash-out prices reduce as the emergency escalates.

Incorporating consumer disconnections into cash-out

3.9. Our proposals also allow the cost of involuntarily interrupting consumers to be incorporated into cash-out. We approach this in two ways. One approach for DM consumers and another for NDM consumers. This is because having a daily-read meter provides the opportunity for more direct engagement with the gas wholesale market.

Daily Metered consumers

3.10. DM consumers are potentially able to agree commercial interruptible contracts with shippers, and shippers are able to benefit from these contracts. These

commercial negotiations could allow the cost of interruption for these consumers to be reflected on the wholesale market, as shippers will be able to re-sell this gas. We acknowledge the views of some stakeholders that such arrangements may not emerge. As set out in Chapter 2 this is our rationale for developing a centralised DSR mechanism. However, we think it is important that the arrangements put in place – either with or without a DSR mechanism – do not eliminate incentives for commercial interruption.

3.11. In setting the price of involuntary interruptions for DM consumers, our key consideration is ensuring that incentives to strike commercially interruptible contracts are not eliminated. If a DSR mechanism is not in place, our approach is to set this price so that it is expected to be below the level of cash-out prices on the day of an emergency – using the average SAP of the 30 days prior to the GDE (“30-day SAP”). Such an arrangement means shippers and DM consumers can potentially agree mutually beneficial interruption – at a price between the involuntary DM price and the shipper’s expected cash-out price. Once a DSR mechanism is implemented, payments to DM consumers would be set through this mechanism, and we expect that this proxy DM price would no longer apply.

Non-Daily Metered consumers

3.12. Our proposals also incorporate the cost of interruptions for NDM consumers – including domestic households. These consumers are not currently able to participate directly in the market – as their meters are not read on a daily basis and so interruption cannot easily be measured or verified. As a result, our proposals introduce an estimate of NDM VoLL; based on a typical domestic consumer and set at £14/therm. On days where interruption of NDM consumers is initiated, this VoLL would be incorporated into cash-out to ensure that prices reflect the value domestic consumers place on secure supplies. This means that the price signal will incentivise shippers to deliver security of supply at the value consumers place on it. We are also extending existing Emergency Curtailment Quantity (ECQ) processes to ensure imbalances are adjusted so that shippers do not benefit if their demand is reduced due to the interruption of NDMs.

Payments to consumers

3.13. Under current arrangements, any net funds remaining or required after cash-out charges are levied and balancing actions paid for are smeared across the industry via the neutrality process – shared on the basis of throughput. In normal operation, the scale of this neutrality smear is typically small. However, in an emergency, we would expect the volume of short shippers’ imbalances to exceed the volume of long shippers’ imbalances. This is because in order for a GDE to occur the system must be short in net terms. This means that the net of cash-out charges (and so the scale of a neutrality smear) is likely to be positive and significant. This would blunt incentives from cash-out, as a shipper would effectively face less than the full cash-out price once the neutrality smear is taken into account.

3.14. Our proposals introduce payments to interrupted consumers in recognition of the involuntary DSR service they provide to help balance the system. These

payments are funded through cash-out charges. This helps maintain sharp cash-out incentives in an emergency.

3.15. For DMs, we propose to set payments at 30-day SAP. As discussed above, this means that they can gain from signing commercial interruptible contracts with suppliers – whilst suppliers also face incentives to offer these contracts.

3.16. For NDMs, payment at VoLL of £14/therm reflects the fact that they are unable to agree interruptible contracts. We are limiting payments to NDMs to the first day of network isolation, as the duration of such an interruption is not within the control of shippers. Following network isolation, consumers must be visited individually to be safely reconnected to the system. This is the responsibility of distribution networks. Even if shippers recovered sufficient gas supplies quickly, safely reconnecting consumers would take time.

3.17. As stated in previous Gas SCR documents, the principle of recovering the cost of balancing actions from the whole of the shipper community is well established. NGG as SO is neutral to the costs of balancing the system. We consider that the interruption of consumers is a balancing action like any other, and so should be treated in the same way.

3.18. Cash-out charges are set to reflect the marginal cost of balancing the system, but net receipts from cash-out may not necessarily match the overall cost of balancing. This could be positive or negative. In this case, under current arrangements, the residual is effectively charged or paid to all shippers via the neutrality process. Where there are insufficient net receipts from cash-out to fund payments to consumers, we have referred to this as a “shortfall”.

3.19. We have made significant efforts to reduce the likelihood of any “shortfall” in net cash-out funds and minimise the size should one occur. Yet should insufficient funds still be available to make payments to consumers, we propose a proportional additional charge on short shippers to recover these funds. If insufficient funds are recovered from short shippers, payments to consumers would be limited to the amount recovered from short shippers. This is because if these costs were smeared across neutrality it would weaken incentives for shippers to increase their throughput. During an emergency, it is important to maintain these incentives in order to reduce the severity of a GDE.

3.20. If a shipper defaults on payment of an invoice, we do not propose to change the current principle – these funds would be recovered from the rest of industry via neutrality. However we recognise that targeting costs on the basis of throughput during a GDE could create disincentives to flow additional gas. As a result we propose that neutrality charges during a GDE operate using an alternative throughput – throughput from the 365 days preceding the GDE. We do not consider that it is discriminatory to maintain an approach that recovers these costs on the basis of a shipper’s throughput. This maintains the principle that the industry as a whole is liable for the costs of balancing the system. Smearing costs on the basis of throughput means costs are apportioned relative to usage of the system. Any funds

subsequently recovered from defaulting shippers would be returned to the rest of the shipper community via neutrality using the same apportionment.

Implementing cash-out reform

3.21. We intend to implement cash-out reform so that it can function in absence of a DSR mechanism – as the DSR mechanism would be withdrawn if the market has emerged and no longer needs support. Cash-out reform is in the interests of consumers. It unfreezes prices in a GDE, and incorporates the estimated cost of interruption for NDM consumers. It is important to implement cash-out reform as soon as possible to correct this weakness in current market arrangements.

3.22. We also need to implement cash-out reform that is able to function if the DSR mechanism needs more time to be developed, or is ultimately unsuccessful. This means that cash-out reform should take effect by winter 2015/16, and is not dependent on the timescales required to fully develop and implement the DSR mechanism.

3.23. If a DSR mechanism is incorporated into cash-out, then we would anticipate further changes made to the relevant sections of the UNC. We would expect these to be developed in parallel to the DSR mechanism itself. These UNC changes would mainly affect the level of payments to DM consumers, which could be determined according to the DSR mechanism rather than at an administered level of 30-day average SAP. Changes would also need to be made to incorporate DSR actions into the list of balancing actions that could set cash-out prices.

4. Key business rules issues

Chapter Summary

To implement cash-out reform, we need to specify detailed rules for cash-out arrangements in an emergency. We have worked extensively with industry to develop these. This chapter sets out the key developments since we published business rules and legal drafting in July 2012.

