

# Operating the Network

6<sup>th</sup> July 2023

We will start at 10.02 to allow participants to finish previous meetings and join the call

Slido.com  
#NGT5



**national gas  
transmission**

# Welcome and Opening

Thank you for joining us today



**Ian Radley**  
System Operations Director

# Who will be speaking?



**Craig James**  
Head of  
National Control



**Nera Lenden**  
Customer & Stakeholder  
Business Partner

# Logistics



Should last around 60 minutes



Questions and Polls via [slido.com](https://www.slido.com) using #NGT5



All attendees on mute and cameras off



Slides and recording will be circulated

# Agenda

1. Network Overview

2. The Changing Dynamics of European Supply and the Impact on the Operation of the UK Gas Network

3. The Commercial Regime

4. Ensuring we Operate Safely, Efficiently and Economically



# Network Overview

# The National Transmission System

- 7600km pipeline
- 38 – 94bar operating pressure
- Winter linepack operating range 330 – 373mcm
- Summer linepack operating range 321 – 367mcm
- Daily linepack swing up to 41mcm
- 21 compressor stations (+ St Fergus, which isn't operated by GNCC)
- 60 operational compressor units
- 600+ Above Ground installations
- 5 Beach Reception Terminals
- 3 LNG Importation Terminals
- 3 Interconnectors (IUK, BBL & GNI)
- 109 Distribution Offtakes
- 33 Power Station Connections
- 12 Large Industrial Connections
- 8 Storage Sites
- 1 Gas National Control Centre (GNCC)
- 1 Emergency Control Room (ECR)
- Max historical NTS demand 465mcm/d
- 1 in 20 peak demand 483mcm/d (Winter 22/23) [From winter outlook 2022/23]



