

**Gas
Transmission**

Gas Operational Forum

MS Teams

19 May 2022

10.02am

Questions

MS Forms (link in the chat)

Teams Chat

nationalgrid



**Gas
Transmission**

Introduction & Agenda

Martin Cahill
Senior Operational Liaison Officer

nationalgrid



Presenters

National Grid Gas

Craig James – Head of Operational Delivery

Martin Cahill – Senior Operational Liaison Officer

Mathew Currell – Senior Operational Liaison Officer

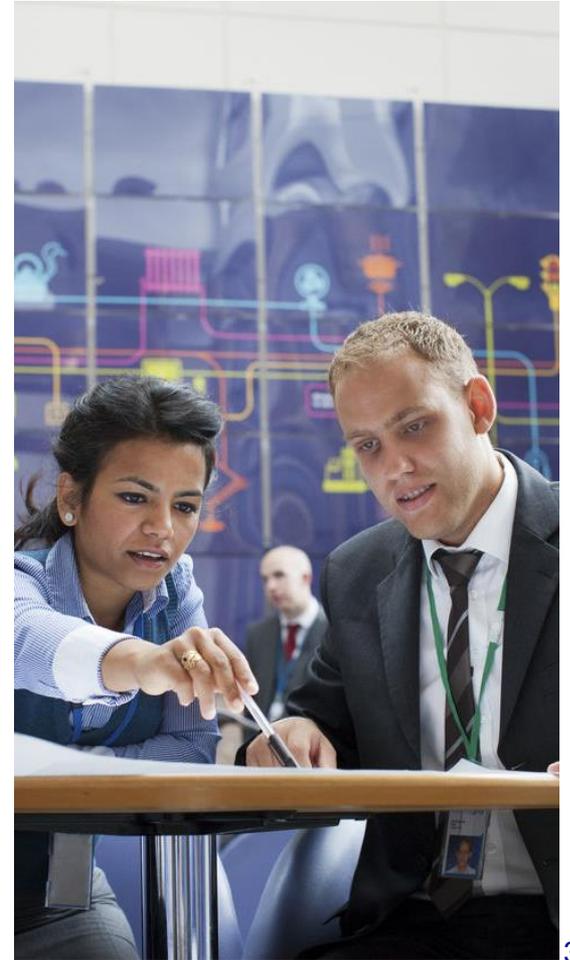
Sam Holmes - Operational Liaison Analyst

Harj Kandola – Data Insights Manager

Alison Tann - NTS Capacity & Access Development Manager

Neil Sorrell - Network Strategy Manager

Luke Parkinson - Gas Transmission Degree Apprentice



Calendar year 2022 Operational Forums

The forums will be hybrid via Microsoft Teams and at the Clermont Hotel, London (exc. January).

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Online	Clermont & Online	Clermont & Online	X	Clermont & Online	Clermont & Online	X	X	Clermont & Online	Clermont & Online	Clermont & Online	X
20/01	24/02	31/03		19/05	30/06			15/09	20/10	24/11	

**Registration is open for the
June 2022 event at:**

<https://www.eventbrite.co.uk/e/gas-operational-forum-june-2022-in-person-attendance-tickets-344261835417>

The Clermont Hotel
Charing Cross
London
WC2N 5HX

Housekeeping for Forums

For Microsoft Teams participants;

- Attendees will be automatically muted on dial-in and cameras will be unavailable.
- You can use the 'raise a hand' function if you would like to speak and we will enable your camera and microphone options.
- You will then need to un-mute yourself and turn your camera on to ask your question.
- We will be taking questions via the chat function, or if you would like to remain anonymous please use Microsoft Forms (link in the chat)



Key resources available to you

Gas Ops Forums

Throughout the year, we hold regular Operational forum meetings. This forum aims to provide visibility and awareness for our customers and stakeholders to help understand and discuss the operation and performance of the National Transmission System (NTS). We also proactively invite any suggestions for operational topics that would promote discussion and awareness.

Registration is open for all events at:

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

Gas Distribution List

<https://subscribers.nationalgrid.co.uk/h/d/4A93B2F6FAF273DE>

Join the conversation

Registering for the site will enable you to access further content and take part in discussions and voting. We are keen to ensure that we hear the views of all market participants, and registration will help us to ensure that relevant content can be developed for discussion.

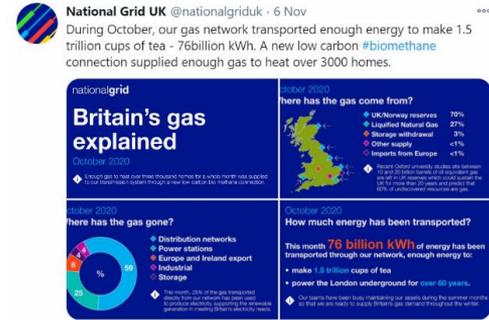
Register for access

For updates and interaction with National Grid please visit;
<https://datacommunity.nationalgridgas.com/>

For the National Grid Gas Website, please visit;
<https://www.nationalgridgas.com/about-us>

Maintenance Planning
<https://www.nationalgrid.com/uk/gas-transmission/data-and-operations/maintenance>

National Grid



For the monthly Gas Explained information please visit;
<https://twitter.com/nationalgriduk>

Or follow our personal accounts on LinkedIn

Modernising energy networks data

We're modernising data from the energy networks, bringing together gas and electricity networks to address data issues, access new datasets and identify opportunities in existing datasets.

Energy Data Request Tool:
[Microsoft Forms Link](#)

How to contact us

Operational Liaison Team

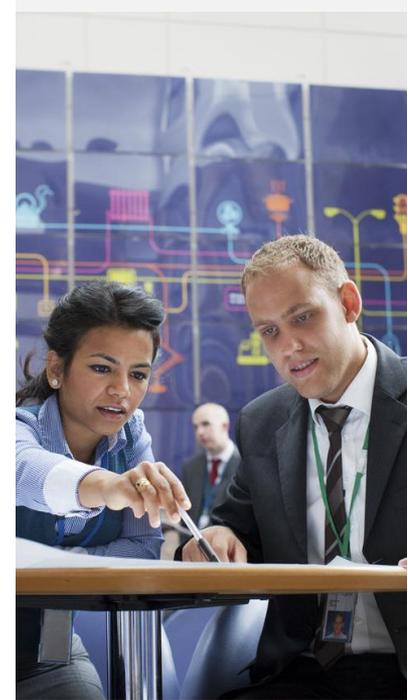
Martin Cahill: Martin.Cahill@nationalgrid.com

Mathew Currell: mathew.currell@nationalgrid.com

Operational Liaison Email:
Box.OperationalLiaison@nationalgrid.com

For updates and interaction with National Grid Gas please visit;
<https://datacommunity.nationalgridgas.com/>

For the National Grid Gas Website, please visit;
<https://www.nationalgridgas.com/about-us>



Agenda for Today

01	Welcome and Introduction	10:02
02	Operational Overview	10:10
03	Summer Outlook	10:25
04	Capacity Update: Milford Haven Entry & Bacton Exit	10:35
05	UK Transit Update	10:50
06	Digital Data Strategy	11:05
07	Network Capability	11:20
08	Updates 7 Day Margins Notice Forecast Gas Ten Year Statement Changes Upcoming Engagement Shaping the Future Webinars	11:40

Please ask any questions using the chat function, or through Microsoft Forms (link in the chat).

Questions will be covered at the end of each agenda section.

GT & M Company Sale

In March, National Grid Group announced the acquisition of a 60% equity stake in our gas business by the consortium comprising of Macquarie Asset Management and British Columbia Investment Management Corporation.

While the transaction has been agreed, GT&M remains part of the National Grid Group until the transaction completes, which we expect will take us to the second half of this calendar year. Steps ahead of completion will include regulatory approval by Ofgem and a review against the National Security and Investment Act.



**Gas
Transmission**

Operational Overview

Mathew Currell

Senior Operational Liaison Officer

Martin Cahill

Senior Operational Liaison Officer

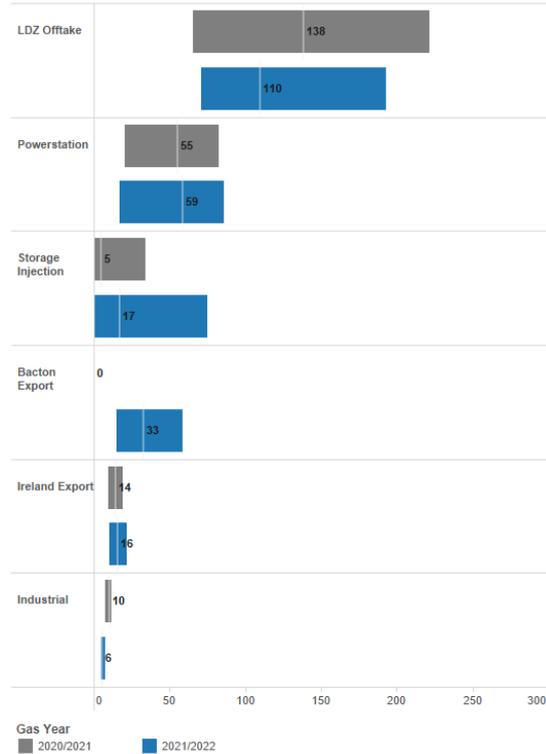
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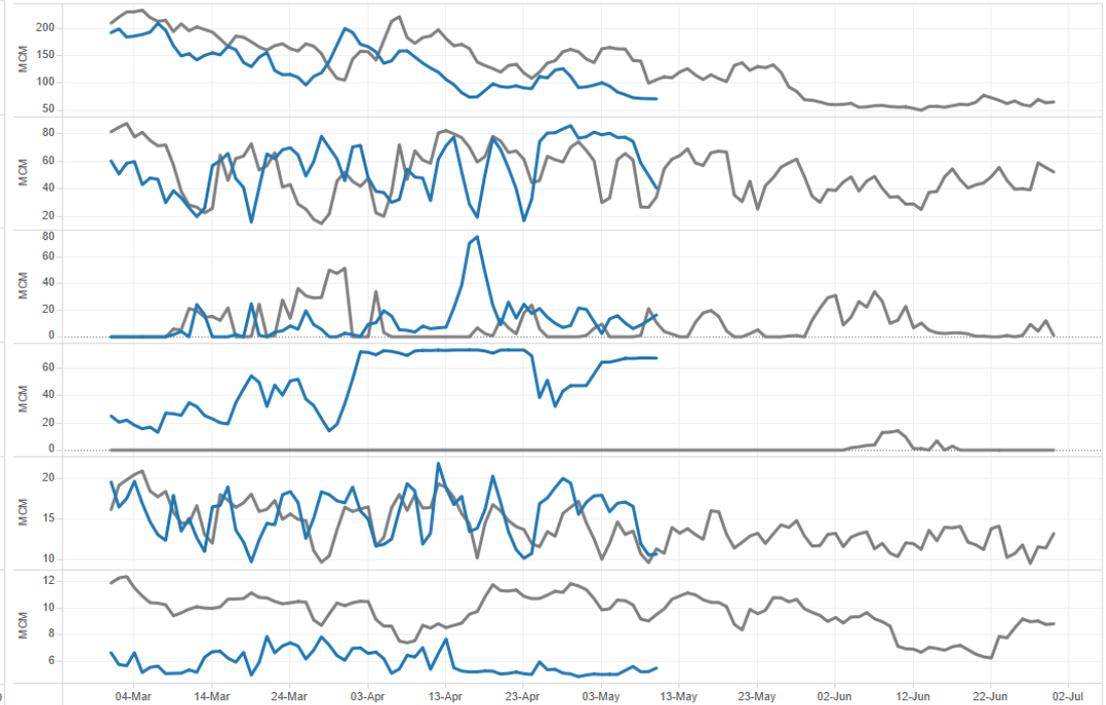
Components of NTS Demand

Components of NTS Demand

Average Daily Volume and Range (Summer)