Introduction

4.1. We set out below the details of our approach on the key aspects of cash-out reform that are reflected within the business rules. This chapter assumes familiarity with the GB cash-out arrangements and our SCR proposals. For more background information refer to our previous SCR documents. This includes:

- How cash-out is set (excluding the DSR mechanism at this stage)
- Criteria for ensuring the robustness of SAP and the fall-back price
- Payments to DM consumers (excluding the DSR mechanism at this stage)
- Payments to NDM consumers within stage 3 of a GDE
- Payment timescales
- Treatment of shortfall and default
- Pass through of payments for involuntary DSR
- Commercial interruptions
- Treatment of interconnectors and storage

4.2. Alongside this document, we are publishing for consultation updated draft business rules and code and licence drafting to implement our policy decision for cash-out reform. We invite comments on this drafting by 9 April 2014.

Cash-out price formation

4.3. We are committed to developing a DSR mechanism. We also need to ensure that cash-out arrangements work if this mechanism is delayed, or does not function as envisaged – we have previously referred to these as “contingency” cash-out arrangements. In the absence of a DSR mechanism, there will not be any balancing actions taken by NGG in stages 2, 3 and 4 of a GDE. We need to define how the cash-out price will be determined in these stages of a GDE.

4.4. Cash-out should be set so it continues to provide a strong price signal, whilst still allowing flexibility for the price to respond to market conditions. It is important

that the signal sent by cash-out provides the appropriate incentives for shippers to balance their position and so take actions to avoid a GDE or limit its severity.

Ahead of Stage 2 of GDE

4.5. We propose that up to and including stage 1 of a GDE, the cash-out price will be set using the existing SMPbuy and SMPsell calculations. On days where NGG takes a balancing action, this means that cash-out will be set by the marginal action. This would apply until NGG ceases to take market balancing actions (ie, declaration of stage 2 of a GDE). For the avoidance of doubt this is no different from the existing arrangements.

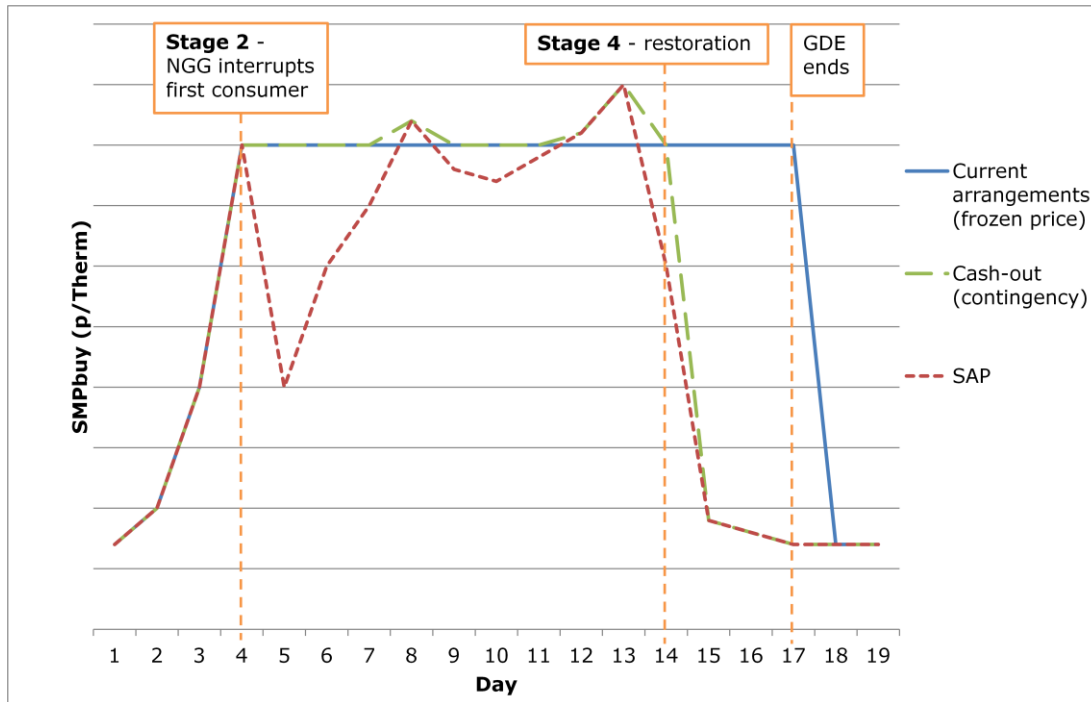
Stage 2 of a GDE

4.6. During stage 2, we propose the cash-out price for short shippers would be set each day at the greater of:

- daily SAP plus the fixed differential, or;
- prevailing cash-out price upon entry to stage 2 (ie, most likely the price of the last marginal balancing action taken by NGG)
- DM firm load shedding price (30-day SAP)

4.7. Our proposal means that the cash-out price faced by short shippers in stage 2 better reflects the state of the system. Cash-out would not be able to fall as the emergency escalated in severity. It would be set at least as high as the prevailing cash-out price upon entry to stage 2 of a GDE. In the absence of this provision, there is a real risk that cash-out prices would fall upon moving from stage 1 to stage 2 of a GDE – as cash-out prices would move from a marginal price to an average price. This could create perverse incentives as an escalating emergency could have falling cash-out prices. If a DSR mechanism were implemented, this issue would be avoided as exercised DSR would persist through a GDE. This would effectively set a lower limit to the price in stage 2. In the absence of DSR, it is necessary to implement an equivalent arrangement to ensure that incentives from cash-out remain appropriate. This is illustrated in the diagram below. Our proposals strike a balance between ensuring that cash-out does not fall as the emergency escalates, and allowing for flexibility in response to changing prices of shipper-to-shipper trading, particularly as the emergency is resolved and the system restored.

Figure 2 – Cash-out within a Gas Deficit Emergency



4.8. We propose that the cash-out price for long shippers is set at SAP for each day of stage 2 – this is unchanged by the absence of a DSR mechanism.

Stage 3 of a GDE

4.9. During stage 3, our proposal is that cash-out for short shippers would be set at the greater of:

- daily SAP plus fixed differential, or;
- prevailing cash-out price upon entry to stage 3
- NDM VoLL £14/therm (on days where new network isolation is initiated)
- DM firm load shedding price (30-day SAP) (on days where firm load shedding continues)

4.10. On days where NDM isolation is initiated, NDM VoLL (£14/therm) would be included in the prices that could set cash-out. This ensures that when domestic consumers are interrupted prices reflect at least the value they place on secure supplies. Only applying VoLL on days where isolation is initiated reflects that the duration of an NDM outage is outside of shipper control.

4.11. For the same reasons as set out above, we propose that the cash-out price is set at a minimum of the prevailing level upon declaration of stage 3. As above, the purpose of this is to avoid incentives to escalate the severity of a GDE, as cash-out

prices cannot fall as the emergency escalates in severity from stage 2 to 3. Just as for stage 2, we propose that the cash-out price for long shippers would be set at SAP for each day of stage 3.

Stage 4 and market restoration

4.12. In restoration, firm load shedding of large consumers will end. At this point, there may be ongoing network isolation. However, the resolution of this is likely to become a localised emergency and so allow the GDE to move to restoration. During this stage cash-out for short shippers would be set at SAP plus the fixed differential. Cash-out for long shippers would be set at SAP. This should allow prices to respond to the stabilisation of the system, and provide an appropriate price signal of the level of flows required into the NTS. Once NGG resumes taking market balancing actions, we propose that the cash-out price would revert to the normal SMPbuy/SMPsell calculations.