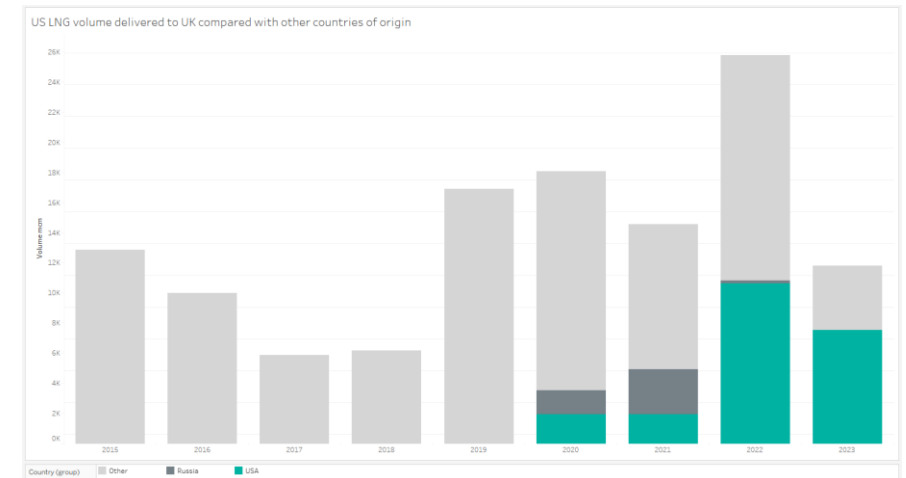
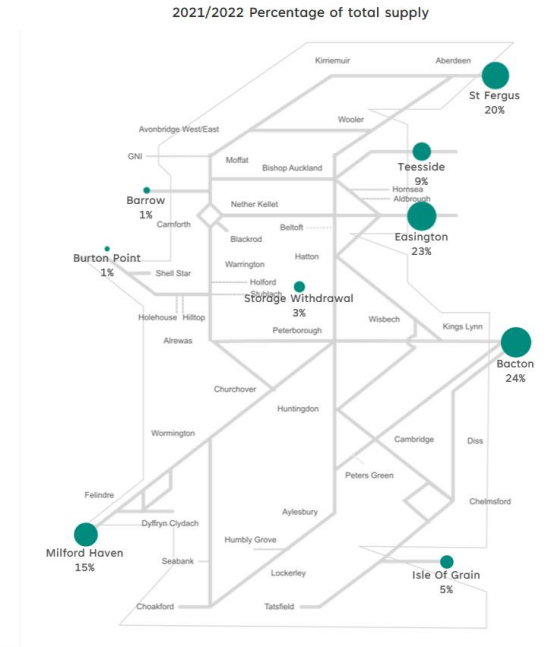
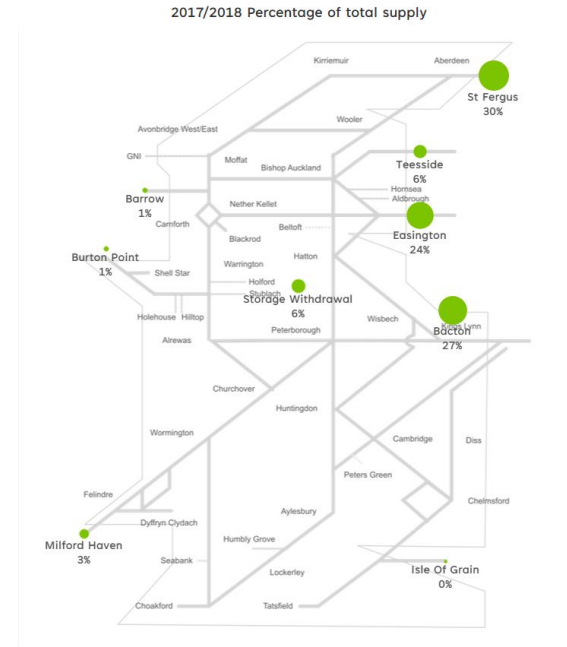
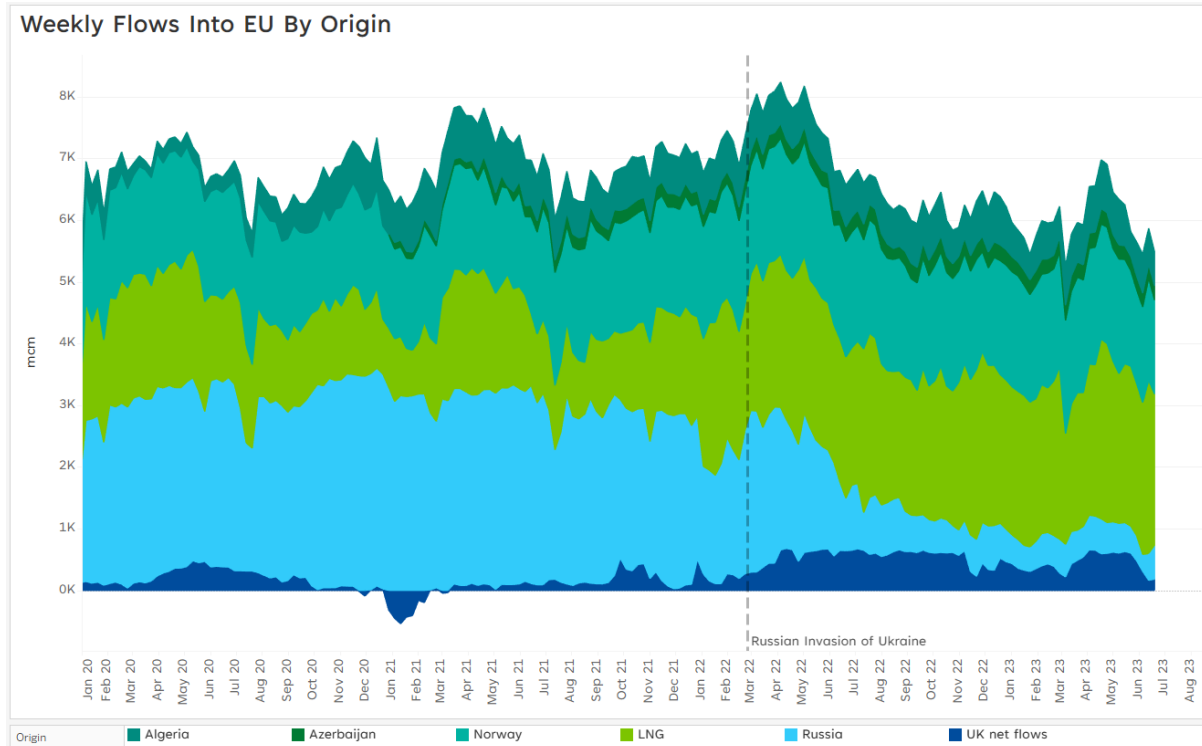
This map is for illustrative purposes only