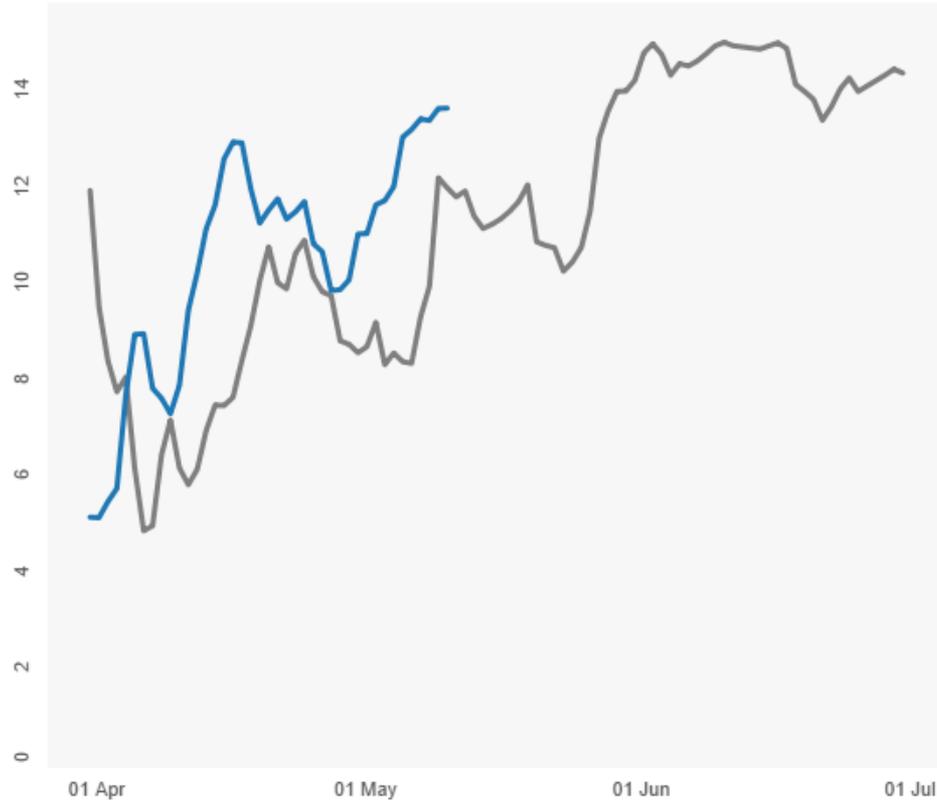


Trend Vs Previous Year

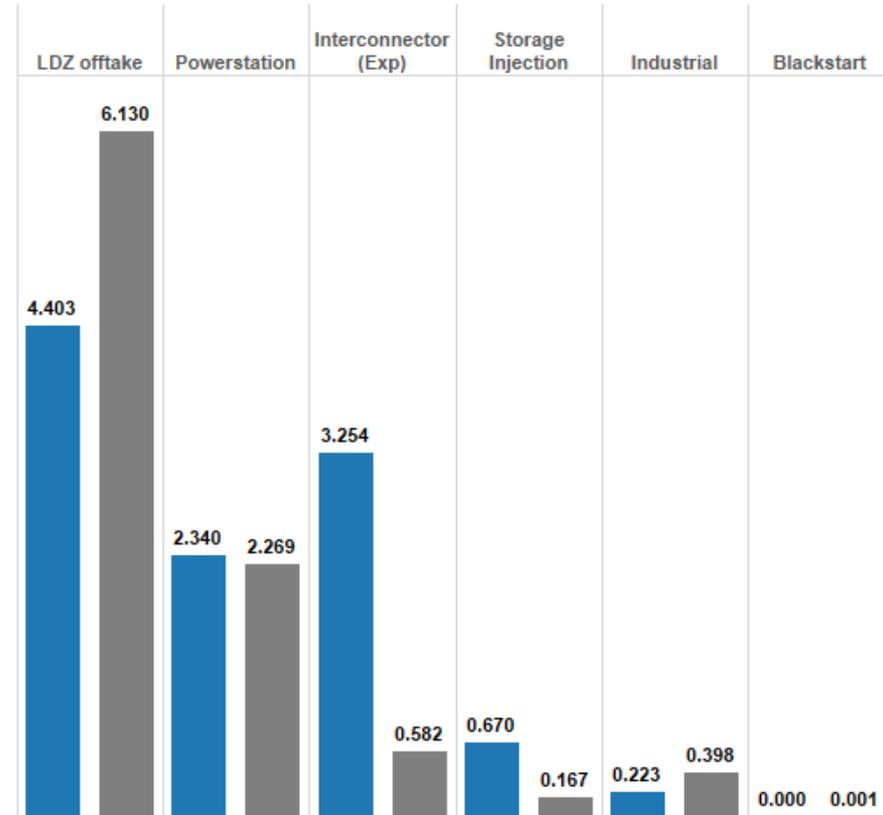


Demand – CWV & Components

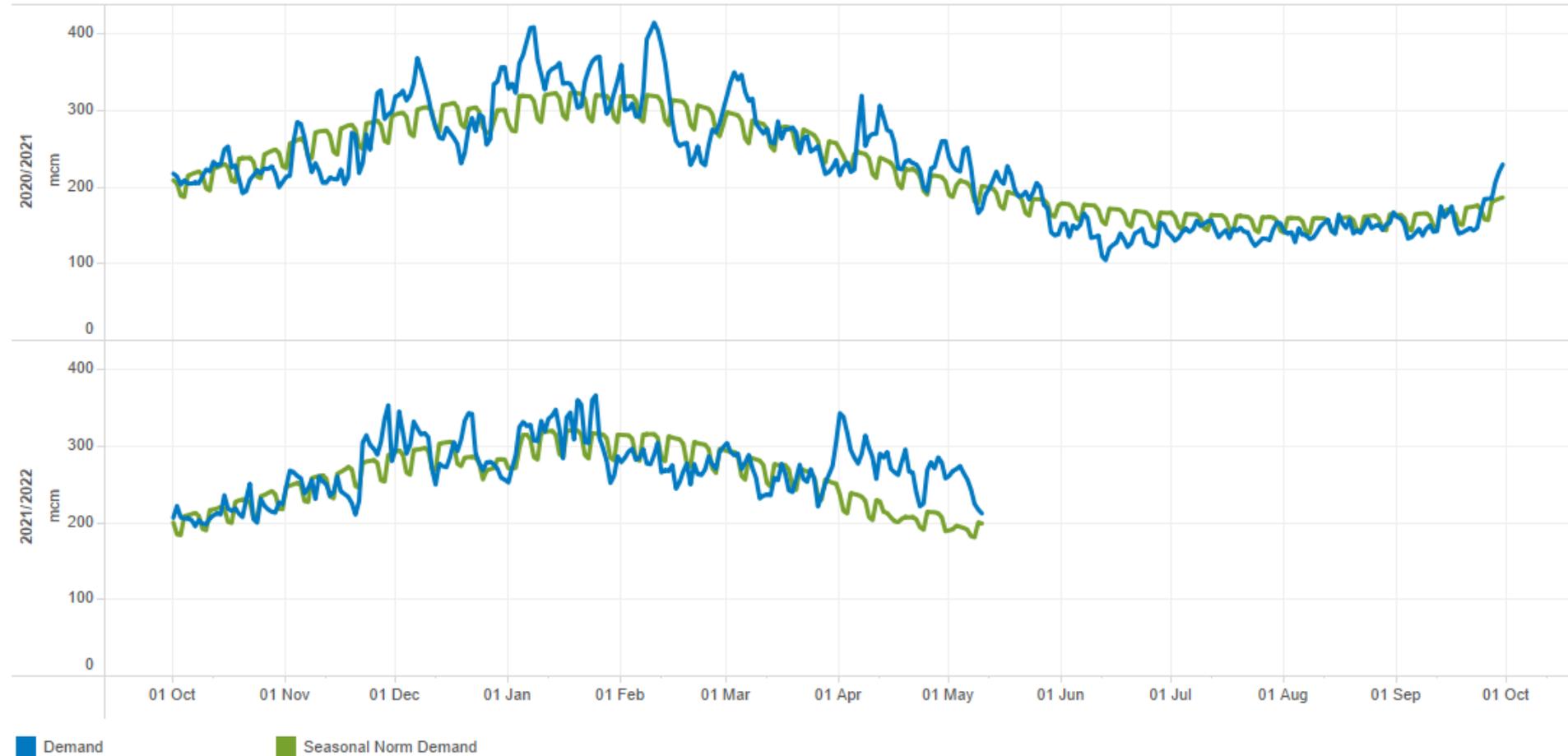
CWV



Demand (BCM, Summer)

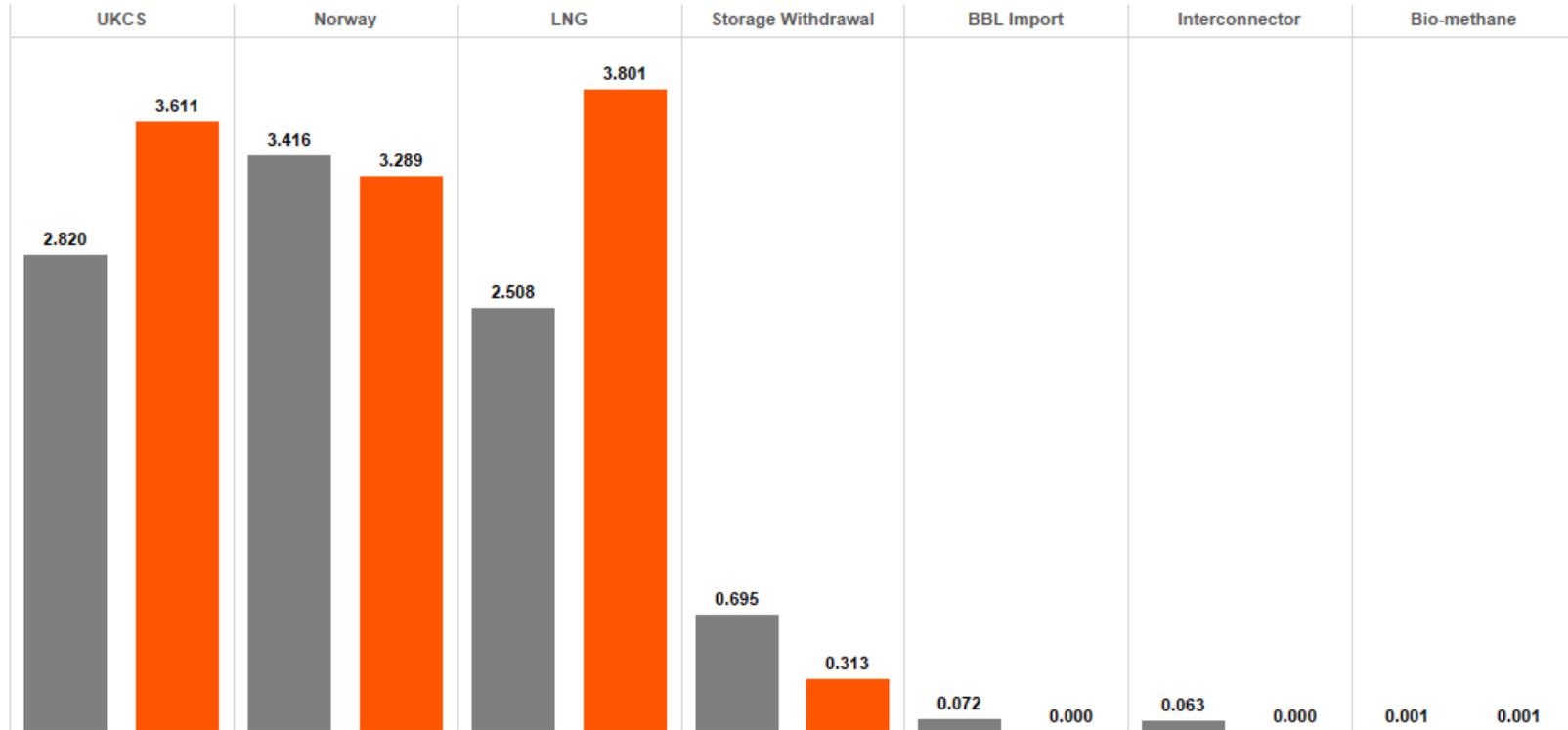


Demand – Comparison to seasonal norm



Supply - Components

Supply (BCM, Summer)



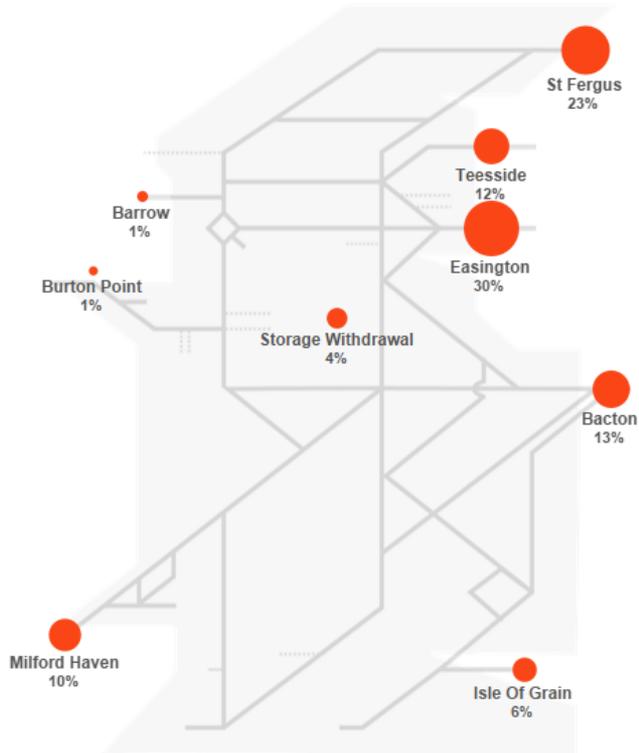
Gas Year

2021/2022

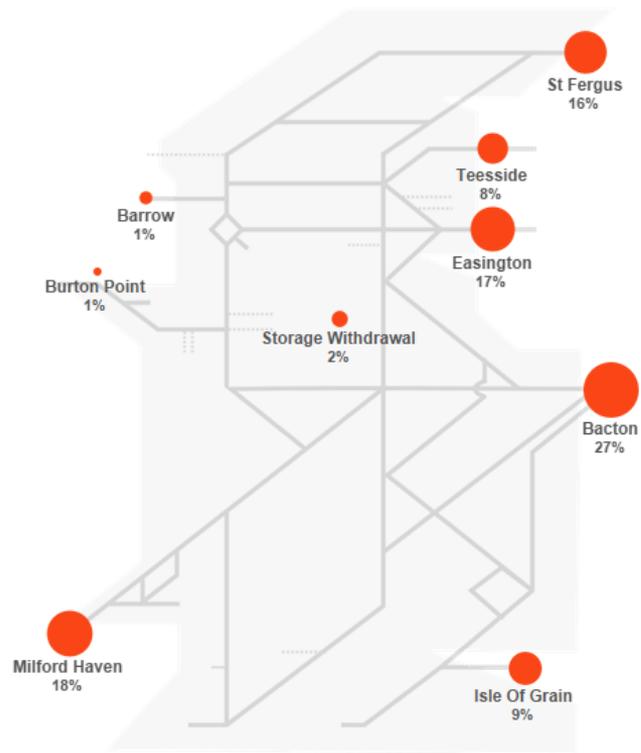
2020/2021

Supply Location

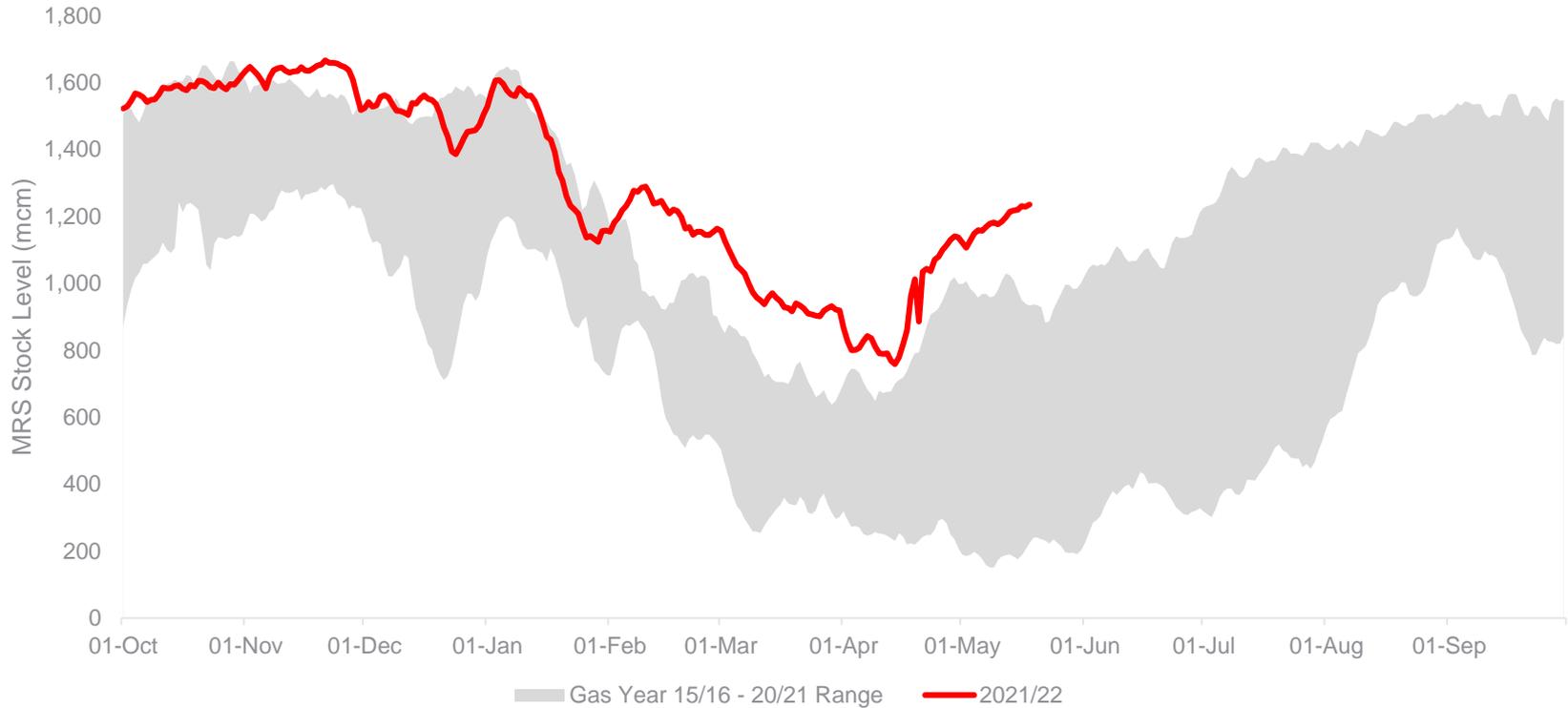
2020/2021 Percentage of total supply (Summer)



2021/2022 Percentage of total supply (Summer)



Medium Range Storage Stocks (MRS)

