

Gas System
Operator

0669R - Review of MN & GDW Arrangements

6th December 2018

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Action 1106 & System Management Overview

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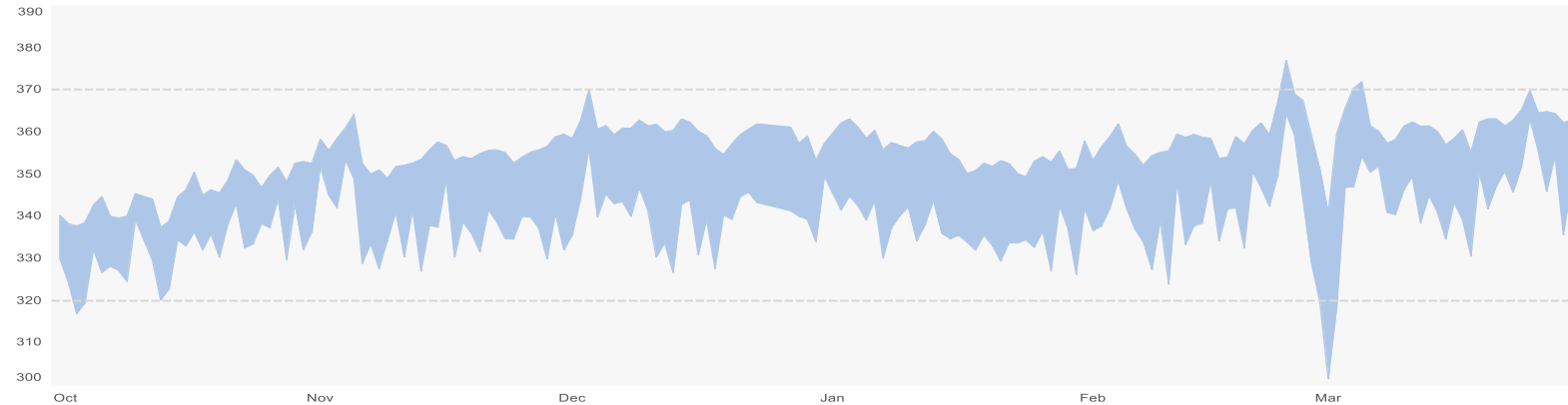
System Management

- [System Management Principles Statement](#) (SMPS) predominantly sets out decisions and options on the basis of imminent gas flows and prevailing physical and commercial circumstances
- Clearly sets out National requirements and Localised requirements:
 - **National requirement** is one which affects the whole NTS e.g. where linepack levels anticipated to move outside NG NTS determined ranges. This is in conjunction with our role as residual balancer. Tools include OCM title, OTC (when GDW is issued) and Operating Margins
 - **Localised requirement** is one where measures targeted at specific locations e.g. key operational parameters like pressure or local linepack fall outside acceptable levels. Further tools available include locational gas, flow swaps, capacity auctions, OM etc
- Under Residual Balancing general principle – National Grid accepts economic and efficient offers, and will trade predominantly via the OCM
- But where information indicates supplies into NTS are at, or very close to, anticipated maximum available, National Grid may favour taking offers on OCM Physical or Locational markets rather than OCM NBP Title market offers, since National Grid considers that in such circumstances these actions are more likely to produce a required direct physical effect on the network.

System Management

- **Tues 27th Feb – Thurs 1st March:** General principles would define as a National requirement, with a temporary Localised requirement materialising after lunch on 1st March.
- At no point during this period did we think insufficient gas supplies were available.
- System linepack level requirements not a specific figure and varies across the year and within day.
- Generally, more linepack held in system at higher demand levels for efficiency, and to manage increased pipeline pressure losses associated with higher flows and/or the likelihood of increased within day swings.

Daily Linepack Range - Winter 2017/18



Data excludes 24th-26th Dec and 1st Jan

System Management

- **Monday** – Linepack opened at relatively high levels for the prevailing conditions. No actions taken with PCLP close to opening but 7mcm was lost out of line with actual linepack finishing some 5.3mcm less than the final PCLP. SAP finished at 70.8p/th (over 15p/th up from the Sunday)
- **Tuesday** – Linepack comfortably within acceptable tolerances, following light position, traded 1mcm volume on OCM (not much volume being presented). SMP buy set at £1.25p/th (trades above £1 unusual), which was a 40p/th margin to the SAP for the day at 85.5p/th. A clear incentive to not under deliver, but a further 8.2mcm was lost out of line
- **Wednesday** – Linepack still comfortable. Following a light position traded 5.9mcm volume. SMP buy set at 200p/th (unprecedented) which was a 32p/th margin to SAP which had now climbed to 168.6p/th. PCLP close to opening going past midnight.
- **Wednesday Night** – Unprecedented, unanticipated and concurrent supply losses experienced late in the Gas Day, with insufficient time for National Grid and the Market to react. 9 supply reductions between 01:00 and 05:00, and a further 9.5mcm was subsequently lost out of line.