4.13. We summarise our proposals for the calculation of cash-out prices in the absence of a DSR mechanism in the table below.

GDE Stage	Short cash-out	Long cash-out
Up to and including stage 1	Greater of: <ul style="list-style-type: none"> • most expensive balancing action, or; • SAP plus Fixed differential 	Lesser of: <ul style="list-style-type: none"> • least expensive balancing action, or; • SAP minus Fixed differential
Stage 2	Greater of: <ul style="list-style-type: none"> • Prevailing cash-out price upon entry to stage 2 (ie, last balancing action taken by NGG) • DM Firm Load Shedding price • SAP + Fixed differential 	SAP
Stage 3 (when new network isolation initiated)	Greater of: <ul style="list-style-type: none"> • Prevailing cash-out price upon entry to stage 3 • NDM VoLL • SAP + Fixed differential • DM Firm load shedding price 	SAP
Stage 3 (when no new network isolation initiated)	Greater of: <ul style="list-style-type: none"> • Prevailing cash-out price upon entry to stage 3 • SAP + Fixed differential • DM Firm load shedding price 	SAP
Stage 4	SAP plus Fixed differential	SAP
Market restored	Normal SMPbuy	Normal SMPsell

4.14. Shipper imbalances throughout an emergency would be subject to adjustment via the ECQ process. As in previous proposals, we intend to extend the current process (which only applies to DM consumers) so that NDM interruptions are also accounted for in a similar way. This ensures that shipper imbalances do not gain as a result of the interruption of consumers

Criteria and fall back price

4.15. Our updated proposed final decision set out that cash-out would be unfrozen throughout a GDE. This means that cash-out prices in an emergency could be based on SAP. In the absence of actions by NGG, SAP would be based solely on shipper-to-shipper trades on the OCM.

4.16. Within a highly stressed market (as might be the case during a GDE), there is potential for liquidity to fall. This could result in unreliable price signals or a small number of trades setting the cash-out price for the entire market. We therefore consider that it is appropriate to impose some minimum criteria to ensure robust prices are used to set cash-out. Stakeholders supported the principle of this approach. We also consider that there should be a fall-back price that will take the place of SAP if the criteria are not met on any given day.

Criteria

4.17. We propose the following criteria. During a GDE, SAP would need to meet all these criteria to be deemed robust and incorporated into the cash-out price calculation:

- Minimum total traded volume = 250,000 therms per day
- Minimum number of trades = 5
- Minimum number of counterparties = 5

4.18. These numbers are based on the regulatory requirements set by the Federal Energy Regulatory Commission (FERC) for reporting prices in North American gas markets. The criteria specify a 'universal benchmark liquid market' and so should not be considered to be limited to any particular market. This is reflected in the fact that they have been applied across a vast range of regional markets in North America (ie they are treated as a minimum bar that any market should be able to reach). Despite being developed some time ago, the criteria remain in use today and the feedback has been that they continue to provide a decent guide to the general level of liquidity at a trading point.

4.19. In setting criteria we have tried to determine the minimum level of reliable data that is needed to formulate a robust volume-weighted average price. The minimum number of trades is needed to ensure that there are sufficient data points to calculate an average. An average of one is not appropriate. The total traded volume required to ensure that trades on the day represent a sufficiently large

commitment by trading parties. The number of counterparties ensures that one or two parties do not have an inappropriate level of control over setting SAP.

4.20. Some stakeholders have commented that organisations may hold more than one shipper licence and therefore trade with themselves. We think counter parties should remain as defined in the UNC, and so do not propose any specific restrictions. Any attempt to manipulate the cash-out price would potentially be restricted under EU regulation No 1227/2011 on wholesale energy market integrity and transparency (“REMIT”).

4.21. We have listened to concerns about criteria being made public. If traders know the criteria under which SAP will be judged, and suspended, they may alter their behaviour. As noted above, gaming of criteria would potentially be prohibited under REMIT. We also consider that long and short shippers would have opposing incentives with regards to the level of SAP.

4.22. More stringent criteria would result in a more robust price. This would increase the chance of the criteria not being met and the fall-back price being used, meaning price signals could be blunted. The reverse is the case for weaker criteria. It would be more likely that SAP meets the criteria, however at the expense of reducing confidence in it being sufficiently robust. We believe our proposed criteria strike an appropriate balance.

Fall-back price

4.23. The fall-back price will take the place of SAP on any day in a GDE where the criteria described above are not met. The fall-back price aims to generate a price that is not distorted by outliers and extreme priced trades, but still reflects conditions in the GB market on the day as closely as possible.

4.24. We propose that the fall-back price is calculated from the weighted average of:

- Previous SAP that met criteria (50% weighting)
- Median of completed trades on the day (25% weighting)
- Weighted average of completed trades on the day (25% weighting)

4.25. We are mindful that using the previous robust SAP is likely to be an inaccurate reflection of the actual day. However using previous indices in the event of insufficient trade data has precedent in the UNC and provides a reference to a price which met the criteria.

4.26. We consider it important that the fall-back price also reflects conditions on the day as closely as possible. We achieve this through the inclusion of the median and weighted average of completed trades. Some stakeholders have expressed concern about using data from a day where the criteria have failed to be met. We recognise this concern, but think that the scope for any one aspect of the fall-back price to

distort the overall figure is mitigated by averaging the three different inputs. We also propose to apply a weighting to each of the inputs to further mitigate any unintended consequences from using on-the-day data.

Payments to Daily Metered consumers without a DSR mechanism

4.27. Under a DSR mechanism, payments to DM consumers would be determined through their participation in that mechanism. Until a DSR mechanism is in place, we need to rely on commercial interruption arrangements to reveal the cost of interruption for large consumers. The payments to large consumers under cash-out reform therefore need to strike a balance between appropriate payment for the balancing service provided and maintaining incentives to agree commercially interruptible contracts. As with a DSR mechanism, it is important that the arrangements do not preclude the emergence of market-based DSR, as this is likely to be the most efficient long-term solution to pricing the interruption of large consumers.

4.28. We considered payments to DM consumers at SAP, however paying DM consumers at the same price that long shippers would receive means that shippers are unable to beat the market price and so unable to offer attractive deals for commercial interruption. This is because the maximum a balanced shipper can gain with certainty from interrupting their consumer is SAP, and so this is potentially the maximum they would be willing to pay a consumer for interruption. If the consumer would also be paid SAP if interrupted involuntarily, there is no incentive for them to agree to be interrupted commercially ahead of firm load shedding.

4.29. In an actual emergency situation, the Post Emergency Claims (PEC) process may provide some incentives for shippers to pay consumers greater than SAP to interrupt. However the shipper would not have certainty that it would be able to recover greater than SAP through the PEC process, and the PEC process also involves time lags in receiving payment. Short shippers may also be willing to pay greater than SAP for interruption if it lessens their exposure to cash-out charges.