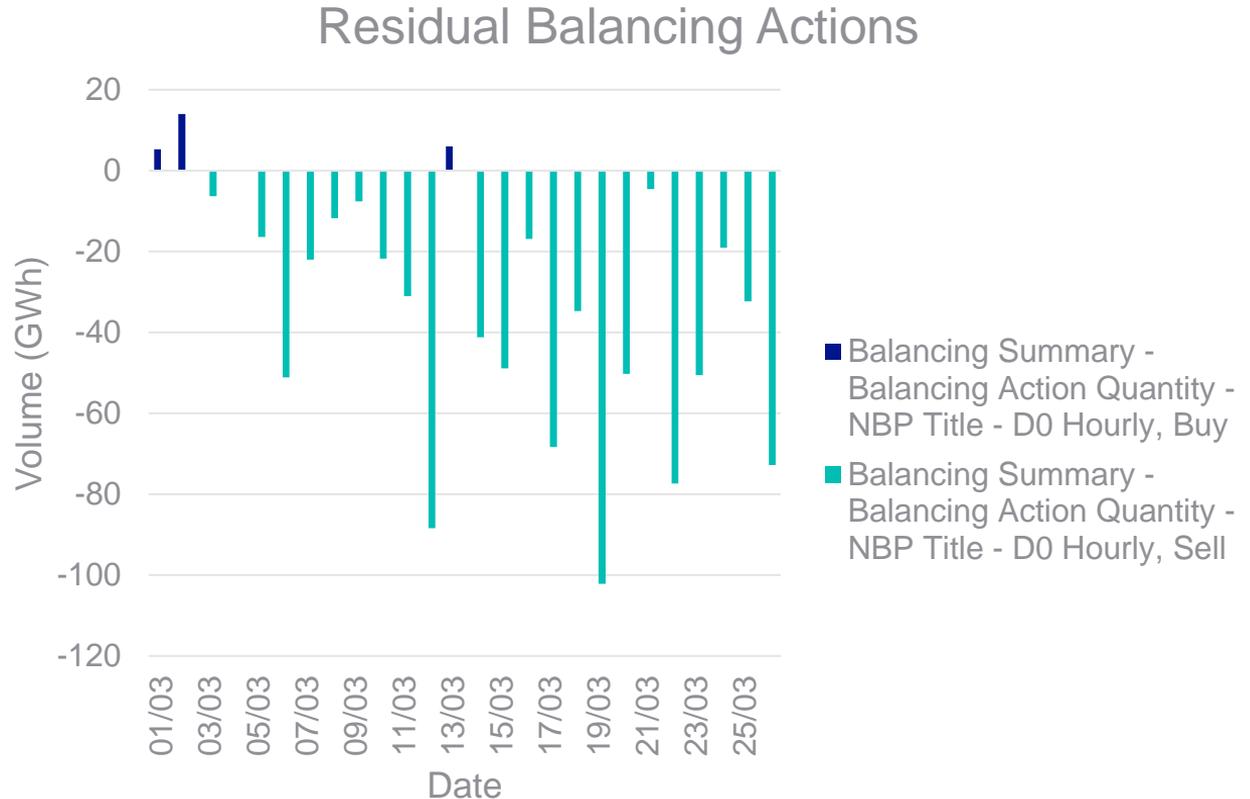


Last Month: Residual Balancing

Over-delivery of market in March

High volume of sell actions required by GNCC

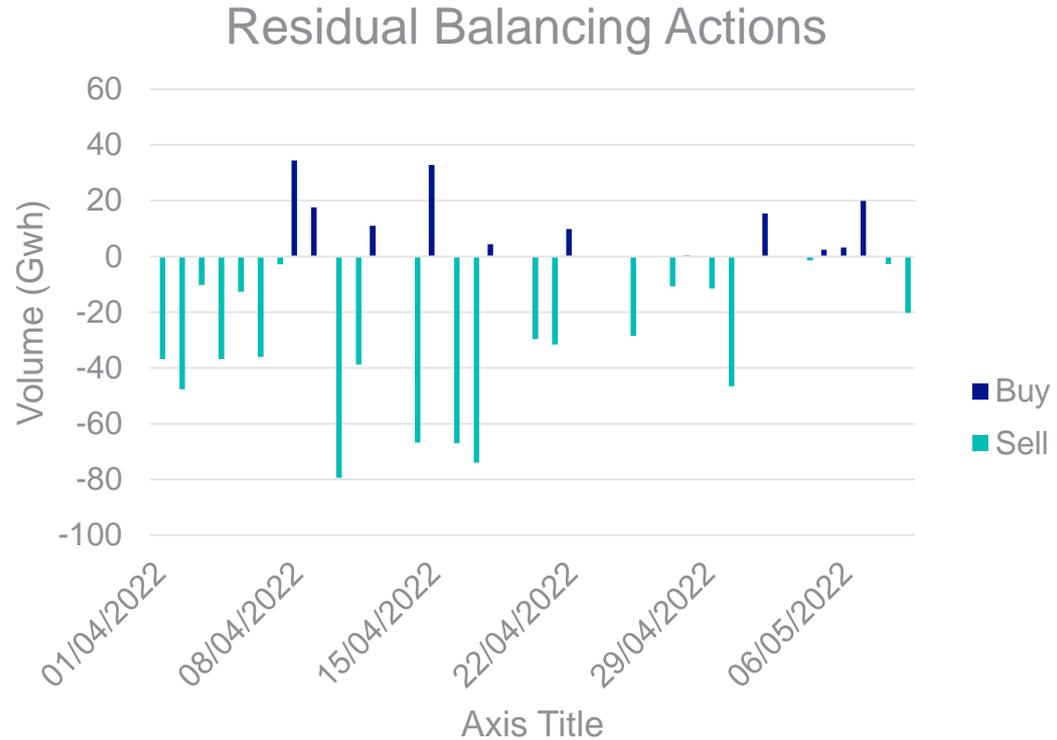
Often limited market response



This Month: Residual Balancing

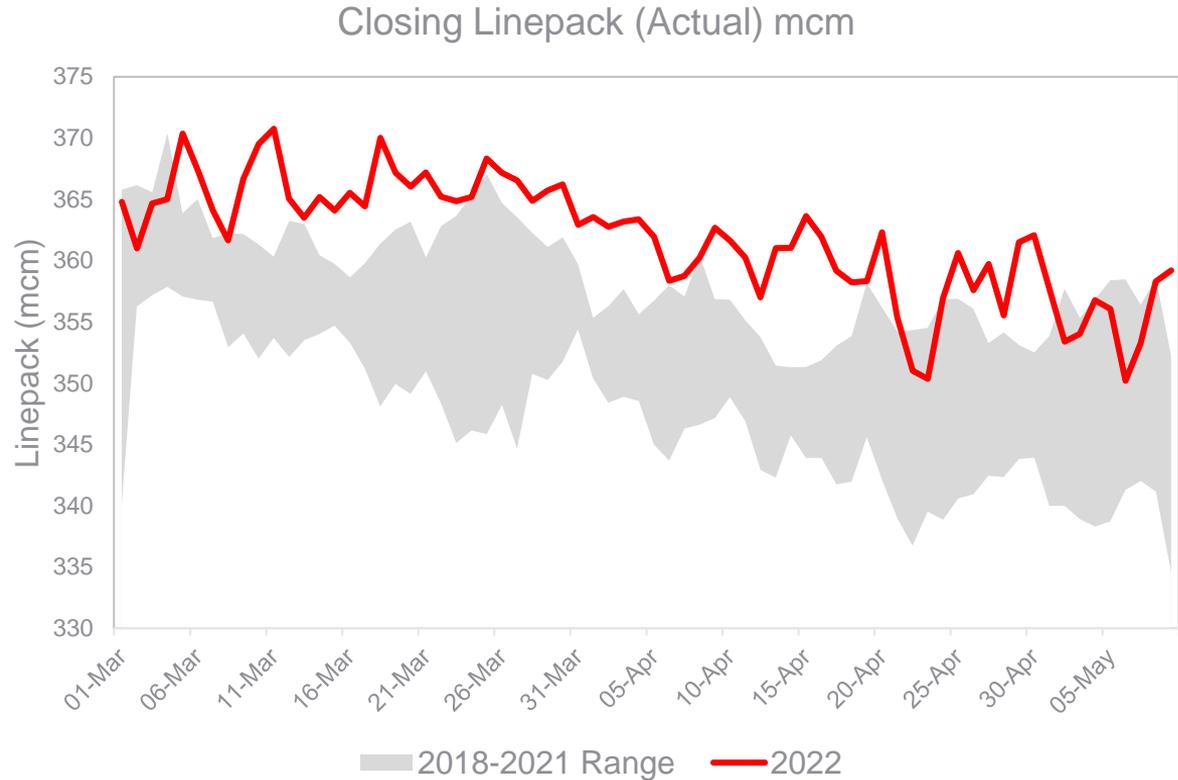
**Less Volume of
Actions required**

**More Buy Actions
taken in April and
May**



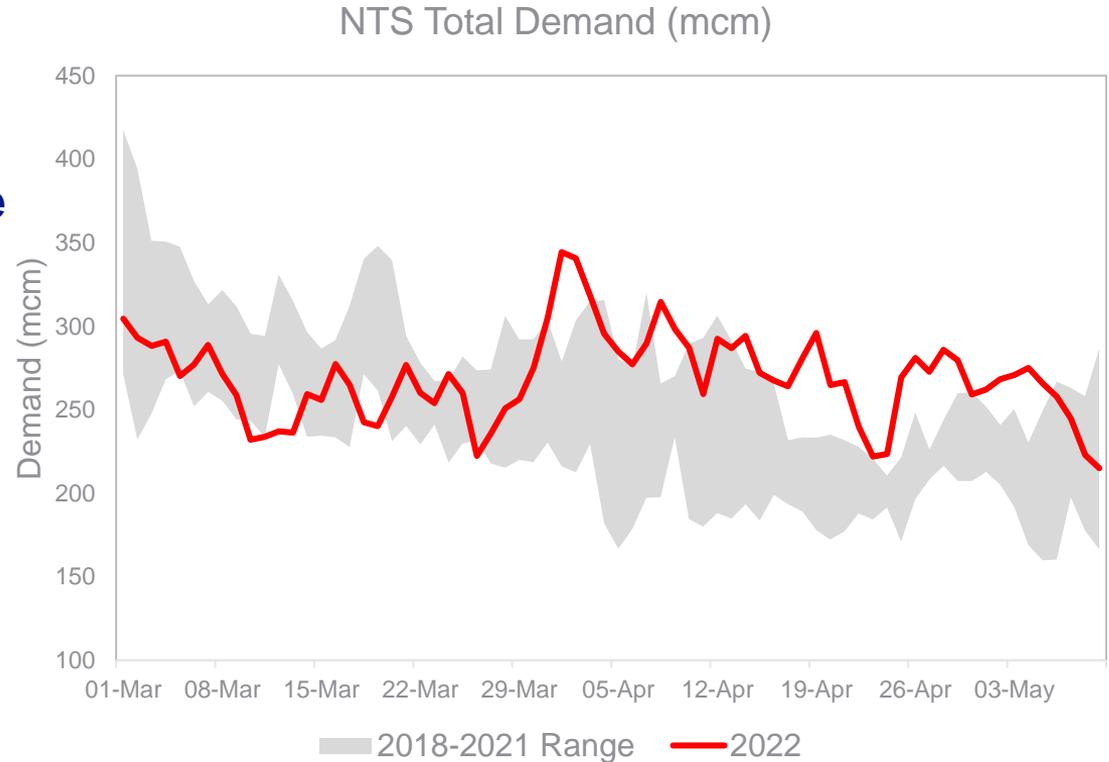
Linepack – Historical Range

Linepack during April and early May has been in a high range when compared to previous years



NTS Demand

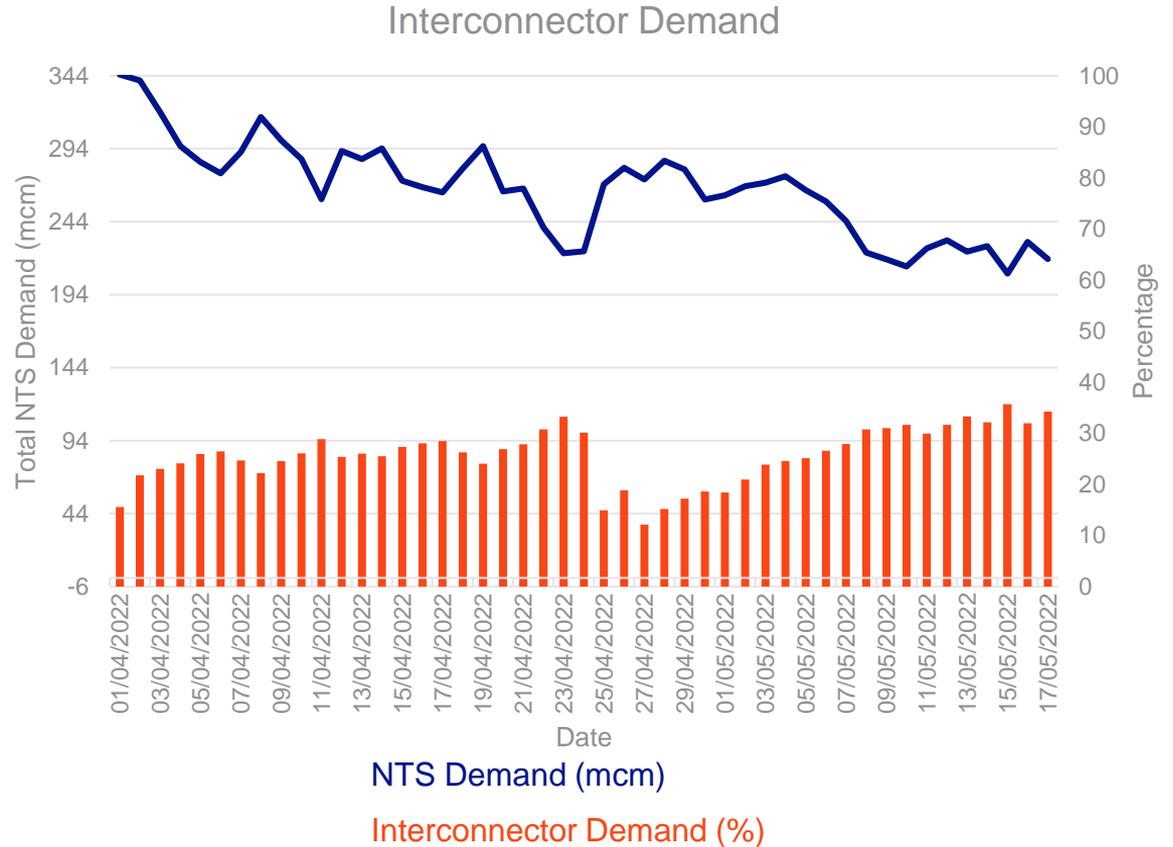
Total NTS Demand at a high range compared to previous years, mainly due to additional exports at Bacton



Interconnector Demands

Interconnector Demand was an average of 25% of NTS total during April and May so far

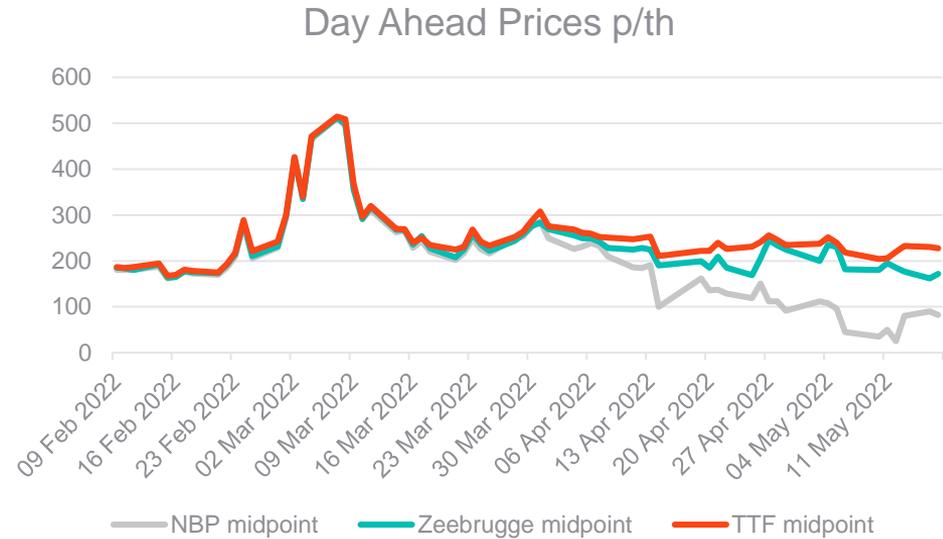
Maximum daily proportion of 35.7% on Sunday



Prices

Recently have seen a huge shift in the differential between NBP and European Prices

Price has started to close again but still large gap



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Summer Outlook

Martin Cahill
Senior Operational Liaison Officer

nationalgrid



Executive summary

Key messages

1

There is expected to be sufficient supply to meet GB demand this summer. We expect GB gas demand will be largely met by supplies from UKCS  and Norway.

2

We could see much higher flows into Europe this summer given the low European storage stocks and the uncertainty of supplies into Europe. We are anticipating that the NTS could be used as a transit  for gas going into Europe. We will continue to monitor the levels of GB Medium-range storage (MRS) storage as we head towards winter 2022/23.

3

Our asset maintenance programme in summer 2022 is the most significant we have undertaken with around three times as many activities than previous years. These interventions are required to enable continued safe and reliable operation of our system. We are carefully phasing our maintenance works to ensure that we minimise effects of asset unavailability on network resilience while maintaining our operational flexibility.

4

We have the right tools and services available to manage operability safely and efficiently. Low demand conditions on the NTS increase network resilience. We have a selection of operational and commercial tools that we can use in the event of a supply and demand imbalance. This may include issuing margin notices to encourage market participants to take action.

Key statistics – historical 2021 and forecast 2022

(bcm)	2021	2022
GB gas demand *	27.8	26.1
Export gas demand	3.1	7.6
Total gas demand **	31.9	34.0

A version of this table with values in TWh can be found in the Appendix.

Weather corrected  historical- and forecast-gas demands for the 2021 and 2022 summers respectively.

Please note the difference in GB gas demand and total gas demand will not be equal in value to export gas demand due to shrinkage .

* GB demand is comprised of gas used domestically, and for industry, power generation, and storage injection.

** Total gas demand is GB demand combined with export gas demand (gas exported via interconnectors to mainland Europe and Ireland).