System Management

- **Thursday** – Despite the previous days' losses, linepack was not at critical levels, but at the lower end of what we would normally consider to be acceptable. Clearly with large amounts of supply currently out with an uncertain return, and with a starting imbalance of -47 mcm, a decision was made to issue a GDW, OCM balancing trades, and scaleback of exit capacity commenced early.

0.6mcm volume lost against opening linepack, £4.99 SMP buy against a day SAP of 372.6p/th.

This was still a national balance issue, but with the light position and increasing demand, a large within day linepack swing was forecast. Whilst no specific constraint location had been identified, linepack was projected to fall below normal within day operating range.

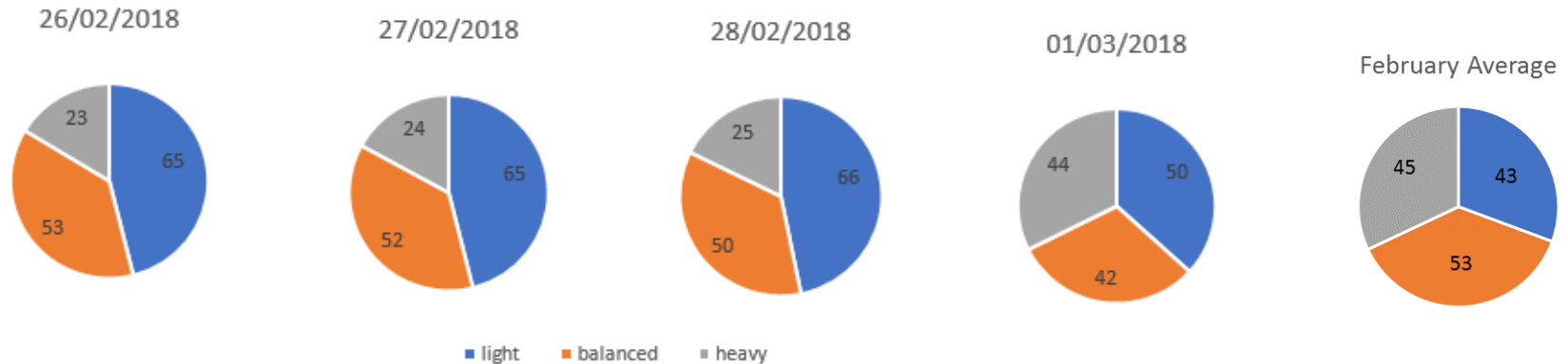
NB: The impact of a reduction in linepack on the network is dependent on the ability to distribute linepack evenly across the system, and there was therefore increased risk of not meeting pressure obligations, and that a localised constraint may manifest itself if the balance was not addressed, or if National Grid's ability to distribute linepack was impacted. On the basis a physical response was required, Locational offers were requested.

With no Locational offers and still a significant imbalance, OM was employed to manage a South West localised requirement over the dinner time load as linepack had depleted. Additional supplies as identified at LNG and IUK materialised, and the day balanced close to opening.

Shipper Imbalance in the run up to 1st March

- Cumulative stock loss were observed in the days preceding 1st March.
- An element of this stock loss was necessary as linepack was approaching operational maximum limits in the preceding week, however stock losses and shipper imbalances lead to a significant depletion of linepack leading up to 1st March

