














UNC Request Workgroup Report		At what stage is this document in the process?
<h1>UNC 0669R:</h1> <h2>Review of the Gas Deficit Warning (GDW) and Margins Notice (MN) Arrangements</h2>		<div style="display: flex; flex-direction: column; gap: 5px;"> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 2px; display: flex; align-items: center; gap: 5px;"> 01 Modification </div> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 2px; display: flex; align-items: center; gap: 5px;"> 02 Workgroup Report </div> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 2px; display: flex; align-items: center; gap: 5px;"> 03 Draft Modification Report </div> <div style="border: 1px solid #ccc; border-radius: 5px; padding: 2px; display: flex; align-items: center; gap: 5px;"> 04 Final Modification Report </div> </div>
<p>Purpose of Request:</p> <p>To review the processes, timeliness, and information provision associated with National Grid's gas security of supply notices and to review the name of the Gas Deficit Warning notice.</p>		
	The Workgroup recommends that the Panel consider this report.	
	High Impact: None	
	Medium Impact: GB gas market participants, National Grid NTS	
	Low Impact: None	

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Timetable		
This report will be presented to the Panel on 15 August 2019.		
The Workgroup recommends that the Panel consider this report and close the Workgroup.		
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1 Request Summary

Why is the Request being made?

At present, National Grid NTS has two main tools to provide notice to GB gas market participants of a possible imbalance between gas demand and supply:

- Margins Notice (MN) – issued if forecast demand for the day ahead exceeds a pre-defined forecast of supply; and
- Gas Deficit Warning (GDW) – issued if there is a more serious supply and demand imbalance leading to a material risk to the end of day balance on the NTS. The procedures are described in more detail on the National Grid website.¹

The purpose of a GDW is to provide a message to GB market participants to provide more gas or reduce demand. On 01 March 2018, National Grid NTS issued its first ever GDW in response to coincident events involving cold weather, high gas demand, and supply failures. The GDW had its desired effect on this day as the risk of an end-of-day system imbalance was addressed². However, National Grid NTS considers that the term 'Gas Deficit Warning' may not adequately reflect this purpose and could be misinterpreted by the public.

National Grid NTS also considers that the time is right to review these notification arrangements with the industry, share learnings from operational experience on 01 March 2018 and improve the arrangements for the future. Changes in the electricity market have also occurred since the MN/GDW rules were introduced which serve as an additional driver for this review.

Scope

To review the GDW and MN notifications, the GDW name, trigger mechanisms, timeliness, and the information provision that supports these notification processes.

Impacts & Costs

The key impacts of this change are currently considered to be:

- industry contracts that support gas demand side response;
- information provision requirements that support the MN/GDW processes; and
- knock-on impacts in the electricity market.

It is not currently expected that this Request will result in any material implementation cost.

¹ <https://www.nationalgrid.com/uk/gas/balancing/margins-notices-mn-and-gas-deficit-warnings-gdw>

² The MN has not been used since its introduction in 2012, though it is likely that one would have been issued on 1st March 2018, had National Grid NTS not moved straight into the GDW.

Recommendations

The objective of this Request is to explore whether the timeliness and effectiveness of National Grid NTS' notifications that alert the industry about a potential gas supply / demand imbalance can be improved without causing wider, unwarranted alarm.

2 Impacts and Costs

Consideration of Wider Industry Impacts

National Grid NTS is also planning to review the Gas Demand Side Response (DSR) arrangements in parallel to this Request. The pre-mod discussion for this review 0669R at Transmission Workgroup on 06 September 2018 highlighted that the two pieces of work are closely linked; this Request may impact the Gas DSR review because the latter is triggered when a GDW is issued. National Grid NTS therefore expects that this Request will help to inform the Gas DSR review³.

Aside from the review of the Gas DSR arrangements, National Grid NTS does not currently anticipate any other wider industry impacts.