Welcome >

Executive
summary >

Demand >

Supply >

Operational
outlook >

Appendix >

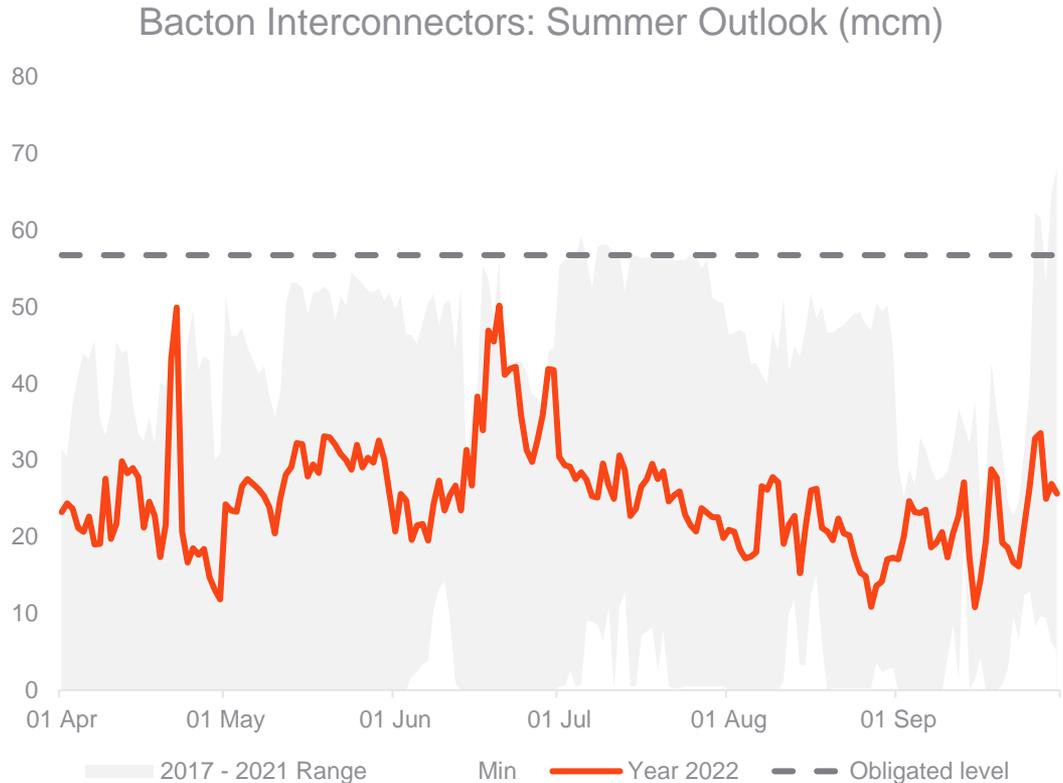
Continuing the
conversation >



Summer Outlook: Interconnectors

Continued concern over the availability of Russian gas combined with a requirement to refill bulk strategic storage in the EU is driving the potential for high UK to EU exports over the summer.

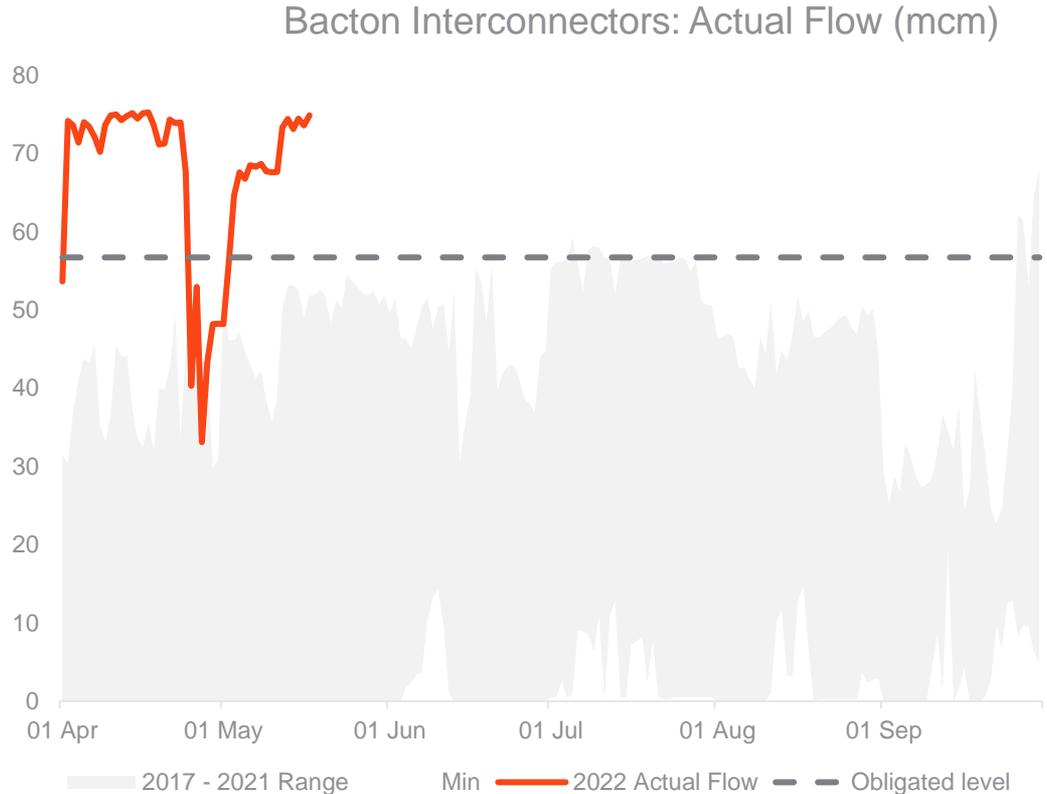
This chart shows the average export that would be expected based on historical trends



Summer Outlook: Interconnectors

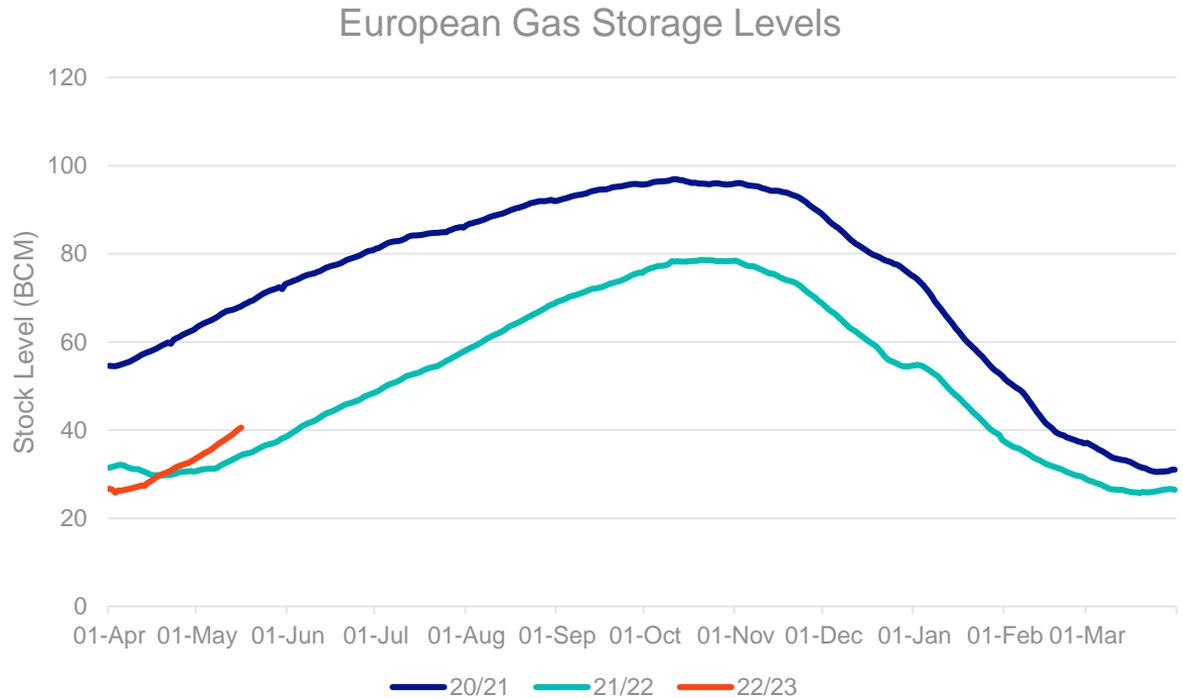
Actual Interconnector exports have consistently been well above historical flows

Flows have been above the baseline exit capacity at Bacton on the majority of days



European Gas Storage

European Storage stocks were low going into 21-22 winter, and ended the period below the 5 year average



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Capacity Update

Milford Haven
Entry and Bacton
Exit

Alison Tann
NTS Capacity & Access
Development Manager

nationalgrid



Milford Haven Entry capacity update

Headlines:

- On 9th May, Ofgem approved revisions to the Entry Capacity Release (ECR) Methodology Statement
- Volumes of Firm capacity released in Monthly / Weekly auctions will be (as a minimum) as per the ECR consultation documents, from Jun-Oct
- Capability and capacity for release for each weekly auction period will be reassessed and published
- Capability will be further assessed by GNCC and any additional unsold capacity beyond the WSEC level will be made available in day ahead/within day auctions on Gemini
- In the Rolling Monthly auction (RMTNTSEC) for June capacity, 93GWh/d was sold

- The first weekly auction will be held on 20th May

Milford Haven Jun-Oct '22 - Weekly Capability and Capacity Release Tracker *all volumes in kWh/d*

Capacity Effective For	Weekly System Entry Capacity (WSEC) Auction held on	Applicable Capability ¹ from Revised Entry Capacity Release consultation - NGG's Joint Response	Weekly Capability Assessment	Capacity Utilised in Capacity Release Calculation	Capacity to be Released in Weekly Auction ²
30th May - 5th June	Fri 20th May	748,000,000	715,000,000	748,000,000	305,000,000
6th June - 12th June	Fri 27th May	693,000,000	tbc		tbc
13th June - 19th June	Fri 3rd June	693,000,000	tbc		tbc
20th June - 26th June	Fri 10th June	693,000,000	tbc		tbc
27th June - 3rd July	Fri 17th June	693,000,000	tbc		tbc
4th July - 10th July	Fri 24th June	693,000,000	tbc		tbc
11th July - 17th July	Fri 1st July	693,000,000	tbc		tbc
18th July - 24th July	Fri 8th July	693,000,000	tbc		tbc
25th July - 31st July	Fri 15th July	693,000,000	tbc		tbc
1st August - 7th August	Fri 22nd July	682,000,000	tbc		tbc
8th August - 14th August	Fri 29th July	682,000,000	tbc		tbc
15th August - 21st August	Fri 5th August	682,000,000	tbc		tbc
22nd August - 28th August	Fri 12th August	682,000,000	tbc		tbc
29th August - 4th Sept	Fri 19th August	726,000,000	tbc		tbc
5th Sept - 11th Sept	Fri 26th August	726,000,000	tbc		tbc
12th Sept - 18th Sept	Fri 2nd September	726,000,000	tbc		tbc
19th Sept - 25th Sept	Fri 9th September	726,000,000	tbc		tbc
26th Sept - 2nd Oct	Fri 16th September	748,000,000	tbc		tbc
3rd Oct - 9th Oct	Fri 23th September	748,000,000	tbc		tbc
10th Oct - 16th Oct	Fri 30th September	748,000,000	tbc		tbc
17th Oct - 23rd Oct	Fri 7th October	748,000,000	tbc		tbc
24th - 30th Oct	Fri 14th October	748,000,000	tbc		tbc
31st Oct - 6th Nov	Fri 21st October	950,000,000	tbc		tbc

NOTE: in the weeks where the "capacity effective for" period straddles two calendar months (bolded dates in the table)...

¹ ...for capability, the higher capability of the two monthly capability levels will be applied to maximise the capacity released.

² ...for capacity, in line with the weekly auction rules the highest capacity sold level from either of the two months that overlap the weekly auction will be deducted from the calculated capability level to generate the capacity to be released. Depending upon the day ahead capability any remaining unsold would then be released at the day ahead auction.

Information provision timescales

On a weekly basis, this table will be uploaded with new information as follows:

- Capability will be reassessed and published 3-4 working days in advance of the WSEC auction date
- Capacity for release will be calculated and published 1-3 working days in advance of the WSEC auction date

Where to find data

Published under “Supplementary reports” on the Transmission operational data webpages

<https://www.nationalgrid.com/gas-transmission/data-and-operations/transmission-operational-data>

For any queries relating to this information, please direct these as follows:

Capability ntsaccessplanning@nationalgrid.com

Capacity capacityauctions@nationalgrid.com

National Grid

nationalgrid

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Data and operations

Transmission operational data ← Select

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Gas Transmission Open Data Requests

Operational news
Operational forum
Quality
Maintenance
Constraint management
Calorific value (CV)

Scroll down to...

Supplementary reports

Milford Haven Weekly Capability / Capacity, Jun-Oct 2022

Milford Haven Weekly Capability / Capacity, Jun-Oct 2022 (1)

Pre-emergency Commercial Tools (1)

Daily storage and LNG operator information (1)

Calculated linepack utilisation (1)

Pressure Forecasts (2)

Storage and LNG operator information (1)

Contingency documents (1)

Other reports (10)

Trial Instantaneous Demand Info (4)

Trial After the Day Trading Data (6)

Milford Haven Weekly Capability / Capacity, Jun-Oct 2022

On 9th May Ofgem published their approval of our proposed revisions to the Entry Capacity Release Methodology Statement.

This temporary provision allows us to withhold entry capacity at Milford Haven from June to October 2022, in the Rolling Monthly Trade and Transfer System Entry Capacity (RMTnTSEC) and Weekly System Entry Capacity auctions (WSEC). The rationale for this change is driven by current geopolitical situation and current market conditions, which are expected to continue driving flows in excess of historic levels and importantly in excess of the physical capability that is achievable with summer demand levels. The ECR changes do not change the capability of the NTS in any way, but seek to protect industry and end consumers from the heightened and consistent risk of constraint costs that exists due to the current climate.

We have committed to actively forecast capability and maximise capacity release at Milford Haven on a weekly basis, and to report both capability and capacity release levels ahead of each WSEC auction. We are also committed to transparency and providing this information to you on a timely basis.

The information will be provided in a table relating to each WSEC auction period, and new data will be available for capability ~3-4 days in advance, and for capacity release ~1-3 working days in advance of the WSEC auction

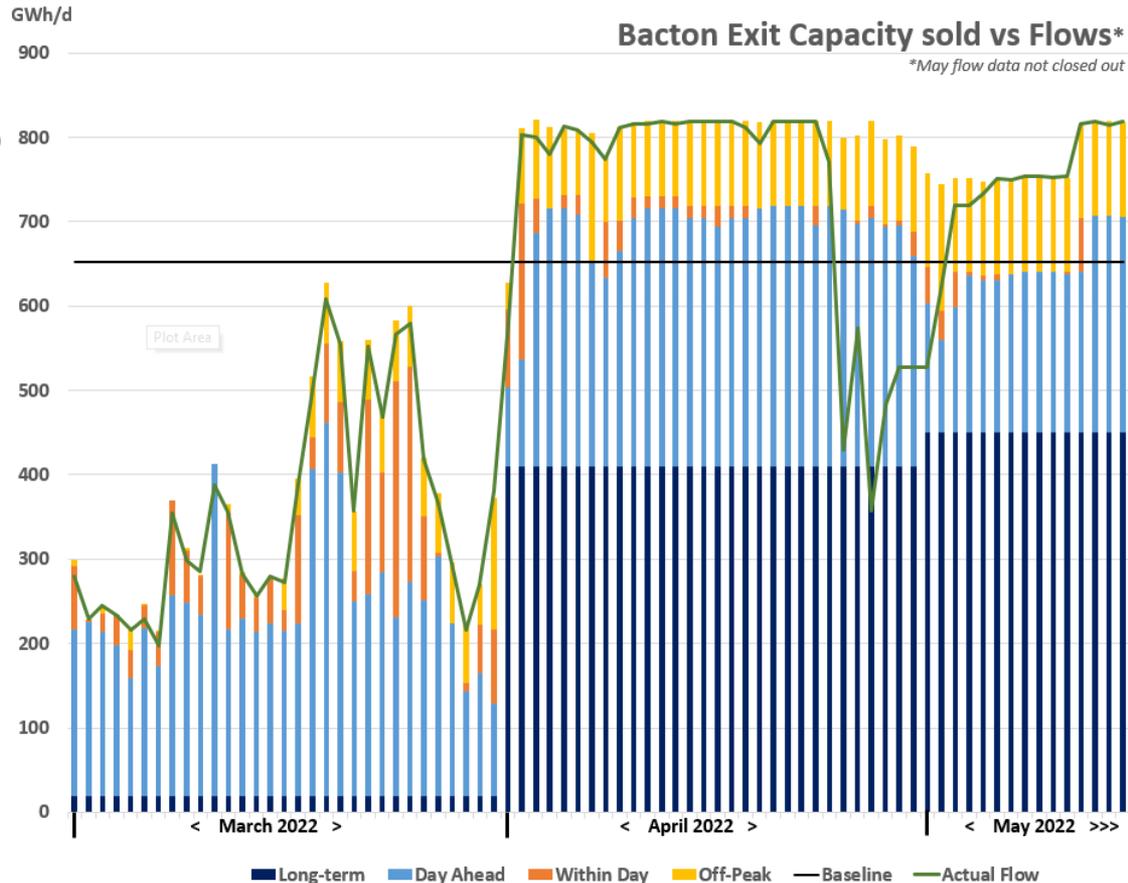
Name

Published Milford Haven Weekly Capability and Capacity Table

Bacton Exit capacity update

Headlines:

- Additional Firm Exit capacity (Non-Obligated) made available daily since 1st April (bar 7th Apr) as sufficient network capability to support this
- Rolling Monthly Exit auction (IPRMNEX) in April resulted in no bundled capacity allocations - significantly over-subscribed
- IPRMNEX auctions in May closed after requested volumes reduced to meet available levels, ~550GWh/d sold
- IP quarterly auction (IPAQNEX) for Jul-Sept saw aggregate allocations of ~480GWh/d
- A RAG status indicator to show weekly likelihood of Non-Obligated capacity release to end-Sept has been developed and will be available in the next day or so. This will be updated weekly.