4.30. We propose to set payments for large consumers at a price that is likely to be less than SAP, in order to maintain a situation where both shippers and DM consumers can benefit from agreeing commercial interruption. We propose that DM consumers are paid average of SAP from the 30-days prior to the declaration of an emergency. This fixed period of time provides certainty over the level of payments once a GDE is declared. The alternative - a rolling period - could result in payments greater than SAP if the GDE persisted for an extended period of time. This would act as barrier to commercial interruption. Using a period of 30 days is likely to result in a price that is more representative of SAP outside a GDE than a shorter period (for example, 7 days).

4.31. As set out in previous proposals, DM consumers would be paid based on the volume of interrupted consumption calculated through the existing ECQ process. This estimates how much gas a DM consumer would have consumed if they had not been interrupted, based on Offtake Profile Notices (OPNs) and historical consumption. In

this way, DM consumers are paid for the estimated amount of consumption they have forgone.

4.32. Payments for consumers will be made to the relevant shipper at the time the payments become due. These will then be passed from shipper to supplier to consumer – governed by licence conditions. The draft shipper/supplier licence conditions we have published alongside this document govern this pass through of payments.

Payments to Non Daily Metered consumers

4.33. Our updated proposed final decision set out that the cost of network isolation would be priced at the estimate of a domestic consumer's VoLL. We set our updated estimate of VoLL in our July 2013 publication - £14/therm. Consumers interrupted in stage 3 of a GDE would be paid this for the first day of network isolation. In consultation, stakeholders have raised concerns with the calculation of this figure. Our view has not changed since our July 2013 letter. We remain of the view that £14/therm is a robust estimate of the cost of a 1-day interruption for a domestic consumer in winter.

4.34. For DM consumers the existing ECQ process can be used to calculate the volume they would have consumed had they not been interrupted, and therefore the payment due. The proposed ECQ process for NDM consumers calculates the volume of interruption at an Local Distribution Zone (LDZ) level. It is not practical to estimate the volume of gas that otherwise would have been consumed by each individual NDM consumer.

4.35. We propose payments to NDM consumers subject to network isolation should be calculated using a variable approach that reflects typical consumption. Our intent is not to calculate the estimated forgone consumption of every individual consumer, but instead estimate this for each consumer type.

4.36. In order to achieve this we propose to group NDM consumers into the following bands based upon their type and Annual Quantity (AQ):

- All Domestic NDM consumers
- Non domestic NDM, 0 – 73.2 MWh
- Non domestic NDM, 73.2 – 293 MWh
- Non domestic NDM, 293 – 732 MW
- Non domestic NDM, > 732 MWh

4.37. The NDM payment volume will then be calculated from the typical Supply Offtake Quantity (SOQ) of the relevant load band multiplied by the ratio of aggregate interrupted NDM volume and the sum of the SOQ of interrupted sites. This is then multiplied by NDM VoLL to give the payment due.

4.38. Utilising one band for all domestic NDM consumers is consistent with our principle that NDM consumers of the same type should be paid the same for a given interruption. It is also consistent with our approach of calculating the VoLL for domestic consumers as a single average figure.

4.39. The bands for non domestic NDM consumers attempt to strike a balance between accurate payments and avoiding unnecessary complexity. Limiting the number of different bands will simplify the administration of payments to consumers. On the other hand, we do not consider it is appropriate to have one band that goes from, for example, 73.2 MWh to 732 MWh. Such a band could contain many different types of consumers with varying levels of consumption. This may result in significant under or over payments when compared to what the consumer would actually have used if they were not interrupted.

4.40. The minimum threshold at which a consumer can elect to be Daily Metered is 732 MWh. However, some consumers with AQ greater than this may choose to remain NDM. We therefore propose one band to capture those sites which are above 732 MWh and NDM. We propose to reflect the variety in size within this band by using each consumer's individual SOQ rather than an average for that band.

4.41. We propose that an average SOQ will be calculated for each band (excluding non domestic NDM > 732 MWh). This will be calculated from all consumers within that band so the calculation does not have to be repeated for each specific isolation.

4.42. As for DM consumers, payments for NDM consumers will be passed through from shipper to supplier to consumer. These will be governed by the draft licence conditions we have published alongside this document.

Payment timescales

4.43. As we stated previously, our proposed method of calculating payments to NDM consumers is to use a variable approach that uses typical consumption. This ensures that all consumers of the same type are paid the same for a given interruption, and that payments to NDM consumers reflect the level of demand at the time of the emergency. If an NDM would have expected to consume a large amount of gas, then their payment would be greater than if the emergency occurred on an average demand day. We expect NGG to be able to provide an estimate of the minimum payment NDM consumers can expect to receive as soon as possible following an interruption.

4.44. We propose that payments to consumers are incorporated within the existing Energy Balancing Invoice (EBI) process. This means that payments to consumers are effectively funded by payments from short shippers. The EBI process assumes that all invoices are paid by the due date, and so payments in and out of neutrality should net off.

4.45. The optimal outcome would be that consumers are paid as soon as possible. However requiring consumers to be paid at the time the initial EBI is settled would

require NGG to assume that payment will be made in full by all shippers. This would require NGG to take out a significant level of credit to manage the risk that an invoice is not paid on time, leaving the neutrality account in deficit. EBIs following a GDE could be significantly greater than current credit provisions for neutrality. The cost of this additional credit facility would ultimately be passed onto consumers.

4.46. We have listened to comments from stakeholders and note the strong preference of the demand-side to receive payments as soon as possible. However, we recognise the significant costs of additional credit facilities required for the management of what is likely to be a rare event. We do not therefore consider that the costs associated with extending the credit facilities of the neutrality account would be in the best interests of consumers. Therefore we expect that consumers who were involuntarily interrupted would be paid around four months following the emergency⁸. This allows time to ensure that sufficient funds have been recovered through the payment of EBIs before payments to consumers are made

4.47. The introduction of smart metering and improvement in timely data flows between parties may offer the opportunity to make changes to invoicing processes that could speed up payments to consumers. We encourage the industry to investigate ways to achieve this in the future.

Treatment of shortfall and default

4.48. Paying consumers for providing involuntary DSR is an important part of our cash-out reforms. The primary aim of payments is to transfer the risk of a GDE from consumers to shippers and ensure the incentives on a shipper to balance their position are appropriate.

4.49. A situation could arise where insufficient funds are recovered from short shippers to allow the full payment to long shippers and consumers subject to involuntary interruption. Two scenarios could cause this to happen:

- There are insufficient short shippers to fund all payments out (for instance if some shippers who are short recover their position within day)
- If a shipper defaults on payment of an EBI

4.50. Our proposed final decision in July 2012 set out that a potential shortfall in funds for involuntary DSR payments would be targeted proportionately at short shippers. We proposed that any residual shortfall would be targeted at neutrality. That is, smeared across all shippers based upon their throughput of gas on the day. We did not propose any changes to the arrangements for non payment of energy balancing charges or to credit arrangements.

⁸ For the avoidance of doubt, settlement of payments to consumers for voluntary DSR post declaration of Stage 2 of a GDE will also be made under these timescales.