# The Changing Dynamics of European Supply and the Impact on the Operation of the UK Gas Network



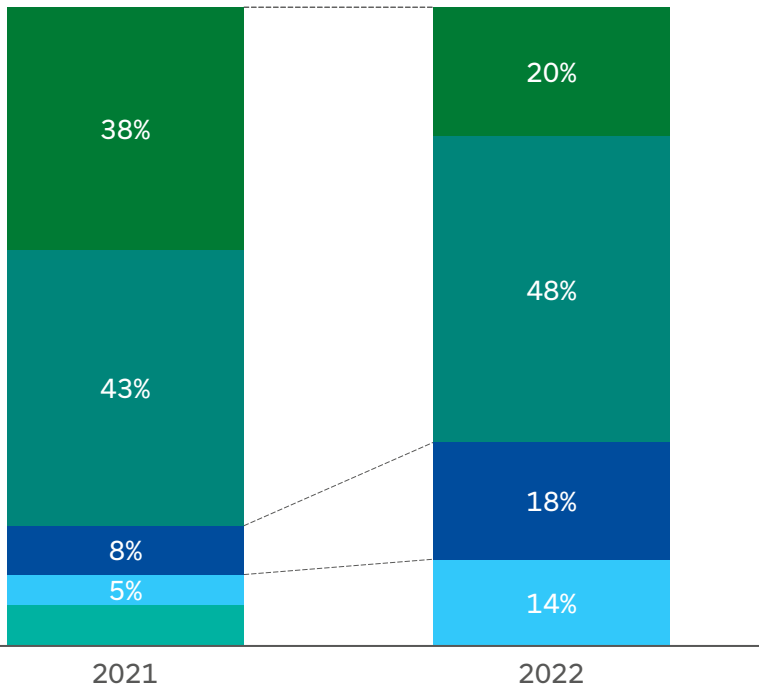
# Changing supply dynamics

Summer operation of the GB gas network is determined by network maintenance, the location of supply and volume of demand. Russia's war in Ukraine had, and continues to have a major impact on European supply and demand

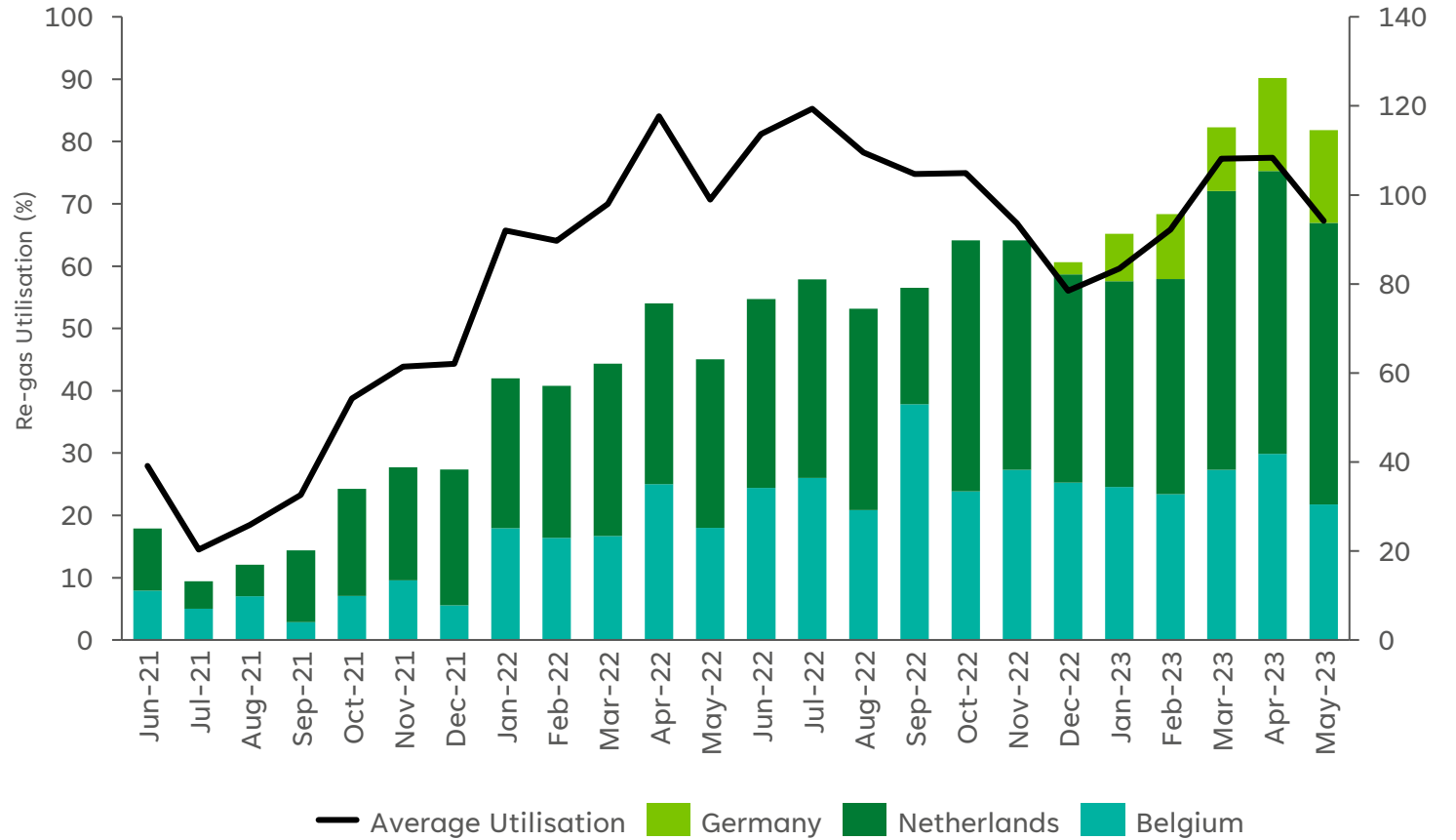


# LNG supply has offset a large share of lost Russian pipe gas supply to North Western Europe<sup>1</sup> in 2022

NW.E Gas Supply Mix (%)