**Gas
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UK Transit Update

Craig James
Head of Operational Delivery

nationalgrid

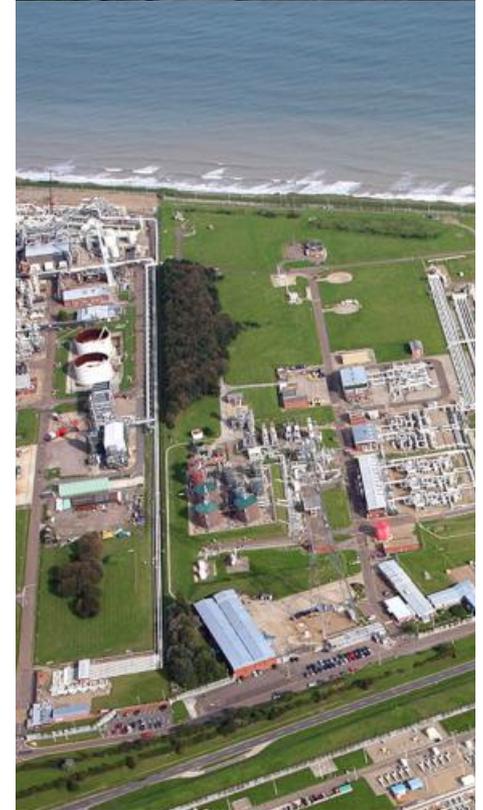


UK Transit - Background

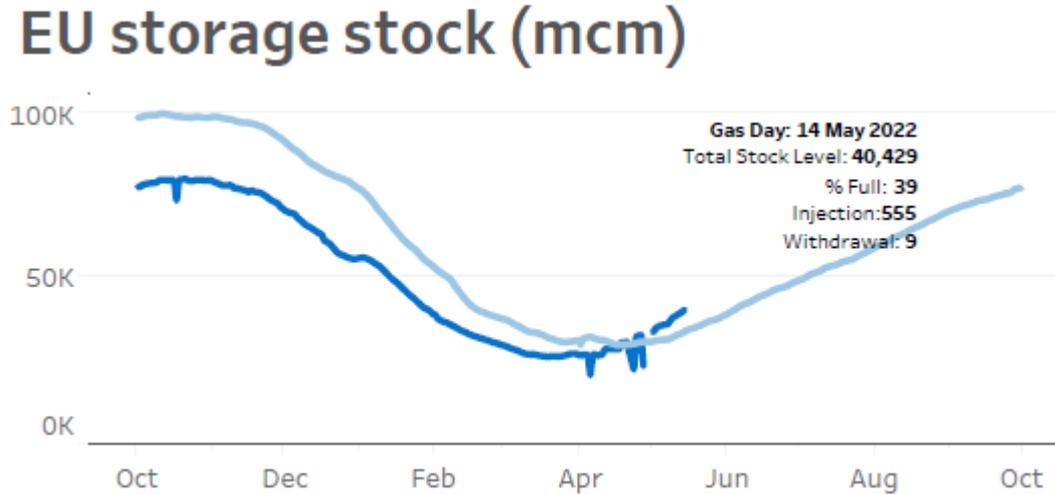
UK has high flexibility of supply during the summer months with strong reserves available from the UK and Norwegian Continental Shelves and a large LNG regasification capability

Continued concern over the availability of Russian gas combined with a requirement to refill bulk strategic storage in the EU is driving high UK to EU exports over the summer.

- Circa 60 bcm of continental injection is expected to be required to provide adequate winter storage stocks
- Bacton interconnectors capable of supplying over 10 bcm in a 6 month period
- As UK demand is suppressed due to warmer temperatures and lower demand for domestic heat, surplus supply has driven continental exports



EU Storage Position



EU storage is on track to recover to >90% capacity by the start of next winter, with 60 bcm still required to reach 100% of capacity

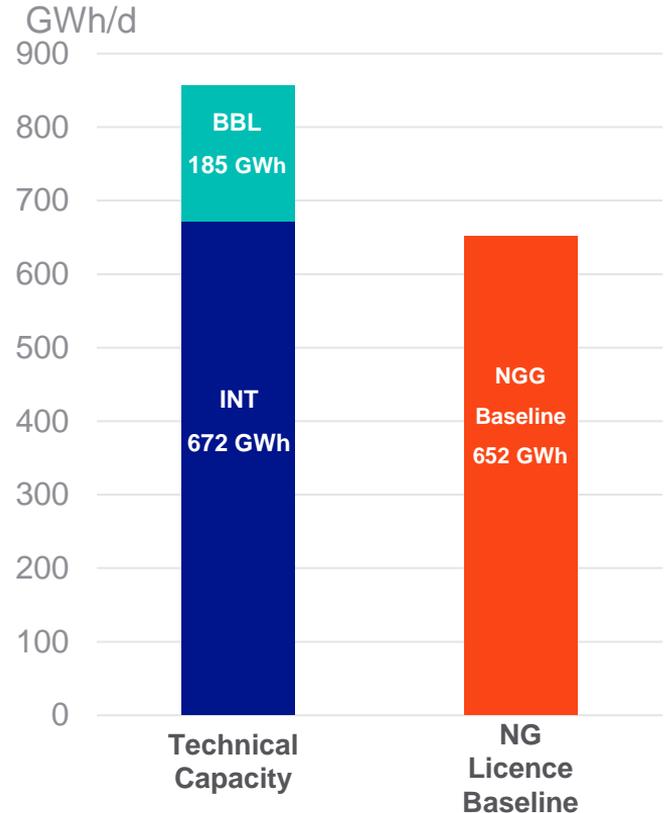
Bacton Exit Capacity

Bacton Exit Point Aggregation

Following a statutory consultation by Ofgem, National Grid's license was changed to aggregate the Bacton Exit Point on 15th December 2021

The exit capacity baseline at Bacton is approximately 80% of the name plate capacities of the interconnectors

The amount of capacity NG offers on PRISMA is automatically bundled with adjacent TSOs where possible. Sales of adjacent TSOs' Implicit Allocation products are high throughout the summer



Our role in supporting potential UK transit over the summer

As a prudent operator, we recognise the criticality of our role in ensuring the UK and European gas industry has the tools required to achieve an adequate security of supply position as we enter next winter

Key to this will be ensuring that our network can maximise entry capability across key system entry points and maximise potential deliveries across to the EU, should it be required. We will endeavour to:

- Maximise asset availability
- Further improve information transparency to equip the industry with the tools required to maximise interconnector exports
- Continue to work with industry to adapt our processes over the coming summer

What are we proposing at Bacton this summer?

Week Ahead RAG status for Non-Obligated capacity release

- Provision of an indicator of additional Non-Obligated capacity being made available – currently this is at D-1
- Assessments would be based on forecasts of Demand, Supply, Pressure, Assets
- Network conditions are constantly changing – there may be a difference between the week ahead indication provided and D-1 release
- The week ahead assessment will be made based on the key considerations and capability assessment, using the information we have at the time
- Likelihood ratings will have a tolerance and robust process to determine these – we appreciate that a constant Amber may be viewed over time as unhelpful
- This would be a temporary provision due to the current exceptional circumstances

Bacton Non-Obligated Capacity RAG Status Update

- An indicator of additional Non-Obligated capacity is being made available for the week ahead – currently this is at D-1 only.
- Assessments would be based on forecasts of Demand, Supply, Pressure, Assets.
- This will be a temporary provision due to the current exceptional circumstances.
- This report will be published in the following location from Friday:
- <https://www.nationalgrid.com/gas-transmission/data-and-operations/transmission-operational-data/>

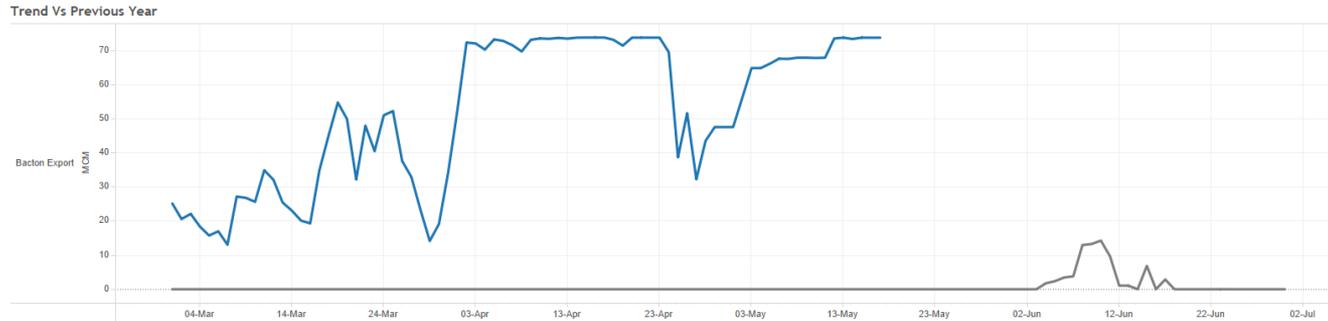
The screenshot shows the National Grid website interface. At the top, there is a navigation bar with links for 'Gas Transmission', 'About us', 'Careers', and 'Contact us'. Below this is a secondary navigation bar with dropdown menus for 'Balancing', 'Capacity', 'Charging', 'Connections', 'Data and operations', 'Land and assets', and 'Insight and'. A green arrow labeled 'Select' points to the 'Data and operations' dropdown menu. Below the navigation bar, the 'Data and operations' section is expanded, showing a list of links: 'Transmission operational data', 'Useful Operational Information', 'Commercial and Regulatory change', 'Gas Transmission Open Data Requests', 'Operational news', 'Operational forum', 'Quality', 'Maintenance', 'Constraint management', and 'Calorific value (CV)'. A green arrow labeled 'Select' points to 'Transmission operational data'. Below this list, a green arrow labeled 'Scroll down to...' points to a white box containing the text 'Supplementary reports'. Below the 'Supplementary reports' box, there is a list of reports. The report 'Bacton IP Exit NonObligated Capacity release likelihood indicator (0)' is circled in green. A green arrow labeled 'Select' points to this report. Other reports visible include 'Milford Haven Weekly Capability / Capacity, Jun-Oct 2022 (1)', 'Pre-emergency Commercial Tools (1)', and 'Daily storage and LNG operator information (1)'.

EU Transit Gas

From April this year, Interconnector Limited and BBL have been transporting large volumes of gas to continental Europe. For the majority of the period, this has been at the technical capacity of the pipelines and in excess of the obligated baseline capacity at the Bacton Exit Point.

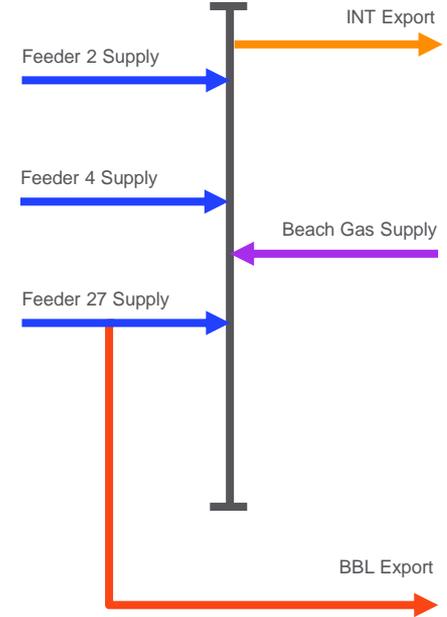
On the 24th of April, Interconnector Limited notified the industry that flows must be reduced due to filter issues at Bacton, related to material ingress from the NTS

Export flows remained at the lower levels for the remainder of April before recovering in May



Network Impact of EU Export Gas

- Unprecedented export volumes at Bacton have resulted in high velocity, turbulent gas flows in the network.
- These flow conditions are believed to have been the root cause of legacy dust within the NTS being picked up in the gas flow and delivered into Interconnector Limited's filters at Bacton
- NGG are committed to helping resolve any issues that impact our customer's ability to flow gas and have initiated a prefiltering arrangement at Bacton.
- Differential pressures across all filter banks have remained stable over the past week and maximum continental deliveries have resumed.
- NGG will continue to work with customers at Bacton to ensure any future disruption is minimised



Simplified schematic of Bacton pipework arrangement

**Gas
Transmission**

Digitalisation Strategy March 2022

Harj Kandola
Data Insights Manager

Sam Holmes
Operational Liaison Analyst

nationalgrid



Our Digitalisation Strategy

Delivering our digitalisation strategy will help us to realise our ambition to be at the heart of a clean, fair and affordable energy future for everyone.

The success of our strategy will be based on delivering value for our stakeholders.

We have categorised stakeholders according to needs. This is detailed in the Stakeholder Personas section.

Our stakeholder's ask of us is detailed in the Stakeholder



To help manage delivery, our strategy has been broken down into focus areas. These are detailed in the Our Focus Areas section

Running parallel to our digitalisation strategy is an innovation strategy which focuses on considering the future technologies that could be used to help us meet our objectives.

Our innovation technology portfolio lead works closely with our internal data management and IT teams, ensuring that our innovation activities support our ability deliver our digitalisation strategy.

To deliver value to stakeholders we need to continue to develop the capability that will enable our digital transformation.

We have identified 5 key areas of enablement which will underpin the delivery of our strategy, these are detailed in the Enabling our digital transformation section.

Digitalisation Strategy Journey

October 2018

Energy Data Task Force established to provide Government, Ofgem and Industry with a set of recommendations on:

“How data can assist with unlocking the opportunities provided by a modern, decarbonised and decentralised Energy System at the best value

June 2019

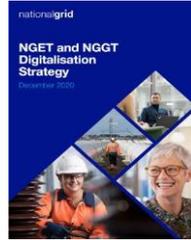
EDTF published their report:

“A strategy for a Modern Digitalised Energy System”

The report strongly advocated further digitalisation and made recommendations for focus areas.



2019



December 2020

National Grid Gas Transmission (NGGT) published Digitalisation Strategy (Joint strategy with National Grid Electricity Transmission (NGET))

2020

October – November 2020

NGGT engaged with stakeholders on draft Digitalisation Strategy.

Provided drafts of our updated strategy and action plan to the Independent User Group for challenge and review.

Hosted webinars and workshops on the Digitalisation Strategy, inviting questions and feedback.

Reached out directly to some groups with particular interest in topics such as our data platform (MIP) rebuild.

2021

June 2021

NGGT shared updated Digitalisation Strategy Action Plan (DSAP) Setting out how we plan to deliver the Digitalisation Strategy



November 2021

Ofgem published:

- Data Best Practice Guidance
- Data Best Practice Principles

2021

Over the course of 2021 we have engaged with energy networks and organisations from other industries to share knowledge on:

- Technology
- Skills
- Culture

We have also produced materials and held events to support stakeholders use of data, such as the Data Webinar – Your data, today and tomorrow

2022

December 2021

NGGT shared updated Digitalisation Strategy Action Plan (DSAP)



January 2022

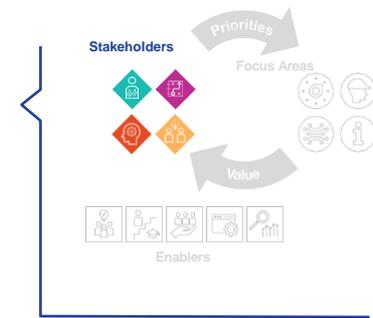
EDTF published new report and recommendations. NGGT are currently reviewing this report to understand the implications

Stakeholder personas

In order to ensure we fully consider the needs of the subset of our stakeholders that are active users of our data we have developed a number of data user personas.

Personas help us to categorise and evaluate the needs of different user groups, ensuring we embed them in our thinking when developing and implementing our strategy.