4.51. Stakeholders have commented that these proposals could provide a disincentive to flow gas. We recognise these disincentives could occur as a result of our previous proposals. This is because shippers with a higher throughput on the day of the emergency would bear a greater proportion of the costs associated with a neutrality smear. This would be counter intuitive to the desirable outcome of attracting gas to GB in an emergency. Stakeholders also commented that the socialisation of costs associated with a default may lead to increased risks of contagion.

4.52. In our updated proposed final decision in July 2013 we committed to addressing these concerns. We noted however that any alternative options must balance the interests of consumers with the possible disincentive on shippers to flow gas during a GDE.

4.53. Our first goal is to minimise the potential for a shortfall to arise. We consider that there may be ways in which this can be done. If the net of cash-out charges is insufficient to fund all payments out, we propose in the first instance to target short shippers with a proportional additional charge⁹ as we set out in our proposed final decision. This maintains the incentive on shippers to balance their position on a given day. This would be based upon the ratio of their imbalance volume to the volume of consumer interruptions to ensure that they do not face disproportionate charges. If a residual shortfall exists, we propose to limit the payments made to consumers to what has been recovered from short shippers. This avoids placing costs on shippers who have not contributed to the emergency and does not create any disincentive to flow gas into GB.

4.54. We have noted comments from industry that shippers may make trades after the day of a GDE and therefore retrospectively recover a short position. This could increase the likelihood of payments to consumers being limited. We consider that the ability to trade retrospectively may partially blunt the incentive on shippers to ensure they have contracted for enough gas on a given day. However we recognise that any change to these arrangements would be outside the scope of the Gas SCR.

4.55. In the event of a shipper defaulting on payment of an EBI, as well as any other neutrality charges in stages 2, 3 and 4 of a GDE, we propose that the costs are smeared to neutrality. We do not consider that limiting payments to consumers would be practical in event of a default. We have noted instances where funds have been recovered from defaulting parties several years after the default. These are returned to all shippers through the neutrality mechanism as a credit. Therefore it would not be appropriate to limit payments to consumers in the first instance, and then return any future credit to shippers. Furthermore, it would not be practical for NGG to monitor any funds recovered from a defaulting party and pay consumers years into the future.

⁹ This would be based on the ratio of short shippers' imbalances to the volume of interrupted consumers. If this ratio is less than 1, then short shippers would only face a charge for that proportion of shortfall.

4.56. However, we recognise that smearing costs using throughput on the day of a GDE could create disincentives to increase flows in a GDE. As a result, we propose that for each day within a GDE the preceding 365 days is used to determine a shipper's throughput. This approach ensures throughput is reflective of a shipper's behaviour over the entire year and removes any near term skew.

4.57. Stakeholders have argued that any approach that smears costs across neutrality could be discriminatory. We consider that our proposals for managing default maintain the principle of the risk of a shipper default sitting with the industry as a whole as in the current arrangements. However the use of an alternative throughput reduces the disincentive to bring gas to GB during an emergency. We do not consider that it is discriminatory to maintain an approach that recovers these costs on the basis of a shipper's throughput. Smearing costs on the basis of throughput means costs are apportioned relative to usage of the system. Any funds subsequently recovered from defaulting shippers would be returned to the rest of the shipper community via neutrality using the same apportionment.

Pass through of payments for involuntary DSR

4.58. We propose that the shipper and supplier at the time payment for involuntary DSR is due should be responsible for passing through payments to the consumer. This ensures that payments to consumers can be passed along an active contract chain. It also mitigates the risk that payments do not reach end consumers as they are made to parties who have exited the market in the period following the GDE. We propose to govern this transfer of payments through conditions in the shipper and supply licence, drafts of which are published alongside this document.

Commercial interruption

4.59. We do not propose any change from our proposed final decision to the treatment of commercially interruptible contracts. In the event a DM consumer with a commercial interruption contract is curtailed following instruction from the NEC, they will not be eligible to receive a payment through the DSR payment process. The quantity would not be included in the ECQ process for that shipper, but would retain any volume for the purposes of their imbalance position. Additionally such a site would not be eligible to participate in the DSR mechanism or receive any payment through the DSR Payment process. To this end, suppliers will be required to provide information on commercially interruptible contracts to shippers, who in turn will be required to provide this to NGG. This process will be governed by the draft shipper and supplier licence conditions we have published alongside this document.

Treatment of interconnectors and storage

4.60. We propose that DSR payments will not be made for storage curtailment or for interconnector curtailment.

4.61. We have previously noted the views that interconnector users should be subject to payments for involuntary interruption. DSR payments are intended to be

made to end-consumers in recognition of involuntary DSR services. As a result, interconnectors and storage sites are not included in arrangements for DSR payments in respect of involuntary interruption. We do not have legal powers that extend beyond GB, and so DSR payments cannot be made to consumers in other markets.

Cash-out reform implementation

4.62. We are publishing for consultation draft business rules and code and licence drafting to implement our policy decision for cash-out reform. We invite comments on this drafting.

4.63. Following this consultation on the business rules and legal text, we aim to publish a statutory consultation on the proposed licence changes by summer 2014 together with a further consultation on the UNC legal text.

4.64. We intend to issue directions to implement the changes to the UNC and to licences in summer 2014. This will allow time for Xoserve to make the necessary system changes in order for cash-out reform to be implemented ahead of winter 2015/16.

4.65. We intend to issue a direction to implement the changes to the UNC using our powers under section 36C of the Gas Act 1986. Pursuant to section 36C the Authority may direct the operator of the gas National Transmission System (National Grid Gas plc) to make a modification to the UNC as specified in the direction. The modification must relate to the arrangements contained in the code in respect of a Gas Supply Emergency and must be considered by the Authority to be a market-based modification.

4.66. The Authority intends to make a direction pursuant to section 36C as it believes that the proposed modification will do either or both of the following:

- decrease the likelihood of a Gas Supply Emergency occurring;
- decrease the duration and severity of a Gas Supply Emergency which occurs.

Appendices

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Appendix 1 - Consultation response

1.1. We'd like to hear your views about any of the issues in this document.

1.2. We are consulting on the draft business rules and code and licence drafting to implement our policy decision. Our priority is to ensure the proposed drafting meets the intent of our policy decision for cash-out reform.

1.3. It would be helpful if you could submit your response both electronically and in writing. Responses should be received by 9 April 2014 and should be sent to:

- Tom Farmer
- Wholesale Markets
- 9 Millbank
London
SW1P 3GE
- 020 7901 1862
- wholesale.markets@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published in our library and on our website, www.ofgem.gov.uk. You may ask us to keep your response confidential. We'll respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. If you'd like your response to remain confidential, mark it clearly to that effect and include your reasons. Please restrict any confidential material to the appendices to your response.

1.6. Having considered the responses to this consultation, we intend to publish a statutory consultation on the proposed licence changes by summer 2014 together with a further consultation on the UNC legal text. Please direct any questions about this document to:

- Tom Farmer
- Wholesale Markets
- 9 Millbank
London
SW1P 3GE
- 020 7901 1862
- wholesale.markets@ofgem.gov.uk

Appendix 2 – Summary of consultation and responses

1.1. In July 2013 we published a consultation on whether to implement a DSR tender and the high level principles of how one might operate. We received 17 non confidential responses from gas suppliers, shippers, consumer representatives and the system operator. These responses are all published on the Ofgem website¹⁰. This appendix summarises stakeholder responses to the questions we asked.