Impacts

Impact on Central Systems and Process	
Central System/Process	Potential impact
UK Link	<ul style="list-style-type: none"> None identified
Operational Processes	<ul style="list-style-type: none"> None identified

Impact on Users	
Area of Users' business	Potential impact
Administrative and operational	<ul style="list-style-type: none"> Yes – if information provision arrangements change, administrative and operational aspects within Users' businesses may be impacted.
Development, capital and operating costs	<ul style="list-style-type: none"> Improved frequency and accuracy of communications about the system balance should enable market prices to better reflect supply/demand fundamentals which may serve to reduce shippers' commercial exposure in respect of imbalance charges and hence their operating costs.
Contractual risks	<ul style="list-style-type: none"> If the GDW name is changed, there may be a consequential impact within some User's contracts if the term currently features in those contracts. However, no material change in contractual risk for Users is currently envisaged.

³ For further information please see: <http://www.gasgovernance.co.uk/gasdsr>

Impact on Users	
Legislative, regulatory and contractual obligations and relationships	<ul style="list-style-type: none"> None identified

Impact on Transporters	
Area of Transporters' business	Potential impact
System operation	<ul style="list-style-type: none"> None identified. This Request is primarily concerned with information flows and communications.
Development, capital and operating costs	<ul style="list-style-type: none"> National Grid NTS would expect to incur costs associated with the implementation of internal process changes and updates to various procedures, documents and website, but these are not expected to be material.
Recovery of costs	<ul style="list-style-type: none"> None identified
Price regulation	<ul style="list-style-type: none"> None identified
Contractual risks	<ul style="list-style-type: none"> None identified
Legislative, regulatory and contractual obligations and relationships	<ul style="list-style-type: none"> None identified
Standards of service	<ul style="list-style-type: none"> None identified

Impact on Code Administration	
Area of Code Administration	Potential impact
Modification Rules	<ul style="list-style-type: none"> None identified
UNC Committees	<ul style="list-style-type: none"> None identified
General administration	<ul style="list-style-type: none"> None identified
DSC Committees	<ul style="list-style-type: none"> None identified

Impact on Code	
Code section	Potential impact
TPD, Section D, 4.1.1, 5.1.1, & 5.1.2	<ul style="list-style-type: none"> Yes, if the term 'Gas Deficit Warning' is changed.
TPD, Section V, 5.9.4, 5.9.5, 5.9.6, & 5.9.7	<ul style="list-style-type: none"> Yes, if the term 'Gas Deficit Warning' is changed. Yes, if the Margins Notice methodology is changed.

Impact on UNC Related Documents and Other Referenced Documents	
Related Document	Potential impact
Network Entry Agreement (TPD I1.3)	<ul style="list-style-type: none"> None identified

Impact on UNC Related Documents and Other Referenced Documents	
General	Potential Impact
Legal Text Guidance Document	<ul style="list-style-type: none"> None identified
UNC Modification Proposals – Guidance for Proposers	<ul style="list-style-type: none"> None identified
Self Governance Guidance	<ul style="list-style-type: none"> None identified
TPD	Potential Impact
Network Code Operations Reporting Manual (TPD V12)	<ul style="list-style-type: none"> None identified
UNC Data Dictionary	<ul style="list-style-type: none"> None identified
AQ Validation Rules (TPD V12)	<ul style="list-style-type: none"> None identified
AUGE Framework Document	<ul style="list-style-type: none"> None identified
Customer Settlement Error Claims Process	<ul style="list-style-type: none"> None identified
Demand Estimation Methodology	<ul style="list-style-type: none"> None identified
Energy Balancing Credit Rules (TPD X2.1)	<ul style="list-style-type: none"> None identified
Energy Settlement Performance Assurance Regime	<ul style="list-style-type: none"> None identified
Guidelines to optimise the use of AQ amendment system capacity	<ul style="list-style-type: none"> None identified
Guidelines for Sub-Deduct Arrangements (Prime and Sub-deduct Meter Points)	<ul style="list-style-type: none"> None identified
LDZ Shrinkage Adjustment Methodology	<ul style="list-style-type: none"> None identified
Performance Assurance Report Register	<ul style="list-style-type: none"> None identified
Shares Supply Meter Points Guide and Procedures	<ul style="list-style-type: none"> None identified
Shipper Communications in Incidents of CO Poisoning, Gas Fire/Explosions and Local Gas Supply Emergency	<ul style="list-style-type: none"> None identified
Standards of Service Query Management Operational Guidelines	<ul style="list-style-type: none"> None identified
Network Code Validation Rules	<ul style="list-style-type: none"> None identified