They also help us to evaluate the relative benefits and costs of meeting different users' needs, ensuring we can balance transparency and the benefits of digitalisation initiatives against the cost to consumers to meet these needs. We have identified four key persona groups



Stakeholders



Energy Industry Participants



Network and Asset Decision Makers



Enquiring Minds

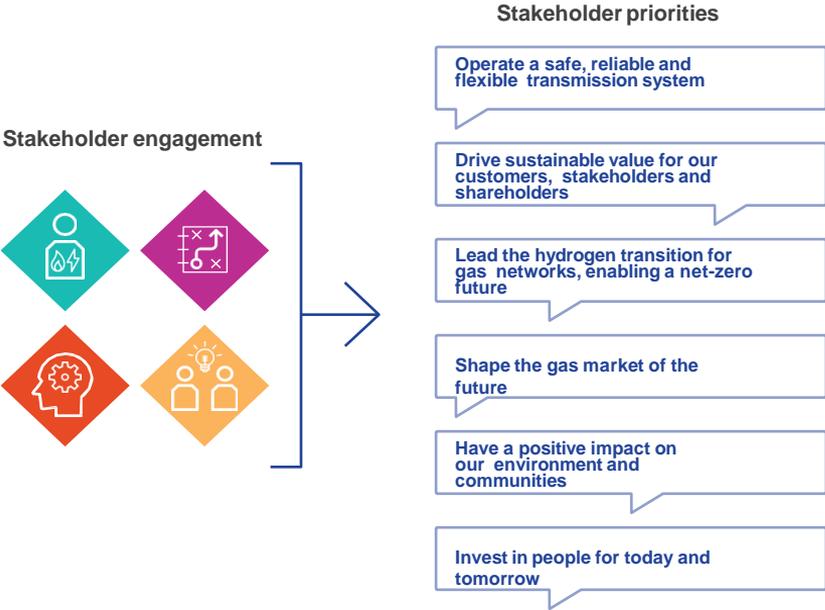
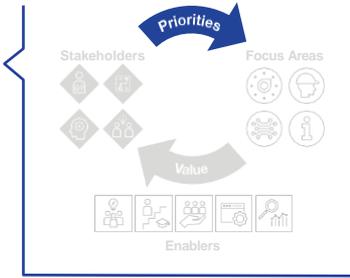


Policy Influencers

Stakeholder priorities

Our stakeholders want us to facilitate the whole energy system transition by embracing innovation and transparency, whilst continuing to keep the system safe, reliable and affordable.

Through our stakeholder engagement we have identified a number of priorities. Delivering against these stakeholder priorities is critical to realising our aim; to be at the heart of a clean, fair and affordable energy future



Our focus areas

We have broken our Digitalisation Strategy down into 4 focus areas. Our organisational structure is aligned to these focus areas, allowing us to maximise the efficiency with which we deliver the components of the strategy.



Optimised System Operator

We will utilise **smart tooling** to help us understand the **drivers** and **behaviours** of our customers and the **impact** of our **actions** and **decisions**



Operations Enablement

Our Plant Operations field force will be **empowered** to make the **right decisions** and have everything they need on their **mobile** devices



Data Driven Asset Management

We will collate **more data** on our assets than ever before and use this to **understand risk** and make **informed decisions**



Market & Customer Insights

We will have **clear processes** and provide greater **understanding** of our **interaction** with customers and their needs



Focus area: Market & Customer Insights

We believe that making data open and easily available has the potential to maximise benefits to society. We collect and collate large volumes of data, which if used appropriately have the potential to support innovation, accelerate the transition to Net Zero and lead to market efficiency through more data driven decision making.

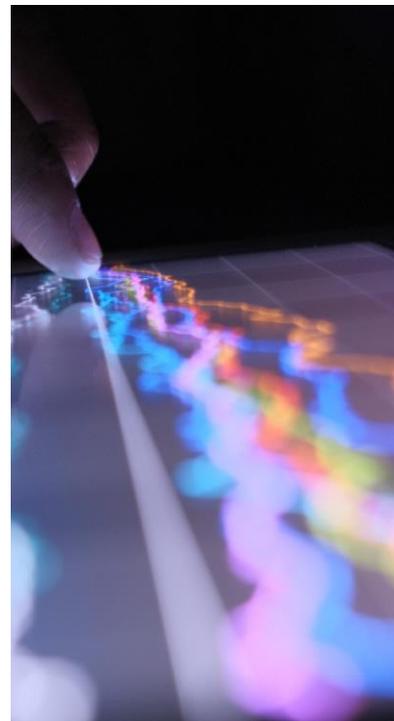
By making more of that data available, we are supporting the use of data to provide richer insights to customers and market participants, supporting quicker review of day-to-day operations and commercial decision making.

We have already established a high-level Data Triage process which provides our customers with a mechanism for requesting data sets and which allows us to identify the data that will generate the greatest value, with a focus on contribution to the delivery of Net Zero and consumer value.

As we move forward, we will continue to adapt and improve this process to ensure we focus on the data that generates the most value.

We also recognise that increasing the value of our data is not just about making more data available, we also need to make the data we share easier to find and use.

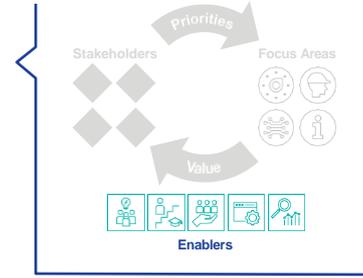
By enhancing descriptions of data, we will remove uncertainty, allowing users to have more confidence in the analysis and solutions they create from our data.



Enabling our digital transformation

To deliver against stakeholder priorities and achieve our aim of leading a clean energy future for everyone, we know that we will need to continue to develop the capability that will enable our digital transformation and support the delivery of work in each of our focus areas.

We have identified 5 key areas of enablement which will underpin the delivery of our strategy



Collaboration



Skills & Culture



Ways of Working



Data Platform &
Management



Advanced
Analytics & AI

Operational Data: Feedback from Industry

We want you to have the right data in the format you want/need

We spoke to you previously and you said that we should invest in the following areas

- **Data Visualization and Discovery**
 - **it is easy to discover what data is available**
 - **It is easy to understand what that is**
 - **It is easy to create visual representations of the data**
- **Data Retrieval**
 - **New data can be added quickly and cheaply**
 - **Data can be retrieved easily by a broad range of different customers groups**
- **Data Quality**
 - **Data is complete and accurate**

Operational Data Workstreams

Projects

Data Discoverability

A project being carried out this year to improve the user interface of our Operational Data

- Easier to pick up for newer users
- Improved visualisations
- Navigation across pages

Data Platform

Longer term investment on underlying structure

Will be carried out in the next few years

Will not change how pages are accessed/used

BAU

Data Triage Process

Data Triage process is permanent, and new data sources can be requested by anyone at any point in time

Data can also be requested from other networks via this process

Market Driven Changes

E.g. UNC Modifications

Data Quality and proposed enhancements

Data Discoverability - Workshop

We want to understand how you use our Operational Data

- What Features you use
- Pain points with current system
- User profile

Main focus is user interface, however we are happy to discuss any other thoughts about our Operational Data, and can feed into any of our workstreams

Engagement Plan

1. Initial workshops

[Eventbrite invite](#)

(2 Workshops; Choose from 14 and 15th June 2-3pm)

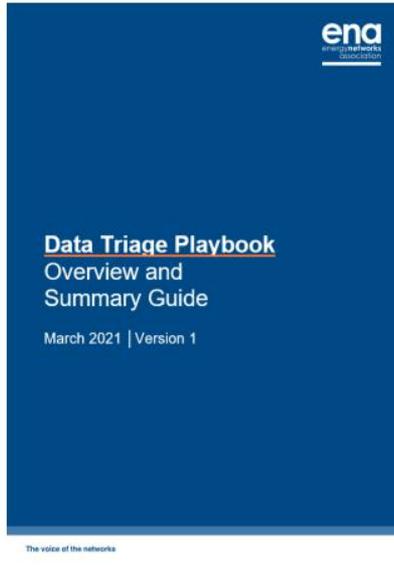
2. Webinar

Webinar in which we will play back the results of the feedback and our recommended way forward – Look out for more information

3. One to one conversations

Data Triage Process

- Creation of **centralised data request** form, hosted on ENA website, and request triage process
- You can still **directly contact** the relevant networks



Data Triage Playbook

Creation of data triage playbook to guide networks from point of receiving request to responding to requestor. Steps in guide include:

- **Documenting** data – metadata and data dictionary
- **Classifying** the data – Open, Public, Shared, Closed
- **Redocumenting** data – updating existing document with results from triage
- Identify **release mechanism** – how should data be shared
- **Feedback** – how effective was the process for the requestor

The image shows a screenshot of the ENA Data Request Form. The form is on a dark blue background with white text. It includes the ENA logo at the top left and the title "Data Request Form" at the top right. The form contains several paragraphs of text explaining the purpose of the form, the current phase (Proof of Concept), and contact information for Elena Theodorou. Below the text, there is a section for "Requester Information" with a sub-heading "1. Full Name *" and a text input field.

ena
energy networks
association

Data Request Form

You can use this form to request any type of data from UK energy network operators.

This request form is in the Proof of Concept phase - data will not currently be delivered as part of this request process.

Energy Networks Association processes these requests on behalf of the Data and Digitalisation Steering Group to gather insights into a standardised approach for handling data requests. The information you provide is managed in line with our privacy practices (<https://www.energynetworks.org/privacy-policy>)

Please note that this request form does not allow you to save progress and continue later.

If you are having difficulties completing this form, please contact Elena Theodorou at elena.theodorou@energynetworks.org

* Required

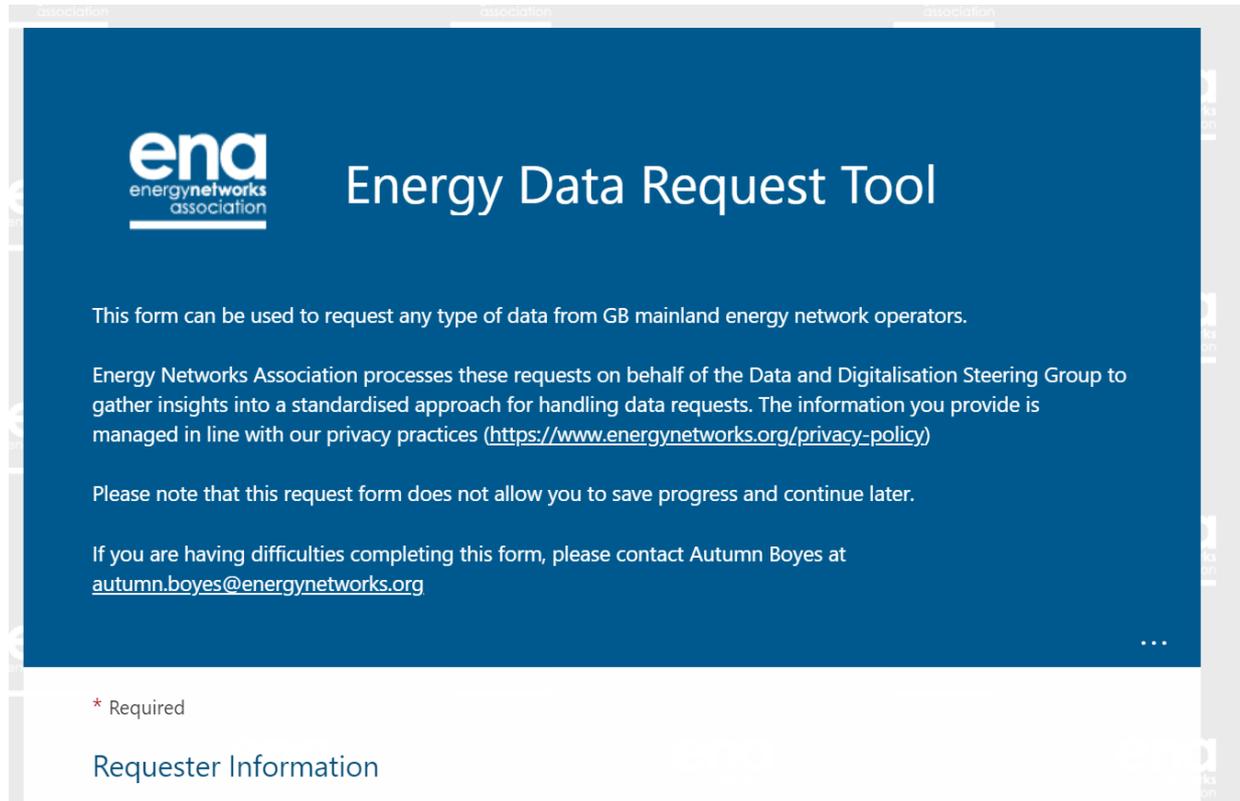
Requester Information

Please provide details about yourself and your organisation

1. Full Name *

Data Triage Requests

<https://forms.office.com/Pages/ResponsePage.aspx?id=2gPpVtir50mfwbvKhkjFZZOLSIyaQIIHnvd5B7FmBqIUQkVDT1NPSkFETFo3VVFVWVIM3T0JSSFIQNCQIQCN0PWcu>



The screenshot shows the top portion of a web form titled "Energy Data Request Tool" from the Energy Networks Association (ENA). The ENA logo is on the left. The text explains that the form is for requesting data from GB mainland energy network operators, processed on behalf of the Data and Digitalisation Steering Group. It includes a link to the privacy policy and a note that progress cannot be saved. Contact information for Autumn Boyes is provided at the bottom. A "Requester Information" section is partially visible at the bottom of the screenshot.

ena
energynetworks
association

Energy Data Request Tool

This form can be used to request any type of data from GB mainland energy network operators.

Energy Networks Association processes these requests on behalf of the Data and Digitalisation Steering Group to gather insights into a standardised approach for handling data requests. The information you provide is managed in line with our privacy practices (<https://www.energynetworks.org/privacy-policy>)

Please note that this request form does not allow you to save progress and continue later.

If you are having difficulties completing this form, please contact Autumn Boyes at autumn.boyes@energynetworks.org

...

* Required

Requester Information

Gas
Transmission

Network Capability

Assessing Network Resilience

Neil Sorrell
Network Strategy Manager

national**grid**



Introduction

- Apologies for those that may have seen this already
- I'm here to talk about compressor availability and how it impacts network capability and resilience
- Builds on the feedback from 2021 Annual Network Capability Assessment annex
- We really want your feedback ahead of inclusion within the 2022 ANCAR
 - Specifically does it make it clear:
 - how we deliver the maximum level of capability?
 - how often we are able to do this?
 - And what it means to you if we don't?
 - Is there anything more would you like to see us?