What are your views on a SO-run tender? Do you think it is an appropriate addition to the Gas SCR

1.2. Most respondents were in favour of an SO-run tender. It was noted that this could provide benefits by unlocking DSR and helping to manage the response to a GDE more effectively. They stated that a tender would provide the SO with some assurance around the volume of DSR that was available in the event of a DSR. There was support for any tender being SO-run and respondents in favour of a tender were keen on a market based mechanism being used to determine large consumers' VoLL.

1.3. There were some concerns about the costs that a tender could place on the SO. Some respondents also urged Ofgem to further consider the interactions of any tender with the electricity Capacity Mechanism. One respondent suggested that DSR should be developed separately and only once the Gas SCR was concluded. There was also some support for a trial of any new arrangements.

What do you think the purpose of the tender should be?

1.4. There were various answers on what stakeholders believed the purpose of the tender to be. Most respondents believed that it was to provide an additional tool to the SO and therefore minimise the likelihood of a GDE. Some stakeholders said that the tender would identify the price of industrial VoLL which was preferable to an administered value. Others noted that the tender would provide a route to market for a specific group of consumers.

What benefits do you see a DSR tender providing?

1.5. Respondents commented that the benefits of a DSR tender would be that the SO had access to additional DSR which could be used to reduce the likelihood and or duration of a GDE. It was noted that the tender would provide a clear signal of the cost of interruption. Some respondents welcomed payment to consumers for the provision of DSR as well as the ability to firm load shed in tranches as opposed to the

¹⁰ <https://www.ofgem.gov.uk/publications-and-updates/gas-security-supply-significant-code-review-%E2%80%93-demand-side-response-tender-consultation>

current binary on or off arrangements. There was concern that the volume of potential DSR was unclear and the tender should be designed so as not to undermine market signals in a GDE.

What costs do you see arising from a DSR tender?

1.6. Most respondents noted that there would be administrative costs in developing and submitting bids. There would also be costs incurred by the SO in developing and maintaining any system solution. Some noted that there would be costs incurred in procuring back up fuel. One respondent highlighted that in the event of being interrupted they could face other costs such as lost sales and product.

Do you think a DSR tender should have a role subsidising investment in back up facilities? If so, why?

1.7. Most respondents did not support the DSR tender subsidising investment in back up facilities. They commented that investment decisions should be made by participants having assessed the risk and subsidies may create perverse incentives. It was noted that the aim of the tender was to discover the cost of interruption, not what is needed for new investment.

1.8. Those who supported the tender subsidising back up believed it was necessary to encourage participation.

Chapter 3

What do you see as the key design issues for the high level design of a DSR tender? Are there any we have not included here?

1.9. Respondents listed a number of further design issues to be considered. These included penalties for non compliance, eligibility, need for IT system development, response time and type, monitoring and contractual arrangements. There was also support for consumers to have freedom to determine their own bid structure. Ofgem were also urged to consider the interactions with electricity arrangements.

What are your views on having variable option fees in the tender? Do you have any concerns about the costs that these could impose irrespective of a GDE actually occurring? How should these be funded?

1.10. There was support for option fees from some respondents as they considered these necessary to encourage participation. This was particularly important given the low probability of a GDE occurring.

1.11. Those against option fees noted that they added complexity and made the discovery of VoLL more difficult. There was concern that the cost of option fees would be smeared across the market and ultimately met by consumers. One

respondent suggested funding any option fees via the balancing neutrality mechanism as a modification to the SMP calculation would be inappropriate.

What are your views on the eligibility of gas-fired power stations? How should the interactions with electricity market be managed?

1.12. Most shippers believed that gas-fired generators should be eligible to participate in a DSR mechanism. However respondents raised concerns with the interactions with the electricity market and commented that these should be explored further. One noted that while gas-fired generation should be included, potential conflicts with the electricity Capacity Mechanism meant they may choose not to participate or submit prohibitively high bids.

1.13. One respondent considered the DSR tender should only be open to parties without an immediate route to market. This would exclude gas-fired generation.

Could participation of gas-fired power stations have a negative impact on the tender, or on the gas market as a whole? If so, can you suggest any steps that could be taken, or an alternative mechanism that could be created, that would help mitigate these concerns?

1.14. Those against inclusion of gas-fired generation commented that it would potentially crowd out most large industrial users who would be unable to compete. It was also noted that gas-fired generation could impact cash-out, balancing neutrality and market credit positions with or without a tender being in place.

1.15. Those in favour recognised the risks of inclusion but considered the benefit of making a larger volume of DSR available to the SO outweighed these risks. They commented that if the aim was to reduce gas consumption in the event of a GDE, excluding the largest consumers would be unwise.

Do you have any views on what consumers whose bids were unsuccessful should be paid if they are firm load shed?

1.16. Some respondents suggested paying the average of successful bids was acceptable. Alternatively the first unsuccessful bid could be paid the average, and then reducing payments from this level the further away bids got. It was felt by some that some payment was necessary to cover the cost of submitting a bid.

1.17. Other respondents said there was an equally compelling case to pay nothing. There was concern from one respondent that using an average price may mean that consumers with a low VoLL may bid extremely high prices in order to deliberately be rejected and paid the average.

What are your views on the response type the tender should contract for?

1.18. The majority of respondents noted that this should be developed further between the SO and consumers. Those expressing a preference were split between no limit on volume or tranches, and ensuring that any time limit should apply to each tranche equally and in line with existing arrangements as prescribed by the OCM.

What is your preferred length of time and/or frequency with which NGG may exercise a DSR contract? Do you have a preferred minimum response time if a DSR contract were to include one?

1.19. Again there was support from most respondents to develop this further as part of the detailed methodology. One respondent commented that they preferred a response time in excess of 4 hours. They said that shorter responses times may result in higher bids. Another commented that there should be no limit on interruption duration or frequency. A further noted that bids might be priced differently if the interruption was for a short period versus several days.

Chapter 4

What are your views on the three straw men?

1.20. One respondent supported straw man 1 if it could be developed further to include gas-fired generators. Straw man 2 was liked by some due to the fact that there were no option fees and that it was subject to a volume cap. Equally some preferred straw man 3 because it included option fees as these were viewed necessary to encourage participation. The general message was that they key criteria should be getting bids submitted at true cost. There was also a call for simplicity and clarity.

1.21. A number of respondents did not support any of the straw men. This was because they were not interested in participating or because of the links to cash-out.

Do you have any views on any other tender design issues?

1.22. One respondent raised the issue of double counting the volume of DSR available through different demand side arrangements. They also proposed an alternative mechanism. Another respondent suggested an obligation on the SO to record and maintain consumer contact details. Other respondents said that there needed to be confidence in the trigger point for exercising DSR and that it is used as a last resort. They considered that sufficient time was needed to enable shippers/traders to take advantage of the OCM remaining unfrozen before DSR is called upon.

Do you think a price cap is necessary to limit shipper liabilities?