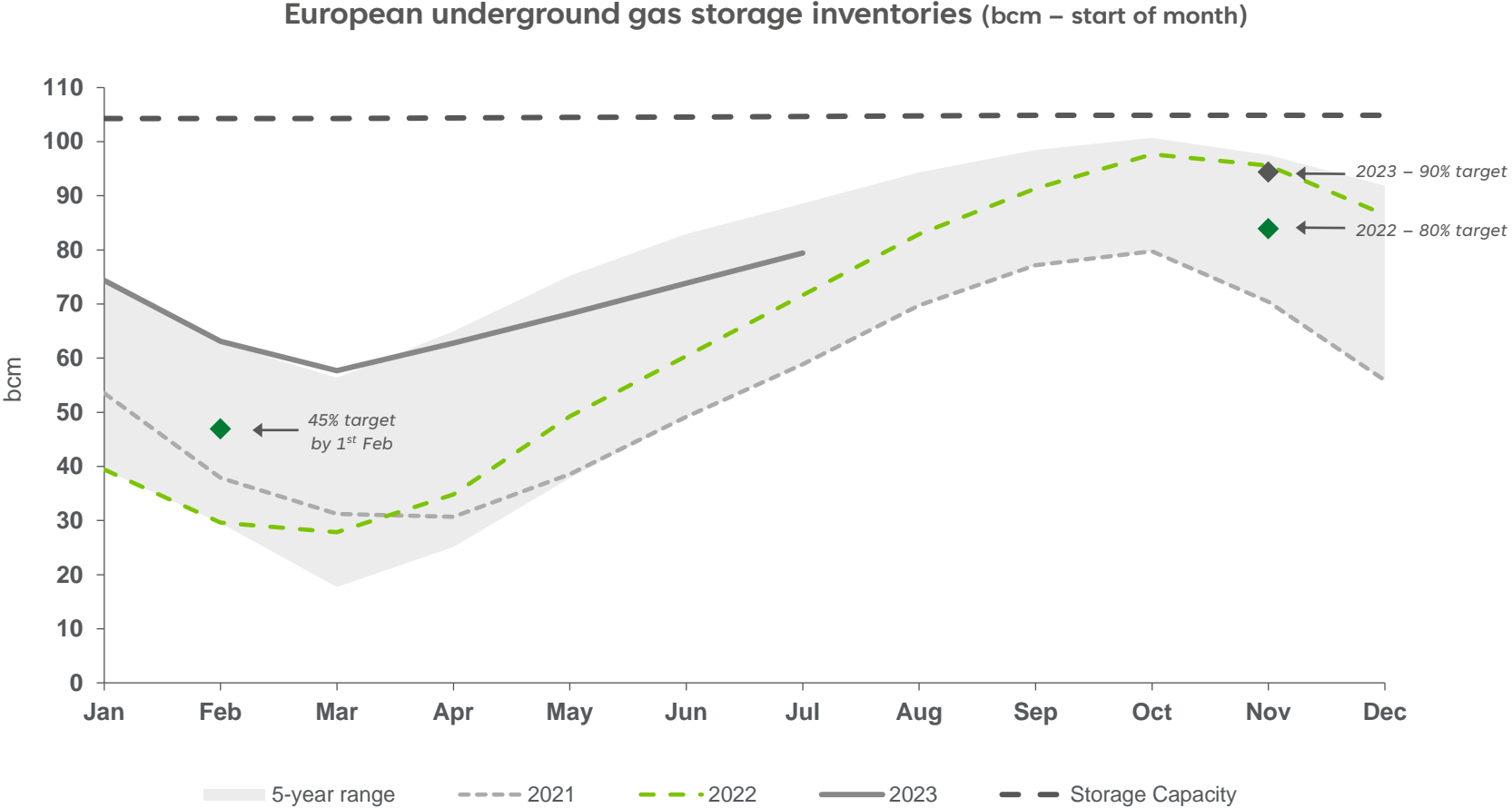


NW.E LNG Send out (mcm/d) vs average utilisation (%)