Impact on UNC Related Documents and Other Referenced Documents	
OAD	Potential Impact
Measurement Error Notification Guidelines (TPD V12)	<ul style="list-style-type: none"> None identified
EID	Potential Impact
Moffat Designated Arrangements	<ul style="list-style-type: none"> None identified
IGTAD	Potential Impact
	<ul style="list-style-type: none"> None identified
DSC / CDSP	Potential Impact
Change Management Procedures	<ul style="list-style-type: none"> None identified
Contract Management Procedures	<ul style="list-style-type: none"> None identified
Credit Policy	<ul style="list-style-type: none"> None identified
Credit Rules	<ul style="list-style-type: none"> None identified
UK Link Manual	<ul style="list-style-type: none"> None identified

Impact on Core Industry Documents and other documents	
Document	Potential impact
Safety Case or other document under Gas Safety (Management) Regulations	<ul style="list-style-type: none"> Yes, if the term 'Gas Deficit Warning' is changed, various references will need to be updated throughout the Safety Case.
Gas Transporter Licence	<ul style="list-style-type: none"> Yes, if the term 'Gas Deficit Warning' is changed, Special Condition 8I: Development and implementation of a Demand Side Response methodology for use after a Gas Deficit Warning.

Other Impacts	
Item impacted	Potential impact
Security of Supply	<ul style="list-style-type: none"> Yes – this Request aspires towards a beneficial impact for security of supply by improving the communications made by National Grid to the industry at times when demand is projected to exceed supply.
Operation of the Total System	<ul style="list-style-type: none"> None identified
Industry fragmentation	<ul style="list-style-type: none"> None identified

Terminal operators, consumers, connected system operators, suppliers, producers and other non-code parties

- Terminal operators, producers and suppliers should be aware of the proposed changes but no direct impacts are envisaged. Consumers are expected to benefit from a reduced sense of alarm in the gas market due to more accurate terminology and by an increased likelihood that gas prices reflect market fundamentals.

3 Terms of Reference

Topics for Discussion

- Agree a 'problem statement'
- Agree the objectives of the Request
- Assessment of alternative means to achieve objective
- Development of Solution (including business rules if appropriate)
- Assessment of potential impacts of the Request
- Assessment of implementation costs of any solution identified during the Request
- Assessment of legal text should a solution be identified.

Outputs

Produce a Workgroup Report for submission to the Modification Panel, containing the assessment and recommendations of the Workgroup including a draft modification.

Composition of Workgroup

The Workgroup is open to any party that wishes to attend or participate.

A Workgroup meeting will be quorate provided at least two Transporter and two User representatives are present.

Meeting Arrangements

Meetings will be administered by the Joint Office and conducted in accordance with the Code Administration Code of Practice.

4 Modification(s)

Progress towards Modification Proposals

Workgroup have worked steadily towards the aim of a review of:

- the GDW and MN notifications,
- the GDW name,
- trigger mechanisms,
- timeliness, and
- the information provision that supports these notification processes.

Modification 0685 - *Amendment of the UNC term 'Gas Deficit Warning' to 'Gas Balancing Notification'* was raised on 02 April 2019 after discussion at Workgroup. Some Workgroup Participants did not agree that the name GDW needed to be changed and expressed concern about potential effects where referenced in contracts. The Modification was considered by Panel on 18 April and was sent out for consultation with consultation close out on 21 May 2019. The Final Modification Report was presented to Panel in June 2019. Panel recommended Modification 0685 was suitable for implementation by majority

vote and the Final Modification Report is now with Ofgem, awaiting a decision on implementation. Further details are available here:

<http://www.gasgovernance.co.uk/0685>

Margins Notice (MN) Arrangements

Workgroup ~~worked~~ towards a further Modification Proposal focusing on the Margins Notice (MN) Arrangements. This Modification ~~0698S~~, entitled "Improvements to Margins Notice Arrangements" ~~was~~ submitted to the July UNC Panel ~~and subsequently sent out for consultation which will close on 08 August 2019~~. This Modification ~~0698S~~ ~~proposes~~ four changes as follows:

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1. *New 'early warning' notification of a reducing gap between expected available supply and forecast demand within the Winter Period:* When the D-1 demand exceeds 95% of the expected available supply, an Active Notification Communication via the Active Notification System (ANS) will provide an 'early warning' to Users that forecast demand is *approaching* the expected levels of supply which may therefore lead to the subsequent issue of a Margins Notice, if not addressed. This will be applicable only during winter.
2. *Limit the use of Margins Notices to the winter:* Amendment of the Margins Notice process so that it is a winter only process, (01 October to 31 March each year)⁴.
3. *Specific method determining the LNG contribution to non-storage supplies:* Inclusion of a new LNG methodology determining LNG Expected Available Supply within UNC.
4. *Monitoring Obligation for Non-Storage Supplies:* No change is proposed to the current process whereby Non-Storage Supply determinations for UKCS, Norway and Interconnectors are established in Winter Outlook, monitored by National Grid Gas over winter and adjusted where necessary. However, this activity will be done under a UNC obligation.

Having been discussed at Workgroup 0669R, culminating in the consideration of the proposed text and the proposed Legal Text of the Modification Proposal ~~0698S~~ on 04 July 2019, the Modification ~~will be considered at the JNC Modification Panel on 15 August with a view to implementation for 01 October 2019~~.

- Deleted: is proposed to go directly to consultation after initial Panel consideration on 18 July 2019, This will enable a
- Deleted: decision
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National Grid will also monitor the impact of the ~~potential~~ interconnector methodology over the Winter period 2019/20 and will share its findings with the Transmission Workgroup. See Section below entitled '**Interconnector Assessment Updates to Transmission Workgroup**'.

The changes proposed represent incremental improvements to the existing information made available to the market where the difference between supply and demand is narrowing. Thus, the Proposal is to utilise self-governance arrangements.

These changes to the methodology are proposed to be included in the UNC together with the frequency of these processes. National Grid will be obliged to review Non-Storage Supply (NSS) contribution to Expected Available Sources.

National Grid have proposed a new process for Margins Notice calculation, whereby the Margins Notice is triggered if:

⁴ Note the winter definition used here is different to the Winter Period which is 01 November – 30 April.

Total Max Use < Demand Forecast

Where

$$\text{Total Max Use} = (\text{NSS Assumption} + \text{Storage Max Use} + \text{LNG Assumption} + \text{Interconnectors Assumption})$$

In summary, each of these terms is addressed as follows:

- NSS – to be reviewed monthly, covering just UKCS, Norway and Interconnectors.
- Storage – reviewed daily – current process to remain.
- LNG – reviewed daily – new methodology.

LNG

Workgroup noted that National Grid has rejected use of CWV as a predictor for LNG flows as the data does not show a consistent correlation for the last 3 years. National Grid therefore further developed the LNG Methodology based on usable stock.

- For the Expected Cold Weather Capability National Grid suggested using the 95th percentile of winter period LNG flow data from the last 3 years. (Sum of the individual LNG terminal 95th percentiles, rather than the 95th percentile of the aggregate LNG flows)
- Usable Stock is divided by 2 to reflect the principle also included in the existing storage methodology.
- For the Minimum Storage Tank Level (MSTL), National Grid has taken the minimum storage tank levels seen over the past 3 years at each LNG terminal, then reduced by the Boil Off Rate for each for 18 days. 18 days is National Grid's proposed assumption of the amount of time required for a boat to complete its voyage and unload at a UK terminal.

Workgroup reviewed these three suggestions and agreed they appeared suitable with the Modification including the rationale as to why the Usable Stock is divided by 2. National Grid provided confirmation that it had engaged with South Hook Gas regarding the MSTL methodology.

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It is proposed that the LNG Expected Available Supply in respect of a Gas Flow Day (LNG_d) is equal to:

$$LNG_d = \text{Min} \left[ECWC_d, \frac{US_d}{2} \right]$$

where:

Min means the lower of

$ECWC_d$ means the expected cold weather capability for all LNG Importation Facilities for the Gas Flow Day which is equal to:

$$ECWC_d = \sum SEPLIF_p$$

where:

\sum means the sum across all relevant System Entry Points;

$SEPLIF_p$ means the 95th percentile of the Entry Point Daily Quantity Delivered at a System Entry Point of an LNG Importation Facility (for delivery to the Total System) within the winter (i.e. 1 October in any year until 31 March in the following year) in the previous three Gas Years;