Number of Shippers balanced each day



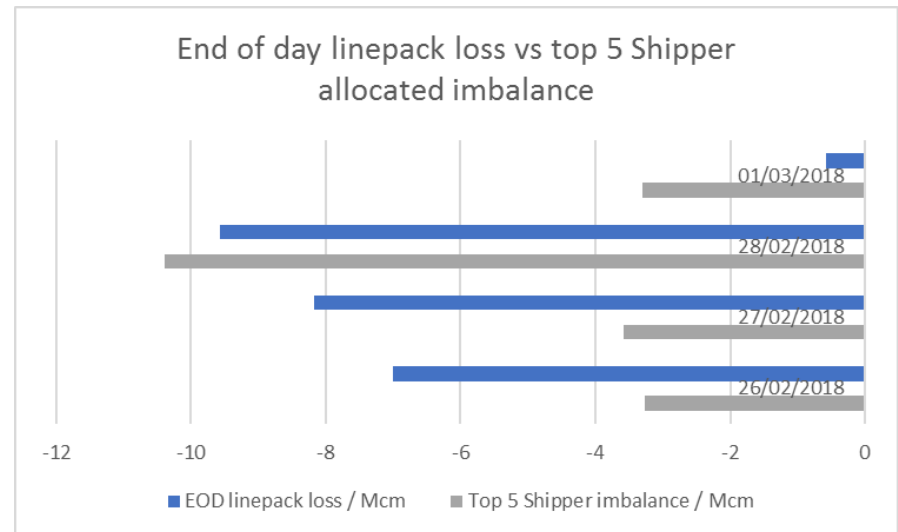
Shipper Imbalance in the run up to 1st March

Top 5 most negative allocated imbalances per day (kwh)

	26/02/2018	27/02/2018	28/02/2018	01/03/2018
Shipper A	-9,024,680	-12,553,976	-44,562,220	-11,034,859
Shipper B	-8,926,431	-10,360,591	-20,135,713	-10,973,931
Shipper C	-6,663,174	-7,457,955	-18,955,954	-5,226,344
Shipper D	-6,617,389	-5,364,120	-15,560,172	-4,786,742
Shipper E	-4,713,905	-3,725,036	-15,116,159	-4,339,809

- Many Shippers carried large imbalances. The top 5 negative imbalances alone accounted for more than half of the total each day.

- Converting to mcm shows the proportion of linepack depletion that could have been avoided if the top 5 shippers had balanced.



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Action 1103: NSS Amendments Winter 17/18

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Action 1103: NSS Amendments Winter 17/18

Date	NSS Figure	Reason for Change	Communication
01/10/2017	354	Set pre-Winter based upon historic flows, and producers forecast for UKCS.	Joint Office Website , Daily Margins Notice & Safety Monitor Report, Winter Outlook Report.
07/02/2018	382	The reclassification of Rough Storage and some of the categories flowing above the initial baseline triggered the NSS review. (UKCS,Norway,IUK)	Joint Office Website, Daily Margins Notice & Safety Monitor Report.
01/03/2018	341	This NSS number was revised based on additional information available from the G.A.S report and verbal updates from terminals.	Due to changing supply scenario, and flow of information and timings, we were unable to follow agreed communication route, the daily MN number was provided via MIPI.
02/03/2018	362	This NSS number was revised based on additional information available from the G.A.S report and verbal updates from terminals.	Due to changing supply scenario, and flow of information and timings, we were unable to follow agreed communication route, the daily MN number was provided via MIPI.

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Margins Notice
Options

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Risk Bow-Tie

CAUSES

- CA1. Set pre-winter and updated infrequently **1A**
- CA2. Winter outlook uses historical data for imports (are the fundamentals still the same?) (e.g. UKCS numbers all the same in winter outlook in three different scenarios)
- CA3. Review of NSS is currently just an internal NG exercise
- CA4. Need to link-in Remit Notifications (to take expected outages into account)
- CA5. Lack of awareness of offshore problems **1B**
- CA6. Over inflated view of how much LNG terminals can provide
- CA7. Over inflated view of how much interconnectors can provide
- CA8. Costs of transportation of gas into UK not reflected in calculation

CA9. This data is not easy to access or find **2**

PROACTIVE CONTROLS

- A.Undertake dynamic review of NSS on daily basis **1A**
- B.Use weather input to forecast supply availability
- C.Frequency of re-forecasting of NSS
- D.Need to include forecast data in Daily Margins Notice and safety monitor report (Store historical assumptions / underlying data for future analysis) e.g. On MIPI **2**
- E.Consider publishing breakdown of how NSS is calculated (but care not to lead the market) (publish methodology for the NSS forecast)
- F.Have an incentive regime for National Grid to get it right?
- G.Use de-rated factor

REACTIVE CONTROLS

H.