■ Domestic  
■ Norway  
■ UK Imports  
■ Russian Pipe  
■ LNG  
■ Other

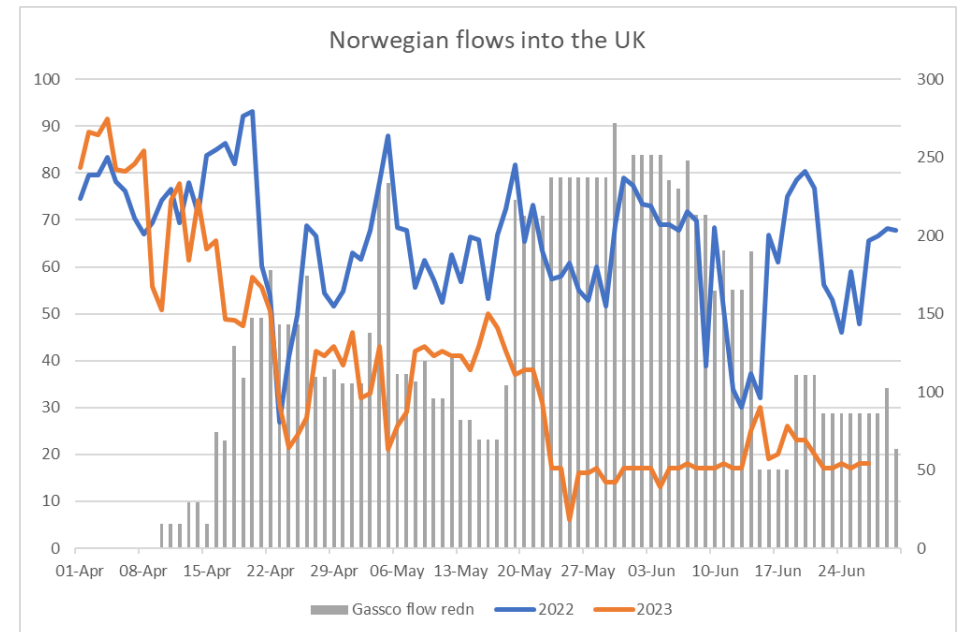
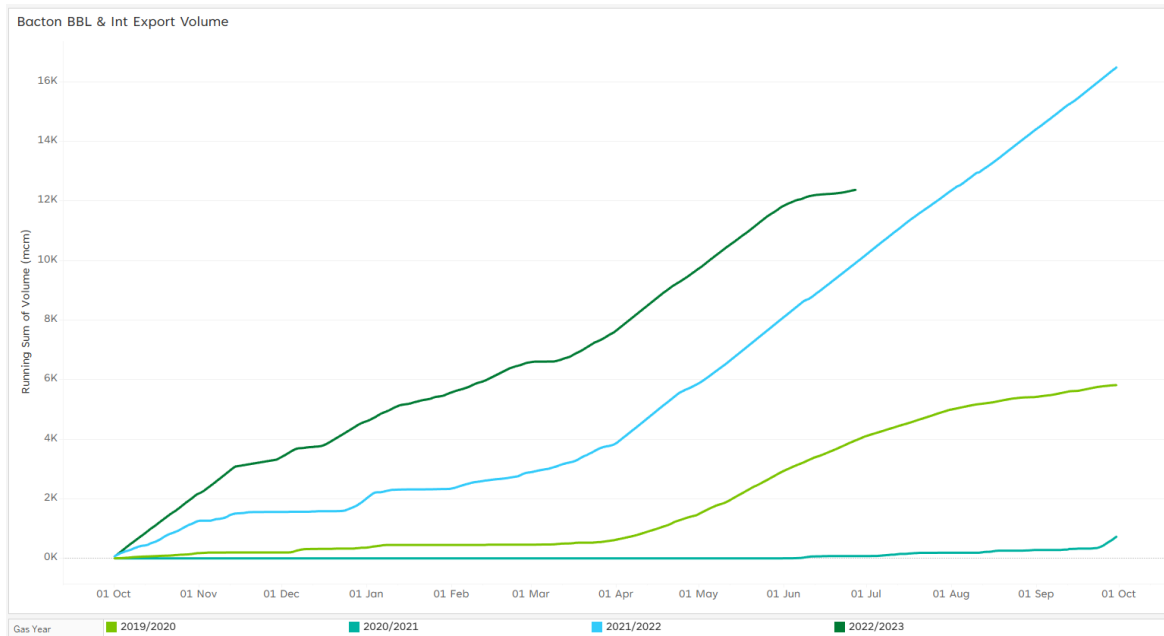
# Strong LNG and UK imports helped the EU meet its gas storage targets ahead of schedule



- EU gas storage levels at the beginning of July were ~76% full - 10% higher than the 5-yr average for this time of year.
- Stocks in Feb 22 were 34% higher than the EU mandated 45% target level
- The EU is on track to meet its **90% storage target by 1<sup>st</sup> Nov**, and fill up ahead of schedule.
- A combination of lower demand, higher LNG and non Russian pipe imports (Norway and UK) have led to storage re-filling over the past 12 months,