US_d means the aggregate Usable Stock at all LNG Importation Facilities for the gas flow day which is equal to:

$$US_d = SL_d - MSTL_d$$

where:

SL_d means the aggregate volumes of gas at each LNG Importation Facility for the relevant Gas Flow Day as notified to National Grid NTS by each of the relevant Delivery Facility Operators; and

$MSTL_d$ means National Grid NTS's determination of the aggregate of an amount of gas in respect of each LNG Importation Facility which is equal to the lowest volume of gas which has been held in stock at that facility at any time up to and including 15 September in the current Gas Year and in each of the whole of the previous two Gas Years, provided that (i) such lowest volume of gas shall be reduced by the amount which National Grid NTS reasonably believes would have boiled off over the following 18 days at that facility; and (ii) where the value determined for that facility for the purposes of this $MSTL_d$ calculation exceeds the value so determined for the period commencing at 05:00 on 1 October 2019 and ending at 05:00 on 1 April 2020, the value so determined for the period commencing at 05:00 on 1 October 2019 and ending at 05:00 on 1 April 2020 shall apply.

Interconnectors Supply

National Grid analysed the D-1 data available and presented its findings to Workgroup. The conclusion from this is that when the MN trigger level is being derived, the D-1 Nominations data is not representative of actual flows seen on the gas day D. Therefore, National Grid initially proposed an alternative methodology for Interconnector data, based on the hub price differential (NBP and TTF or NBP and ZEE) and the average flow based on either the previous 2 days or 7 days. The Workgroup noted a stronger correlation based on the previous 2 days. National Grid then established how many

times the Margins Notice would have been triggered using a combination of the proposed new LNG Methodology and the initially proposed Interconnector methodology. This led National Grid to recommend and Workgroup to agree that the Interconnector calculation method should remain as is and the newly proposed LNG Methodology should be the only change included in Modification 0698S.

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Slides illustrating the effect of the proposed changes overlaid onto the situation which occurred around 01 March 2018 were presented to Workgroup on 06 June 2019, and can be found here (see slides 8-16):

<http://www.gasgovernance.co.uk/0669/060619>

At Workgroup on 04 July National Grid updated two of these slides to add the demand data (please see slides 3 and 4):

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<http://www.gasgovernance.co.uk/0669/040719>

Possible further work for the future

Workgroup reviewed other areas for future improvement and agreed that 0669R should close in August 2019.

Interconnector Assessment Updates to Transmission workgroup

Workgroup asked and National Grid agreed to provide shadow analysis updates at appropriate points over the winter/spring period to Transmission workgroup. These would cover the impact of the potential Interconnector Methodology were it to have been included in the new Margins Notice Methodology. The potential Interconnector Methodology in question was discussed but not taken forward by National Grid as part of Workgroup 0669R. This is detailed in April 0669R slides from National Grid which can be found here: <https://www.gasgovernance.co.uk/0669/150419>

The reason for non-inclusion was due to the potential for Margins Notices to be triggered on days when additional supplies were not really needed. The analysis which showed this is included in the 0669R slide pack from National Grid (slides 8-13) shown at the June 2019 Workgroup:

<https://www.gasgovernance.co.uk/0669/060619>

Some Workgroup Participants were concerned about the lack of inclusion of this level of detail from the Margins Notice assessment; this detail could have contributed to making the assessments more dynamic.

The updates are envisaged to therefore cover the number of occurrences of Margins Notices under

1. The current (June 2019) methodology,
2. The methodology included in the Modification entitled 'Improvements to Margins Notice Arrangements' and
3. The inclusion of the Interconnector Methodology which had been considered in 0669R Workgroup.

Any additional further work can be done under a new Review in future.

Summary of areas for possible further work:

- Consideration of declining linepack;
- Probability/risk of failure (de-rating?) e.g. recognising effects of field/asset life – UKCS;
- Potential for examination via Monte Carlo type analysis (probability distribution functions);

- Consideration of whether April should be included in the time period;
- Consideration of operation outside of the Winter Period based on demand level.

5 Recommendation

The Workgroup invites Panel to:

- DETERMINE that Request 0669R should be closed.

Deleted: extended for one month to allow final assessment by Workgroup.