Figure 19 Example circular chart, showing compression availability in South Wales Zone with two or one compressors available at Wormington

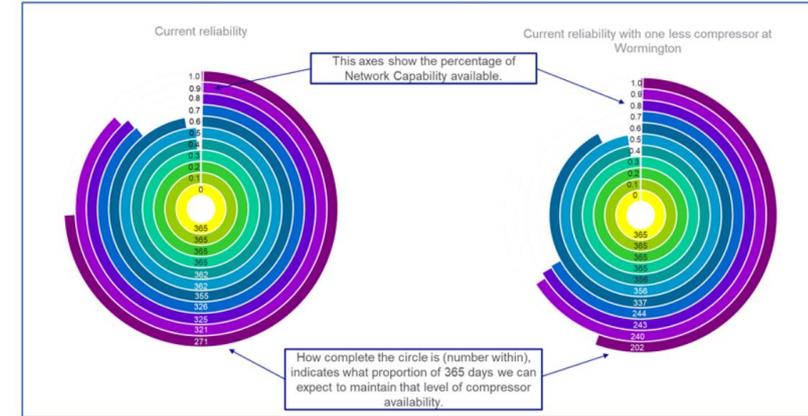
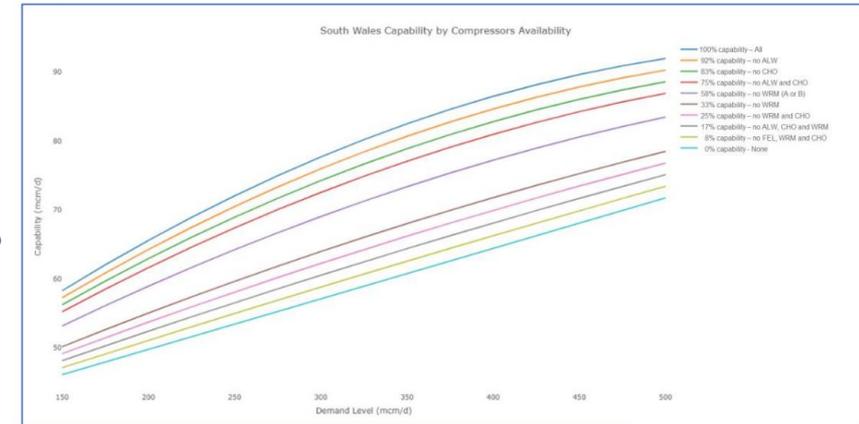
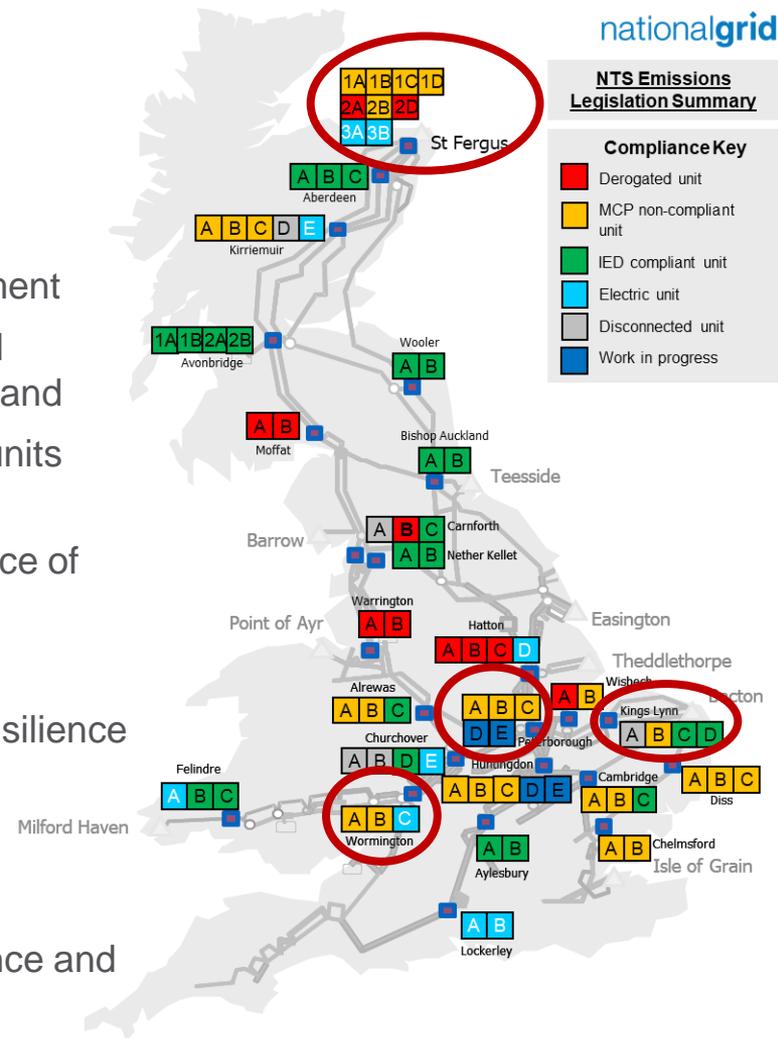


Figure 22 Hypothetical data showing the potential effects on capability with the loss of compressor sites



Why is it important

- **Medium Combustion Plant Directive**
 - Twenty-eight units are non-compliant
 - Our RIIO-2 submission highlighted 4 key sites for investment
 - These are critical for LNG imports, European imports and exports, supporting southern demand and supply in Scotland
 - Without addressing MCP compliance on these sites the units would be limited to 500 hours of operation per year
 - This could significantly impact the availability and resilience of these sites
- **NetZero transition**
 - Important we fully understand impact on capability and resilience before assets are repurposed
- **Gas on and off the system**
 - Our assets are aging
 - We need to understand how this could impact the resilience and capability of the system



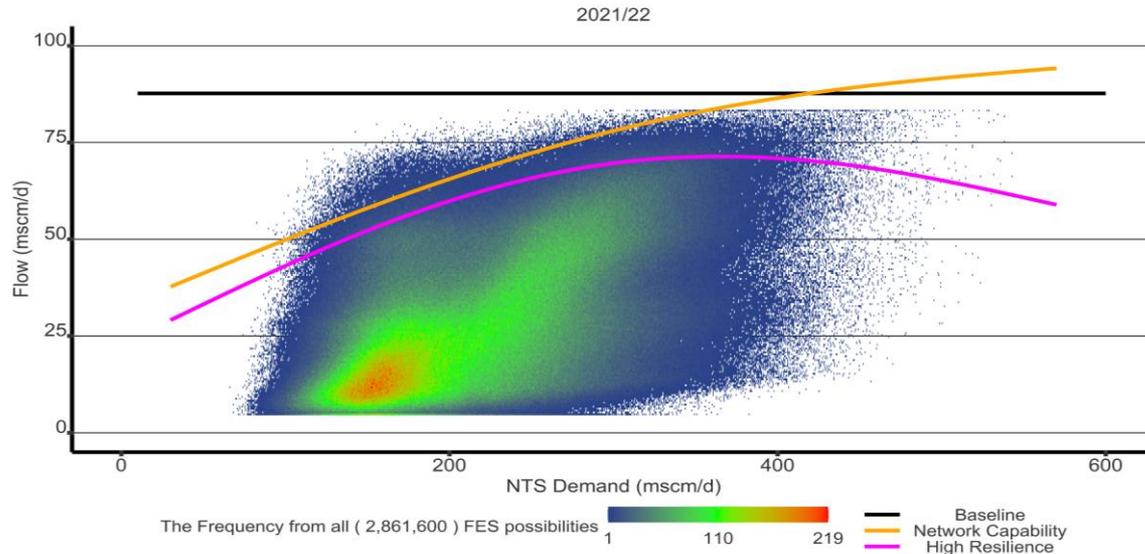
Assessing resilience

Building on the Flame Charts developed through the ANCAR process

Currently these show the **orange** “intact” capability – Our maximum level of network capability

We are proposing an additional **purple** line on the chart – the “high resilience” line

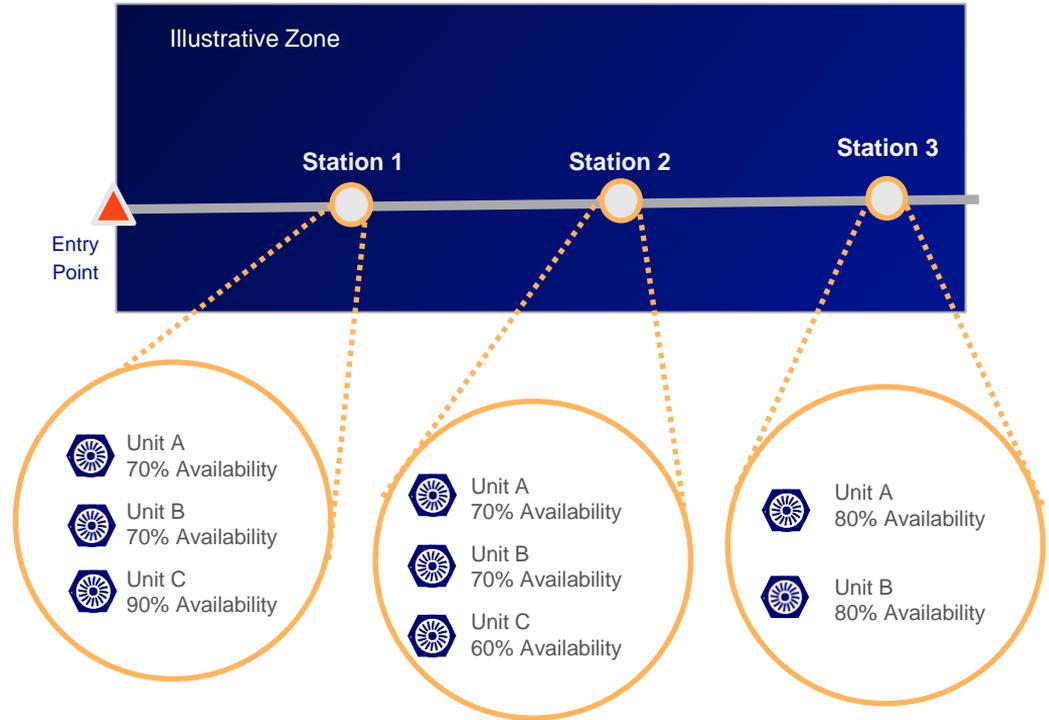
This shows the level of capability we can provide over 99% of the time



Calculating Network Capability and Availability

Example Entry Zone

- To provide the maximum level of capability multiple compressor stations work together
 - For this example all 3 stations are required in series
- Each station can be different
 - Station 1 & 2 require 2 out of 3 compressors working in parallel
 - Station 3 requires 1 out of 2 compressors in operation
- Each compressor unit availability level is different based on:
 - Age of the individual compressor train
 - Type of unit
 - How it is operated and how often



Availabilities in the illustrative Zone are for illustrative purposes only and are not based on actual compressors

Calculating Network Capability and Availability

Intact capability

- The full capability can only be met with all 3 compressor sites operating in series
- Each site has a level of resilience with “back-up” units

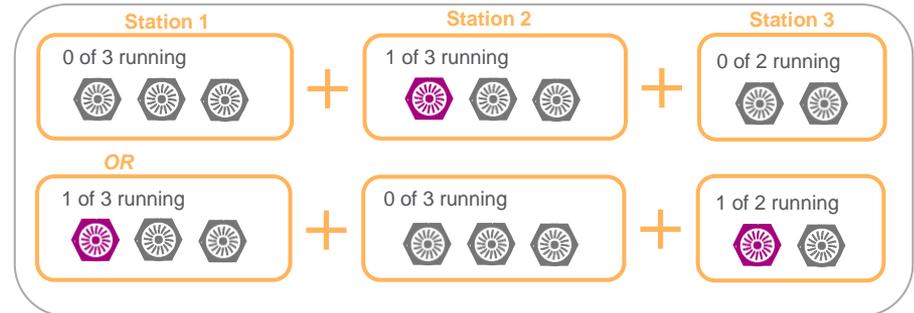
High confidence capability

- The high resilience line can be met in multiple ways
- In this example there are 2 ways of providing the same level of capability

1. Illustrative Zone: example Intact capability combination



2. Illustrative Zone: High confidence capability combinations



Calculating Network Capability and Availability

Unit-level to Zone-level

The individual unit availabilities are combined to understand:

- Station availability
- Zone availability

The figure on the right illustrates how we combine unit level data to station and zone for the intact capability

The calculation is repeated for the different ways of achieving the “High Resilience” line

Illustrative Zone Example: Intact Capability

Compressor Unit	Current Availability		Station Availability		Zone Availability		
 Station 1 Unit A	70%	}	Any 2 Units —	87%	}	Combine all 3 station availabilities —	62%
 Station 1 Unit B	70%						
 Station 1 Unit C	90%						
 Station 2 Unit A	70%	}	Any 2 Units —	74%			
 Station 2 Unit B	70%						
 Station 2 Unit C	60%						
 Station 3 Unit A	80%	}	A or B —	96%			
 Station 3 Unit B	80%						

Assessing resilience

To understand resilience, we need to know the number of days each year within the **pink area**

Blue Area

- We have a greater than 99% chance of meeting all days within this area

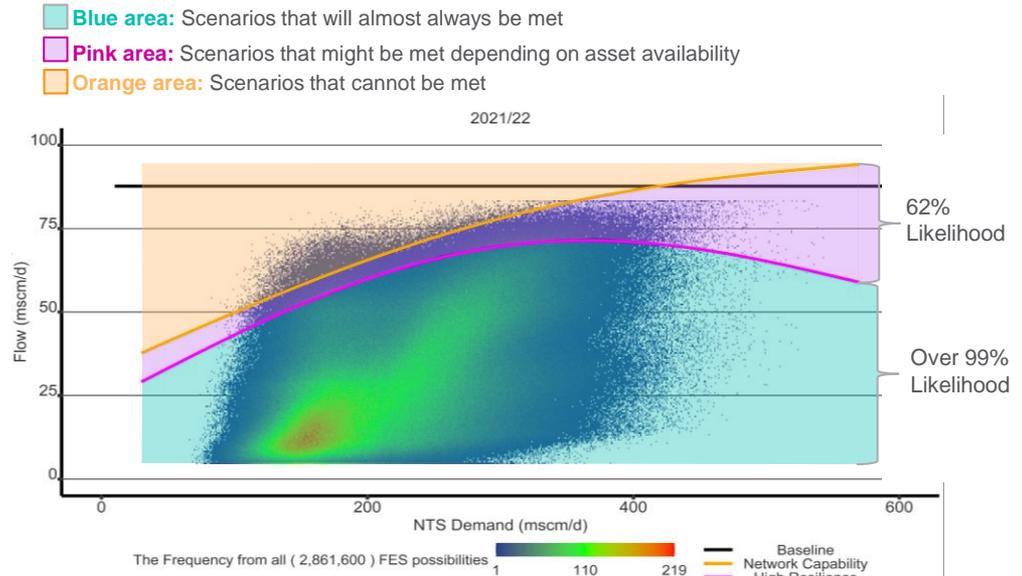
Pink Area

- We have calculated that we have a 62% chance of having the capability to meet these days in this example
- Our resilience risk is the number of days multiplied by 38%

Orange Area

- The current network is not capable of meeting these days
- The number of days in this area is a network capability risk

Illustrative Zone example

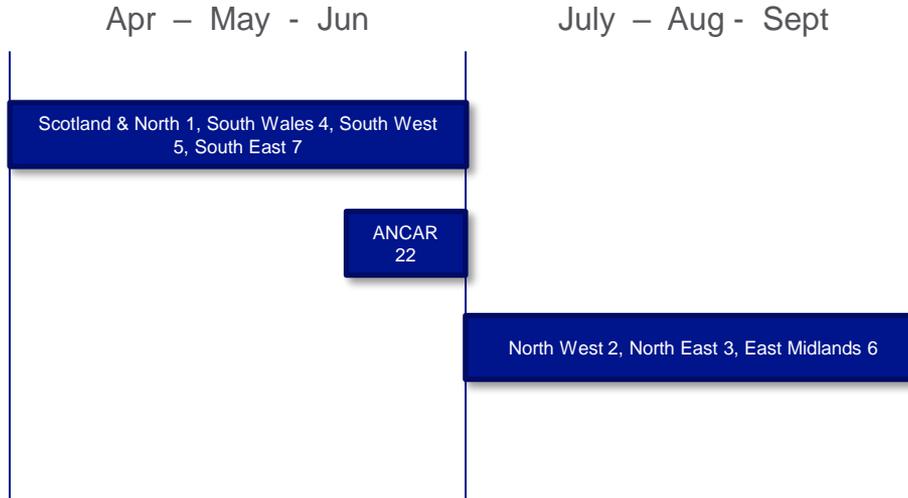


Assessing resilience

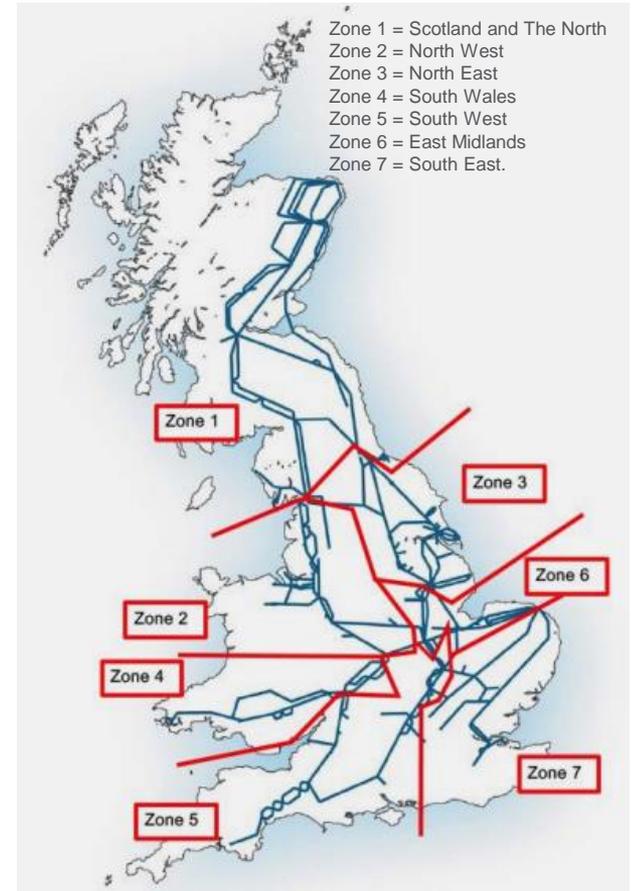
We will publish resilience for 3 time periods, the current resilience, at the end of RIIO-2 and in 10 years time