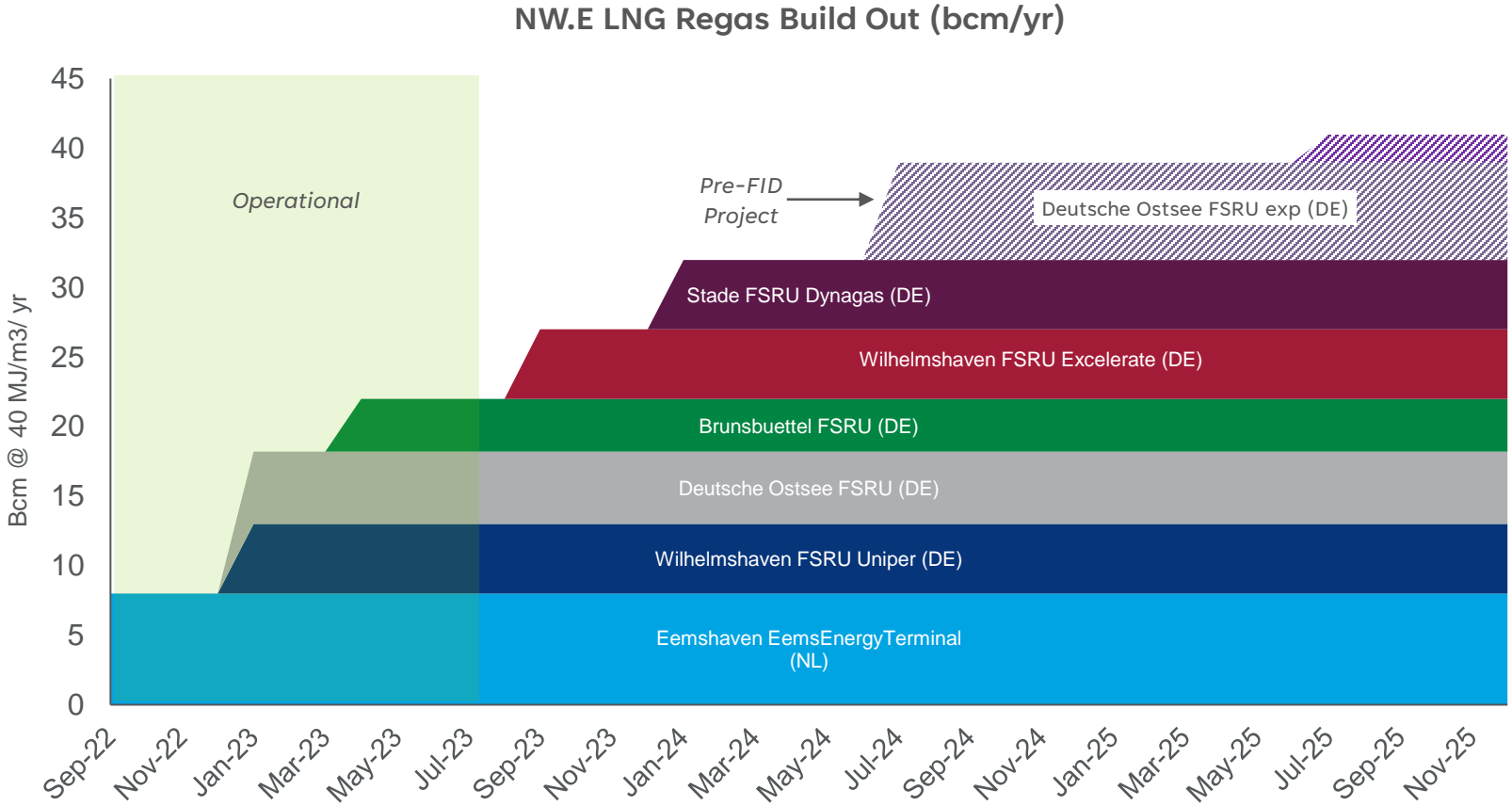
# Strong EU storage levels resulting in reduced continental exports

Cumulative EU exports are higher than this time last year, although recent exports have significantly plateaued. This is a combined effect of lower demand due to the EU storage position and significant planned maintenance on the Norwegian system reducing available supply to GB





# 4 FSRU's have been connected in NW.Europe since Sept 22, with another 2 currently in construction



- Loss of Russian pipe supply has led to efforts to procure and deploy FSRU's as soon as possible (Germany)
- ~23bcm/yr of new LNG import capacity has already been connected since Sept 22
- A further 10bcm/yr of capacity is currently in construction to be added later this year
- By 2025, NW.Europe is expected to add 40-45bcm/yr of FSRU capacity (~80% of lost NS1 flows)





# The Commercial Regime

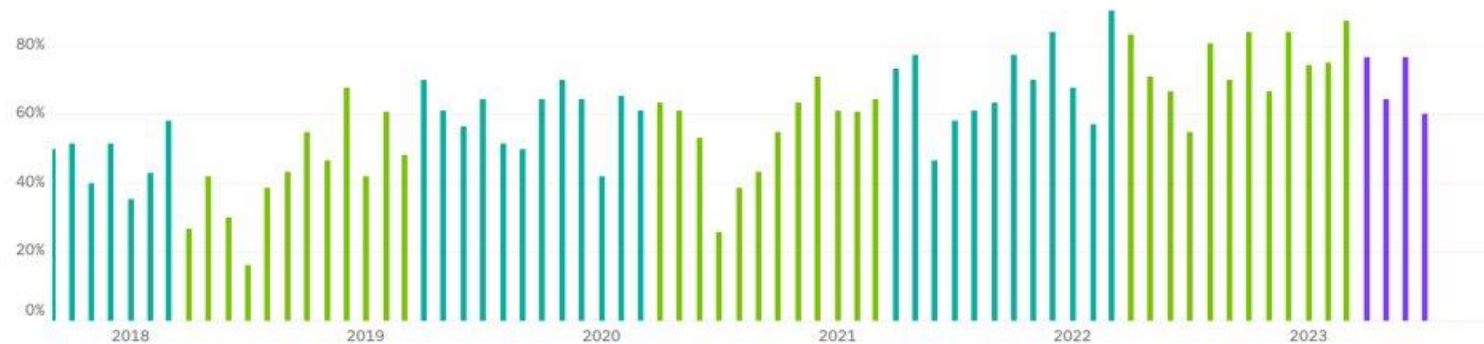
# Volume and number of Residual Balancing actions