There is a risk that the NSS figure underpinning the Margins Notice calculation is not dynamic enough

CONSEQUENCES

- CO1. Supply figures appear more inflated than they really are
- CO2. Supply figures appear too low
- CO3. The Margins Notice is not triggered often enough
- CO4. The Margins Notice could be issued too frequently if trigger levels are too low and would lose its potency
- CO5. We move directly into a GDW because we are unable to trigger a Margins Notice using the current calculation
- CO6. Supply doesn't reflect market conditions

Time

Margins Notice Options

Data Quality	Publication	Methodology
<p>National Grid 1A</p> <ul style="list-style-type: none"> • Set pre-Winter using historical flows • Currently NG only review • Review frequency 	<p style="text-align: right;">2</p> <ul style="list-style-type: none"> • RAG status • NSS figure breakdown • Daily Margins Notice & Safety Monitor Report – Visibility • Daily Margins Notice & Safety Monitor Report – Include forecasts up to 5 days ahead 	<p style="text-align: right;">3</p> <ul style="list-style-type: none"> • Interconnector numbers separated from NSS • LNG number separated from NSS • Storage deliverability number • Use range for NSS rather than specific number
<p>Industry 1B</p> <ul style="list-style-type: none"> • Interconnectors • LNG • Offshore UKCS terminals • Remit Notifications • G.A.S Report 		

Suggested Prioritisation:

Industry Data Quality > NG Data Quality > Methodology > Publication

Industry Data Quality for Margins Notice

How could we improve the quality of the data which informs the NSS figure?

Offshore UKCS

LNG

Interconnectors

G.A.S Report

- One way to make the NSS figure more dynamic would be to receive the following information on a more regular basis:
 - Actual maximum supply data
 - How long it would take terminals to achieve this rate
 - And the same for the following Gas Day
- When this information was received for 1st March GDW via the G.A.S Report, National Grid were able to amend NSS to a more accurate figure
- What is the best way to acquire this information? Could we increase the frequency of the G.A.S Report?

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GDW Name
Change

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GDW – Suggestions for name change

Gas	Deficit	Warning
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- Proposed following options:

Gas	Balancing	Notice
	Market	Notification
	Linepack	Signal

- National Grid preference:

Gas	Balancing	Notification
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Further
information

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Action 1102: ANS – Joining & Leaving Distribution Lists

- National Grid notified by the Customer onboarding Lifecycle team from Xoserve regarding new shippers.
- All shippers should have an ANS account which they manage themselves. Shippers can manage their ANS preferences by:
 - Adding and updating up to 10 contacts which can be 'enabled/disabled'
 - Specifying whether alerts should be sent to an email address or phone number
 - Opting in or out of these alerts – Within Day Demand Attribution, Day Ahead Demand Attribution, Use It Or Lose It figure availability, UIG value updates
- If a shipper does not have an account, they can contact .box.GNCC.SystemsSupport@nationalgrid.com
- Can also sign up to receive GDW specific communications via text or email at this link: <https://nationalgrid.us6.list-manage.com/subscribe?u=4674811e1f&id=05fb0ffd09>

Ops Forum Agendas

October 25th 2018

1. Operational Overview
2. Brexit Update
3. Winter outlook
4. Preparedness for winter - discussion
5. NTS Overview
6. Xoserve Update
7. Operational Data Enhancement paper – feedback so far
8. Queries this month
9. Forum dates 2019
10. Axe the Fax

November 29th 2018

1. Brexit – Day 1
2. GASSCO overview
3. Operational Overview
4. Linepack Strategy
5. Interesting Days
6. Winter Preparedness
7. Emergency Exercise Zeus
8. Winter Outlook Questions
9. Margins Notice & Gas Deficit Warning review
10. NG position on Gas Balancing Review
11. Signpost: Operational Data Working Group

All Ops Forum slides can be accessed at this link:

<https://www.nationalgridgas.com/data-and-operations/operational-forum>

Information Provision Enhancements

On 6th November the consultation closed for providing feedback on our Information Provision Enhancements paper. This set out our information provision proposals in response to feedback from customers and stakeholders in three areas:

- Standardisation of the system maintenance window
- Closure of data item gaps
- Publication of additional data items

The paper can be viewed at this link:

<https://www.nationalgridgas.com/sites/gas/files/documents/Information%20Provision%20enhancement%20proposals.pdf>

We are now establishing a group to work alongside National Grid to:

- Identify any necessary asset/system investment, and
- Prioritise enhancements the industry require and will benefit from as soon as possible

The date of the first 2019 Working Group meeting will be shared before Christmas

To provide further feedback on the Operational Data Enhancements paper, or participate in the associated Working Group, please contact Karen Thompson, Gas Operational Liaison Manager (karen.thompson@nationalgrid.com).