<p>Current Resilience</p> <ul style="list-style-type: none"> Our Illustrative Zone resilience risk is 3 constraint days a year on average (8 x 38%). This is based on the current availabilities of the compressor units and our modelling of current year FES flow scenarios in the Zone. The overall risk of constraints in the zone is 4 days a year – Resilience Risk plus the Network Capability risk 	<table border="1"> <thead> <tr> <th>Constraint Days</th> <th>10th Percentile</th> <th>Average Days</th> <th>90th Percentile</th> </tr> </thead> <tbody> <tr> <td>Days above Network Capability (Orange Area)</td> <td>0</td> <td>1</td> <td>2</td> </tr> <tr> <td>Days between Intact and High Resilience (Pink Area)</td> <td>5</td> <td>8</td> <td>11</td> </tr> <tr> <td>Resilience Risk</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Overall Constraint Risk</td> <td>2</td> <td>4</td> <td>6</td> </tr> </tbody> </table>	Constraint Days	10 th Percentile	Average Days	90 th Percentile	Days above Network Capability (Orange Area)	0	1	2	Days between Intact and High Resilience (Pink Area)	5	8	11	Resilience Risk	2	3	4	Overall Constraint Risk	2	4	6
Constraint Days	10 th Percentile	Average Days	90 th Percentile																		
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Resilience Risk	2	3	4																		
Overall Constraint Risk	2	4	6																		
<p>Resilience at the end of RIIO-2</p> <ul style="list-style-type: none"> The number of days between the intact and high resilience lines has increased The planned investments increased the zonal availability to 80% Resulting in the resilience risk reducing to 2 constraint days a year (10 x 20%) However the overall risk increased to 4 constraint days a year on average due to the number of days above our network capability also increasing 	<table border="1"> <thead> <tr> <th>Constraint Days</th> <th>10th Percentile</th> <th>Average Days</th> <th>90th Percentile</th> </tr> </thead> <tbody> <tr> <td>Days above Network Capability (Orange Area)</td> <td>0</td> <td>2</td> <td>4</td> </tr> <tr> <td>Days between Intact and High Resilience (Pink Area)</td> <td>6</td> <td>10</td> <td>14</td> </tr> <tr> <td>Resilience Risk</td> <td>1</td> <td>2</td> <td>2</td> </tr> <tr> <td>Overall Constraint Risk</td> <td>1</td> <td>4</td> <td>6</td> </tr> </tbody> </table>	Constraint Days	10 th Percentile	Average Days	90 th Percentile	Days above Network Capability (Orange Area)	0	2	4	Days between Intact and High Resilience (Pink Area)	6	10	14	Resilience Risk	1	2	2	Overall Constraint Risk	1	4	6
Constraint Days	10 th Percentile	Average Days	90 th Percentile																		
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Days between Intact and High Resilience (Pink Area)	6	10	14																		
Resilience Risk	1	2	2																		
Overall Constraint Risk	1	4	6																		

Timeline



- We hope to have the first 4 zones complete ready for the 22 ANCAR
- The remaining 3 zones will be completed by the end of September and published with the 22 Gas Ten Year Statement.



Gas
Transmission

Updates

nationalgrid



7 Day Margins Notice Forecast



nationalgrid

7-Day Margins Notice Forecast

With the ongoing and unprecedented geopolitical environment, we are continually assessing our information provision to ensure it is fit for purpose and adds value to the industry.

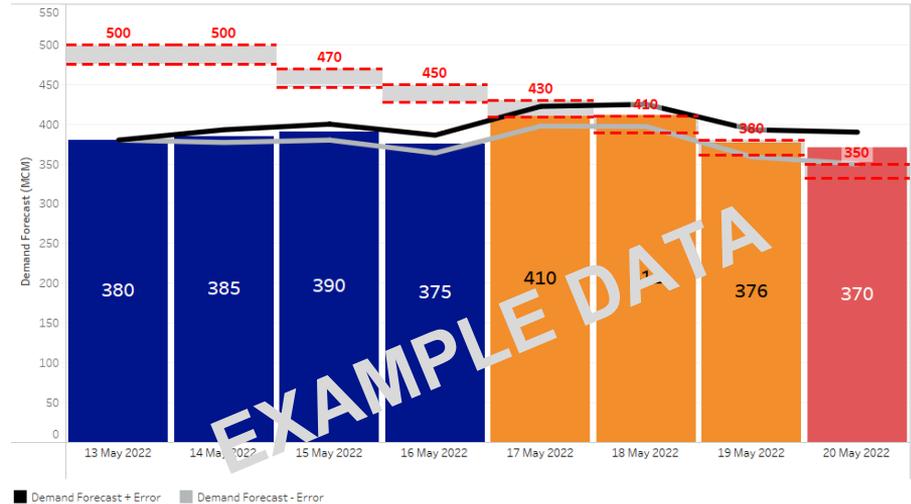
We believe there may be benefit in supplementing the existing day-ahead Margins Notice process to provide a 7-day forecast of this potential likelihood of a notice being issued.

This will provide an indicative view of the potential for 'tightness' in the market by forward predicting our view of available supply versus forecast demand

Error bars in the data reflect the uncertainty in the supply and demand forecasts and required assumptions

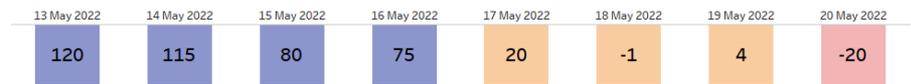
Margin Notice Forecast

Gas Day Executed on: 13th May 2022
Reporting For: 13th May 2022 to 20th May 2022



Forecast Surplus

The difference between the margin notice and the demand forecast



Margin Notice Trigger

■ Demand Forecast above 105% of Margin Notice
■ Demand Forecast below Margin Notice

■ Demand Forecast between 95% and 105% of margin notice

Industry Impact

For this to be a viable and useful tool we appreciate that the methodology should be developed iteratively with the community and we propose to seek feedback on our thinking and proposed approach over the coming months via Operational Forum and Transmission Workgroup

- At this stage, we do not propose this tool falls under obligated information provision and therefore will not require any modifications to code a UNC Modification to introduce it
- It will be intended to supplement the existing Margins Notice process by giving a view of supply margins across a wider timeframe, effectively forecasting the Margins Notice trigger. We anticipate the industry would benefit from this approach by providing more input to commercial decisions, particularly during higher demand periods
- When the methodology is finalised we propose:
 - Testing the output across the remainder of the summer to ensure accuracy
 - A post-winter assessment to test consistency against the Margins Notice process and to identify if this should be an enduring piece of information provision

Methodology (Initial View)

- Published on a Friday with data for the following 7 days (daily updates tbc). D-1 to use the Margins Notice data to ensure consistency Supply:
 - Non-storage supplies (NSS):
 - UKCS and Norway: utilise existing Margins Notice NSS assessment
 - Interconnectors: apply historical 7-day mean import/export value
 - Storage: Apply the 7-day historic mean at a site level and for each day's supply margin calculation assume a site can withdraw at its maximum delivery rates (contingent on stock levels and subsequent storage deliverability curves)
 - LNG: Determine future stock levels at a site assuming daily NTS deliveries are in line with the 7-day historic mean, coupled with cargo delivery consistent with global LNG cargo tracking. If a site is >30% (threshold to be determined) full, assume maximum delivery for the supply margin calculation, or alternatively, remove from the calculation (i.e. assume zero flow)

$$\textit{Supply Margin} = \textit{NSS} + \textit{LNG} + \textit{Storage} - \textit{Demand}$$

Further Steps

- **Viability of daily updates:** Dependant on the availability of demand forecasting data and increased NG resource requirements
- **Confirm thresholds for LNG flow:** LNG Operator engagement required
- **Determine size and accuracy of error bars:** Utilise historic D-1 to D-5 demand forecasting errors and create supply methodology
- **Define RAG threshold:** Examine potential likely differences between supply and demand errors to give realistic RAG
- **Determine industry actions required (policy):** i.e. ad-hoc RFI, OGA Gas Availability Status Report etc.

Proposed Changes to GTYS

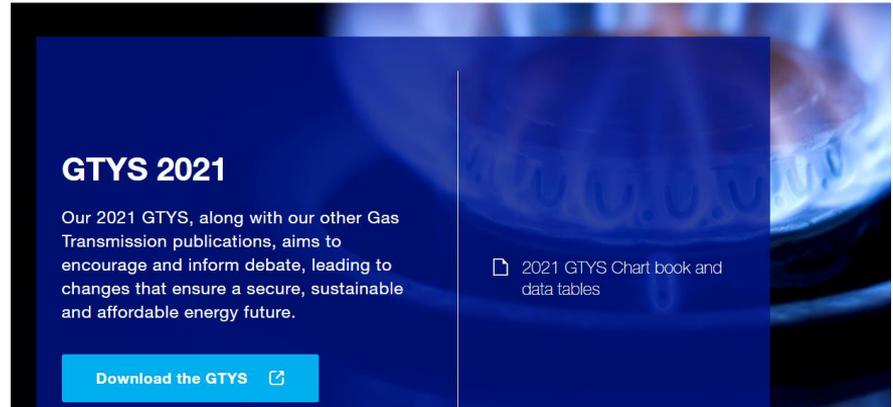


Reasons for Change

- **Over time, content has become repeated through multiple documents/locations**
- **Less pages = more digestible without losing content**
- **Becoming more of a story for the next 10 years linking with ANCAR.**

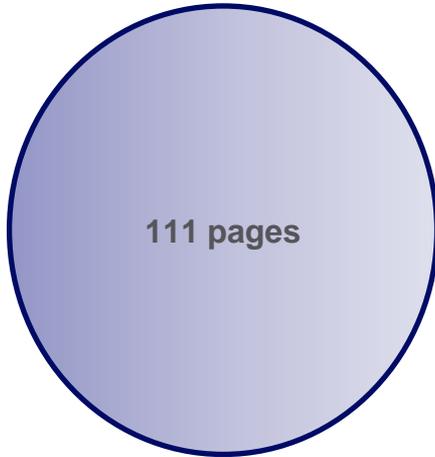
Gas Ten Year Statement (GTYS)

The GTYS is published annually to provide you, our customers and stakeholders, with a better understanding of how we intend to operate and plan for the gas National Transmission System (NTS) over the next ten years.



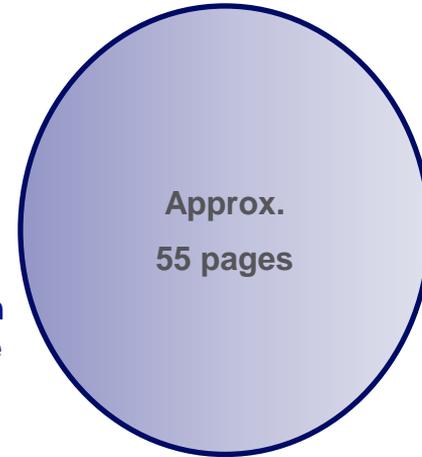
GTYS changes

Current GTYS Pages



Repeated content such as capacity auctions have been removed. In its place there is a link to the relevant space on the website, this has all of the information there and GTYS just repeated it.

Proposed GTYS pages



Proposed GTYS Structure

New Structure

Intro

Drivers for Change

Network Capability

Development

Appendix

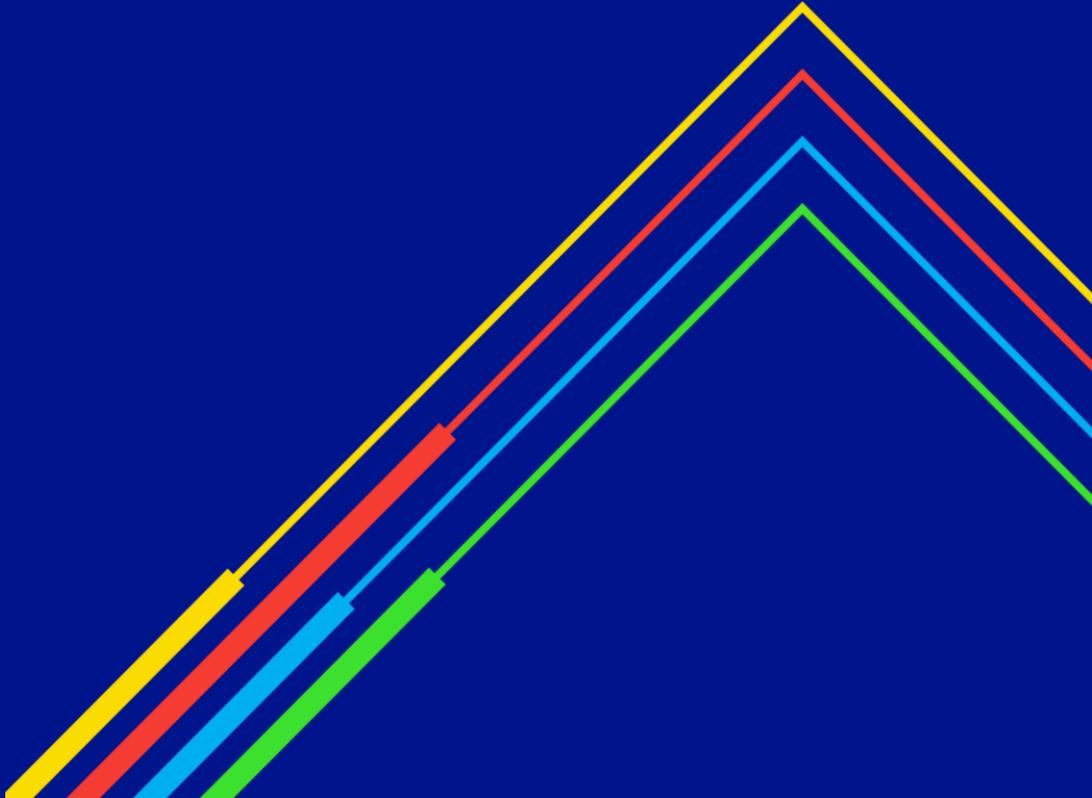
Network Capability

This is the current network capability, the 'what' and the 'why' that is a preview of the ANCAR data.

Development

This is the future and the 'how', explaining what we plan to do.

Gemini Spring Release 2022



national**grid**

Introduction of Weekly Entry NTS Capacity Auction

Weekly System Entry Capacity (WSEC)	
Auction timing	First Bid Window: 20th May (D-10) for w/c 30th May (Mon), and then every week thereafter Bid Window: Always D-10, 08:00 – 17:00 D = first Gas Day of the weekly period, being a Monday New method of sale in Gemini: WSEC (bookings can be made via APIs)
Allocation	D-9
Price applicable	Standard reserve price. Charges will be included under the existing DFC charge type within the NTS Entry Capacity (.NTE) invoice.
Quantity of capacity available	Unsold NTS RMTnTSEC Entry Capacity
Interconnectors	N/A - not compatible with CAM

Gemini Sustain Change

nationalgrid



Single Sign on (SSO)

Reminder Implementation Date 29th May 2022

Summary of Single Sign-On (SSO) Project

This change is to simplify the login for Gemini Online Screens, therefore creating a better User experience

- This change follows feedback from the industry about the current need for 2 sets of IDs and passwords (Gemini Citrix and Gemini Application) to log in to the Gemini system.
- It will deliver a single sign on experience with Multi Factor Authentication (MFA) method available over the internet
 - ✓ Along with self serve password reset ability
- This will remove the use of XP1 tokens following implementation

Single Sign on (SSO)

Prior to implementation

Existing IX Route

If you wish to continue accessing Gemini via your IX link then the only impacting change will be the Single Sign-On component.

For this to work properly, you will need to:

- Ensure you have matching Citrix and Gemini ID. If your IDs do not currently match, or if you are sharing an ID, then you must raise a request via the Xoserve Service Desk to get your own matching IDs
- There is a video on the dedicated SSO webpage [Gemini Single Sign-On change](#), which you may find useful to prepare your users.

New Internet Route

Please note that the internet route will be replacing the XP1 tokens, and you will need to register for MFA to use this option. If you wish to access Gemini via the new internet route, then the following applies:

- You will have to use the updated Gemini services URL, which has been published in the user guide and on the SSO webpage.
- You will need to register your device from the Citrix login page and enter the One-Time-Passcode (OTP) every time you access Gemini via this route.
- Please ensure you have a robust leavers process so that any of your Gemini leavers do not have access via MFA after leaving your organisation.

Single Sign on (SSO)

For further information please visit:

- [Single Sign-on webpage](#)
- A user guide covering all the changes can be found [here](#)

After implementation, if you are facing any issues with any of the new functionality then please don't hesitate to contact the Xoserve Service Desk on 0845 600 0506 or via email on servicedesk@xoserve.com.

Alternatively you can raise a ticket via the portal using this [link](#).

Shaping the gas transmission system of the future

During our 2021 events, stakeholders asked us they wanted more events and updates...

...therefore, we will be holding a Shaping the gas transmission system of the future 'Lite' in July

- Covering topics you've told us you're interested in
 - Journey to net zero
 - Impact of Ukraine war
 - Sale process
- Update on our performance

Are there any other topics would you be interested in discussing?



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Next Forum

The next Gas Operational Forum will take place on the 30 June

Please send any topic requests to:

Box.OperationalLiaison@nationalgrid.com

Register now at:

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