Gas Year 2017/18 To Date System Average Price (Daily)



Trading Frequency (%)

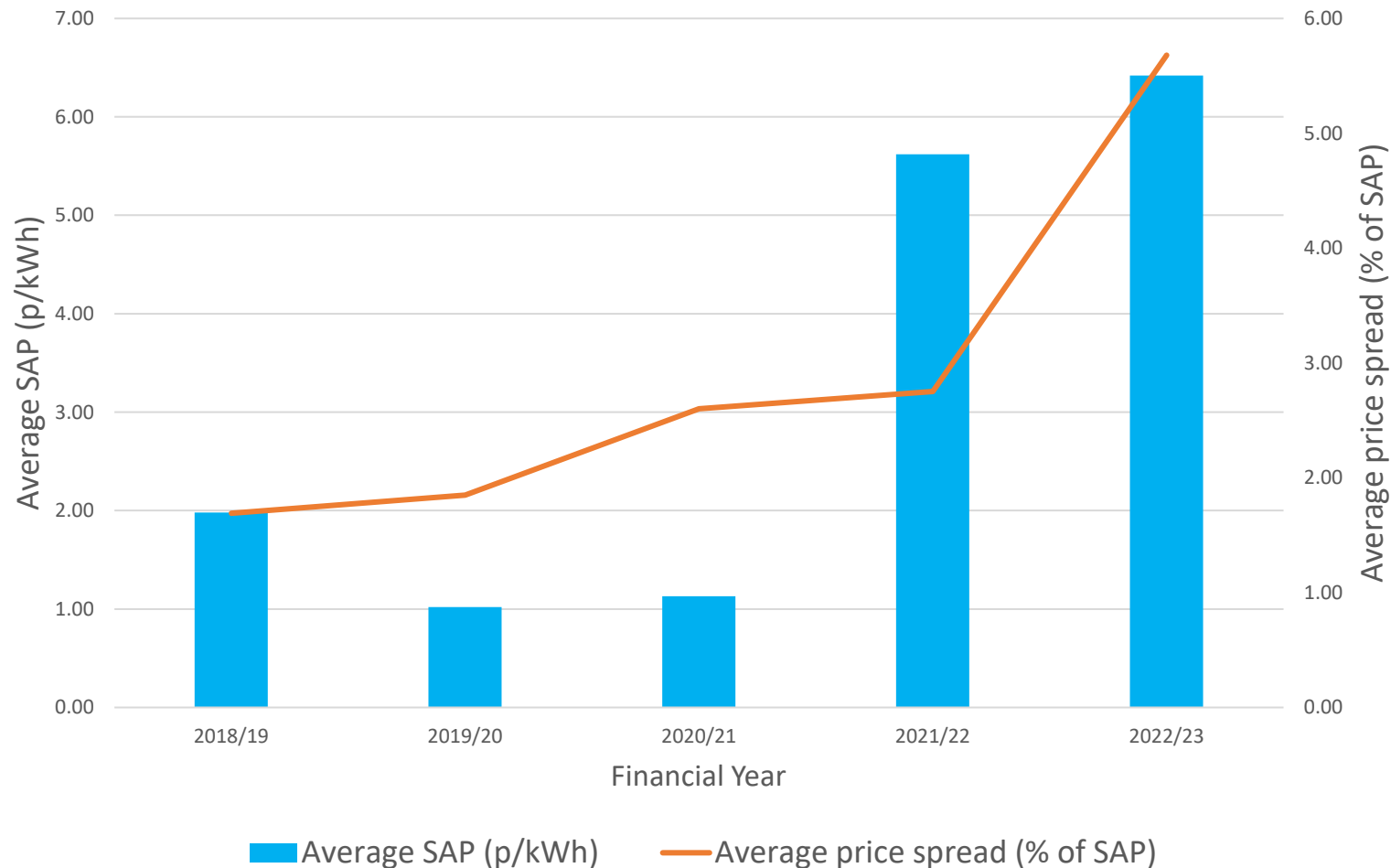
Each bar shows the percentage of days in a month that GNCC entered the market.