1.23. Generally respondents did not favour a cap. This was due to the risk of any price cap acting as a target for gas prices. However concerns were raised about the potential for unlimited liabilities being passed back to consumers. One respondent commented that a price cap would be desirable if there was no administered price in stage 3 of a GDE.

Do you have any suggestions for how the volume cap in straw man 2 or 3 should be set?

1.24. One respondent suggested several options for setting the volume cap. These were a percentage of total DM volume, a percentage of the volume offered in the tender or the volume required in an N-1 supply loss scenario. Others commented that it should be left to the SO to determine as long as it was transparent. Another suggested that it was better to accept as much DSR as possible to incentivise price discovery. Any volume cap could be determined on the day of a GDE rather than be known ex ante.

Do you think the volume cap in straw man 2 or 3 is sufficient to prevent inefficiently high DSR bids from being accepted?

1.25. Some respondents said this was not the case as a cap creates the problem of accepting a small number of high priced bids to achieve the required volume. Others said it provided no assurance over the price that would be accepted. One respondent who thought it might be sufficient said so as long as there was sufficient competition.

Do you have any views whether or not straw man 2 should be paid as bid?

1.26. Most respondents favoured paid as bid over paid as clear. This was noted as being in line with other balancing tools. This also provided certainty over costs. One respondent in favour of paid as clear said that it was a better option as it should incentivise consumers to bid at their true VoLL.

Do you have any idea for how a fixed budget for straw man 3 could be set?

1.27. One respondent suggested that an estimate of the maximum potential volume could be used. A proportion of this multiplied by the fixed option fee would determine the budget. Other respondents commented that they preferred any budget to be for the volume rather than price.

Should any volume cap or fixed budget be known to market ex ante?

1.28. The majority of respondents were unsure without a view of how competitive the tender was or the number of participants. One stated they were against this as it could be inefficient and lead to gaming. Another supported knowing this if the security standard changed.

What do you think of the rationale for having fixed option fees in straw man 3? Why might they be necessary to ensure sufficient participation and competitive bidding?

1.29. Those against option fees said they were unnecessary to promote participation. The risk of no payment if a consumer did not participate should be sufficient.

1.30. Those in favour said it might not be worth the time and resource to develop a bid without an option fee. This was particularly so given the low probability of a GDE.

How could the fixed option fees be determined?

1.31. One respondent said that the fixed option fee could be determined by the administrative cost of submitting a bid. Another said this could be based on the cost of back up fuel. Other respondents said that this should be negotiated within the individual contracts and or left to participants to determine as part of their bid.

Do you have an alternative design package that you think better meets the aims of the DSR tender than the three set out here?

1.32. One respondent suggested an alternative where shippers would be obliged to submit a VoLL for tranches of their consumers' demand. These would be posted on a centralised system and only available to the SO. Shippers and consumers could amend these as they saw fit. Other respondents suggested extending the existing Operating Margins model or variations on the straw men proposed. There was general support for some form of trial of any mechanism before full implementation.

Appendix 3 - Glossary

A

Authority (The)

The Authority is the Gas and Electricity Markets Authority (GEMA). GEMA is the governing body of Ofgem and consists of non-executive and executive members and a non-executive chair.

C

Cash-out

National Grid Gas is responsible for residual balancing of the gas system. The prices paid for these balancing actions are then passed onto long and short shippers. That is, long shippers are paid at one rate for their positive imbalance and short shippers have to pay at a different rate for their negative imbalance. These charges are known as cash-out prices.

Cash-out (dynamic)

Dynamic cash-out means that the level of the cash-out is unfrozen and continues to change in response to circumstances upon declaration of stage 2 of an emergency.

Cash-out (frozen)

Under current gas emergency arrangements the cash-out price is frozen when stage 2 of an emergency is declared. That is, the cash-out price remains at the level it was at this time for the duration of the emergency.

D

Daily-metered (DM) consumer

This is a gas consumer with a meter which allows their consumption to be measured on a daily basis.

Demand Side Response (DSR)

A demand side response is a short-term change in the use of, in this case, gas by consumers following a change in the balance between supply and demand.

E

Emergency curtailment arrangements

The emergency curtailment arrangements provide for payments to be made to shippers in the event that transporters instruct, under the direction of the Network Emergency Coordinator, the curtailment of gas off-takes at any relevant supply

point. Shippers are still required to pay cash-out on their imbalances but curtailed quantities are subject to a trade between the shipper and the residual balancer at the Emergency Curtailment Trade Price.

Emergency Curtailment Trade Price

This is the price at which a shipper's emergency curtailment quantity is paid. This is determined as the 30 day average System Average Price.

European Gas Security of Supply Regulation

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 and repealing Council Directive 2004/67/EC. This regulation aims to improve European gas security of supply, and places a number of requirements on member states.

Exit Reform

The Reform of the NTS Exit Capacity arrangements also known as Exit Reform began in 2005 following the Authority's decision to approve National Grid Gas's sale of four of its distribution network businesses. The process concluded in January 2009 with the implementation of code modification UNC195AV known as the Introduction of Enduring NTS Exit Capacity Arrangements.

The reform was necessary to ensure NGG received efficient investment signals in respect of NTS users' capacity needs under the new arrangements. This reforms process has also resulted in changes being made to the stages of a national gas deficit emergency.

F

Firm consumer

This is a consumer with a non-interruptible gas supply contract. These consumers cannot be instructed to reduce their demand or have their demand curtailed except for following the announcement of stage 2 or greater of an emergency.

Firm load shedding

Upon declaration of stage 2 of an emergency, the Network Emergency Coordinator may instruct transporters of gas to instruct consumers stop using gas. This is known as firm load shedding. Firm load shedding starts with the largest consumers – who are typically large industrial users or power generators.

Force majeure

Force majeure is a way in which parties to a contract can agree on specific circumstances when a failure to perform an obligation will be excused (ie when the breaching party will not face liability for its breach).

G

[The Gas Act \(1986\)](#)

The Gas Act is a piece of primary legislation that prohibits persons from engaging in specified activities unless authorised to do so by a licence granted by the Authority. The Gas Act also sets out the powers of the Authority in carrying out its functions under Part I of the Gas Act.

[Gas Deficit Emergency \(GDE\)](#)

A Gas Deficit Emergency is a type of Gas Supply Emergency arising as a result of insufficient deliveries of gas being available to meet required demand on the gas system or as a result of a potential or actual breach of a safety monitor.

[The Gas Safety \(Management\) Regulations 1996 \(GS\(M\)R\)](#)

The GS(M)R set out the requirement for a Network Emergency Coordinator (NEC) for any network which includes more than one gas transporter. They also require each gas transporter, as well as the NEC, to prepare a safety case which must be approved by the Health and Safety Executive.

[Gas Supply Emergency](#)

A Gas Supply Emergency is defined in the Uniform Network Code as the occurrence of an event or series of events that results in, or gives rise to a significant risk of, a loss of pressure in the gas system which may lead to a supply emergency.

H

[Health and Safety Executive \(HSE\)](#)

The Health and Safety Executive (HSE) is the national independent watchdog for work-related health, safety and illness. The safety case produced by the Network Emergency Coordinator must be submitted to the HSE for their approval.

I

[Interconnector \(Gas\)](#)

The gas pipelines and associated terminals which connect the European and UK gas transmission networks.

[Interruptible contract](#)

An interruptible contract may be signed by gas consumers where the relevant transporter and/or supplier have the ability to ask a consumer to reduce its off-takes (generally daily metered consumers). These contracts allow the transporter and/or supplier to disconnect the consumer (in or out of an emergency) in order to manage demand on the system. Consumers may sign these contracts in return for reduced rates on their gas supply.

L

Licensee (Gas)

The Gas Act requires parties involved in the gas industry to be licensed by the Authority. As licence holders, these parties are required to comply with a number of licence conditions.

Licence condition

All parties licensed by the Authority to partake in gas industry activities are required to meet certain licence conditions. The licence conditions for the gas industry are categorised into transporter, shipper, supplier and interconnector licence conditions. The licence conditions are separated into standard licence conditions which apply to all licensees of one type (eg transporters) and special licence conditions which apply only to a specific party (eg National Grid Gas).

Liquefied Natural Gas (LNG)

Liquefied Natural Gas is natural gas (predominantly methane, CH₄) that has been converted temporarily to liquid form for ease of storage or transport.

Liquidity

Liquidity is a measure of the number of times a given commodity is traded. A low liquidity can mean that it is difficult for new entrants to enter into and grow in a market.

Local Distribution Zone (LDZ)

Local Distribution Zones (LDZs) are low pressure pipeline systems which deliver gas to final users and Independent Gas Transporters. There are twelve LDZs which take gas from the high pressure transmission system for onward distribution at lower pressures.

M

Market Balancing Action (MBA)

An action taken by National Grid Gas to balance the system in which it enters into a transaction with a party so that that party will agree to make an acquiring or disposing trade nomination. The prices at which these trades are made set cash-out prices.

Modification (Code)

The Uniform Network Code (UNC) is the framework which sets out the gas transportation arrangements for those parties licensed under the Gas Act 1986. This code has developed through modifications raised by signatories to the UNC. It is still possible for modifications to be made through this industry led process. However, the introduction of the Significant Code Review process now allows for Ofgem to lead on the development of modifications before directing them to be raised.

N

[National Grid Gas \(NGG\)](#)

National Grid Gas (NGG) is the Gas Transportation licence holder for the North West, West Midlands, East England and London Gas Distribution Networks. NGG also hold the Gas Transportation licence for the gas National Transmission System (NTS). Prior to 10 October 2005, NGG was known as Transco.

[National Transmission System \(NTS\)](#)

This is National Grid Gas' high pressure gas transmission system. It consists of more than 6,400 km of pipe carrying gas at pressures of up to 85 bar (85 times normal atmospheric pressure).

[Network Emergency Coordinator \(NEC\)](#)

The Network Emergency Coordinator is responsible under safety legislation for the coordination of a gas supply emergency.

[Non-daily metered gas consumer \(NDM\)](#)

This is a gas consumer who does not have a meter which can be read on a daily basis. This includes small consumers, including domestic consumers.

[Neutrality](#)

This refers to the system of Balancing Neutrality Charges which are used under the Uniform Network Code (UNC) to ensure that National Grid neither benefits nor loses financially from the balancing actions it is required to undertake. The charges reflect the difference between all amounts received and paid by National Grid for gas used to balance the system and are spread across all signatories of the UNC on the basis of their usage of the transportation system.

O

[On-the-day Commodity Market \(OCM\)](#)

This is the market on which trading takes place to allow NGG to balance the system. Shippers may also trade with each other on the OCM.

P

[Post Emergency Claim \(PEC\)](#)

The post emergency claims arrangements are used to recompense parties for flowing additional gas onto the system in an emergency if opportunity costs for shippers to do so exceed the cash-out price they received for being long.

[Project Discovery](#)

Project Discovery is Ofgem's investigation published in 2010 into whether or not future security of supply could be delivered by the existing market arrangements

over the coming decade. A copy of the report and associated documents can be accessed on our website.

Public Appeal

An appeal made by National Grid Gas to consumers in the event of a Gas Supply Emergency to reduce gas use.

S

Safety case

The Gas Safety (Management) Regulations 1996 set out the requirement for each transporter of gas to publish a safety case which must be approved by the Health and Safety Executive. These safety cases must demonstrate the method by which the holder will ensure the safe operation of its network. In the case of the Network Emergency Coordinator (NEC), the safety case includes details of the procedures that the NEC has established to monitor the situation throughout a supply emergency and for co-coordinating actions across affected parts of the gas network.

Safety and Firm Gas Monitor Methodology (Safety Monitor)

The Safety Monitor provides a requirement for sufficient gas to be held in storage to meet a number of criteria. This requirement remains valid in the event of a GDE.

Significant Code Review (SCR)

The SCR is a new modifications process introduced through the Code Governance Review. This process allows Ofgem to develop modifications proposals before directing them to be raised.

Shippers

Gas shippers buy gas from producers and sell the gas onto suppliers, and are defined as entity which introduces, conveys and takes out gas from a pipeline system.

Smearred/shared cost

This is a cost that is spread across all relevant parties. For example, the costs to National Grid of a certain activity may be spread across all shippers involved in the Great Britain gas market.

System Average Price

This is the weighted average price of all trades on a given day.

System Marginal Buy Price

The System Marginal Buy Price is the greater of the system average price plus the default system marginal price, and; the price of the highest balancing action offer price in relation to a Market Balancing Action taken by National Grid Gas for that day.

System Marginal Sell Price

The System Marginal Sell Price is the lesser of the system average price minus the default system marginal price, and the price of the lowest balancing action offer price in relation to a Market Balancing Action taken by National Grid Gas for that day.

System Operator

This is the entity responsible for operating the Great Britain transmission system and for entering into contracts with those who want to connect to and/or use the transmission system. National Grid is the GB system operator.

T

Therm

A unit of heating value equivalent to 100,000 British thermal units (Btu).

The Third Package

The Third Package is a key step in implementation of the internal European energy market. It recognises the need for better co-ordination between European network operators and continuing co-ordination between regulators at that level.

When discussing the 'Third Package' in this document we are referring to Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and to Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators.

Transporter (Gas)

The holder of a Gas Transporter's licence in accordance with the provisions of the Gas Act 1986.

U

Uniform Network Code (UNC)

The UNC defines the rights and responsibilities for all users of gas transportation systems in Great Britain. The UNC is, in effect, a contract between the gas transporter and the users of its pipeline system.

Uniform Network Code (UNC) – Section Q

Section Q of the UNC is the main framework which sets out the arrangements that will be in place in the event of declaration of a gas emergency.



V

Value of Lost Load (VoLL)

This is the theoretical price at which a consumer would rather have their gas supply disconnected than continue to pay for a firm supply.

Appendix 4 - Feedback questionnaire

1.1. Consultation is at the heart of good policy development. We're keen to consider any comments or complaints about the way we've conducted this consultation. In any case we would be keen to get your answers to these questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand? Could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?

1.2. Please add any further comments and send your response to:

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