## 2022/23

- LPM was below 2.8 mcm/d on 225 days during the year (slight decrease in comparison to previous year)
- Our trades were at a record volume (702mcm) and we have exceeded the number of trades (3878) executed in previous years

# Average SAP v balancing price spread



## 2022/23

- Increased market volatility led to greater average price spread in trades executed
- On the days when we took actions, the average price spread was 5.3%, compared with 2.7% in 2021/22.
- Trading within the 1.5% incentive benchmark versus SAP was not always a realistic option under prevailing market conditions in order to achieve the desired market reaction.

**Ensuring we Operate Safely, Efficiently and Economically**

# Current RIIO-T2 Incentive arrangements

The incentives are designed to minimise the overall cost of system operation leading to benefit for consumers, they are also designed to influence our behaviour to minimise the impact on the market, to consider environmental impacts and to support the efficient operation of the wholesale gas market.

## Capacity Constraint Management

- Maximise release of capacity (above our obligations).
- Minimise the costs of constraints.
- A net cost target of £8.5m for entry and exit operational constraint management, subject to sharing factors.

### Value to the customer

- Costs of commercial constraint management actions to the Industry are mitigated or minimised and balanced against NTS investment whilst maximising capacity release of the NTS.

## Demand Forecasting D-1

- Accuracy of our forecasts for the day ahead demand.
- Fixed target of 8.35mcm + up to 1mcm storage adjuster.
- Max reward if Avg Daily error <4.5mcm.
- Max penalty if Avg Daily error >12.2mcm.

### Value to the customer

- Access to accurate demand forecast means that Shippers have relevant market information to make efficient commercial decisions. Any potential savings potentially benefit end consumers.

## Residual Balancing

- Daily scheme to balance supply and demand on the gas day.
- Price element (PPM) – minimise impact on market. Breakeven of 1.5% SAP.
- Linepack element – Closing line pack near to opening (2.8mcm/d) + shoulder month adjuster.

### Value to the customer

- Efficient use of network to minimise impact on the market.
- Costs related to daily imbalances are attributed to Shippers responsible for them on the day.



# Current RIIO-T2 Incentive arrangements

## Greenhouse Gas Emissions

- Minimise the GHG that enters the atmosphere and consider the environmental impact of our compressor operations when venting.
- Target of 2897 tonnes.
- For every tonne away from target we pay/receive under the incentive (£2,104 last year).

### Value to the customer

- Improved local air quality.
- Ensuring compressor standby time is optimised against cost of venting or costs associated with ancillary electrical equipment.

## Maintenance

- Minimise changes to customer affecting maintenance.
- 3 elements:-
- Minimise NGT initiated changes (7.25% benchmark).
- Use of days (Valve ops) - 11-day target.
- Use of days (ex valve ops) - align 75%.

### Value to the customer

- Summer 22 Maintenance Plan provided ~£15m of customer revenue opportunity, driven by alignment of maintenance outage periods

## Other Incentives (Reputational)

- Operating Margins.
- Shrinkage & Emissions.
- Demand Forecasting, D-2 to D-5.
- Data Publication.
- UAG (Unaccounted for Gas).

### Value to the customer

- Managing short-term impacts of operational stresses (e.g. supply loss) where the market needs more time to respond.
- Managing the price risk in energy procurement costs that pass through to user charges.

# RIO-T3 Regulatory incentive arrangements

As a part of our RIO-T3 business planning process we will be reviewing the current incentive arrangements. We would like to ensure that our incentives continue holding value to our customers and gain feedback on what additional incentives our customers would value in the next price control period.

# Quick Poll



Do the current incentive schemes drive valuable outcomes to your business or to your interests?

Are there any areas of system operation where outputs could be improved to deliver additional value for you?

The background consists of a dense pattern of overlapping circles. The circles are filled with a gradient that transitions from a dark blue on the left to a bright green on the right. Each circle has a subtle, concentric line pattern, giving it a textured, metallic appearance.

# Q&A

[Slido.com](https://www.slido.com)

[#NGT5](https://twitter.com/NGT5)

# Quick Poll – Results



Do the current incentive schemes drive valuable outcomes to your business or to your interests?

Are there any areas of system operation where outputs could be improved to deliver additional value for you?



# What next?



You will receive the recording and materials from today's session



If you have any further questions or would like to discuss anything specific please get in touch:  
[engage@nationalgas.com](mailto:engage@nationalgas.com)



Feedback is important to us, therefore if you have not already taken part, we would like to put you forward for a survey



# Further Webinars

Event Name		Date/Time	Hosts
Keynote Speech	Catch Up	28th June   10:00	Martin Cook, Jake Tudge
Commercial Frameworks	Catch Up	29 <sup>th</sup> June   13:30	Ian Radley, Josh Bates
Future of Gas	Catch Up	03 <sup>rd</sup> July   10:00	Danielle Stewart, Emily Ly
Regulation	Catch Up	05th July   10:30	Martin Cook, Steve Rowe
Operating the Network	Current	06 <sup>th</sup> July   10:00	Ian Radley & Craig James



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# Keep up to date



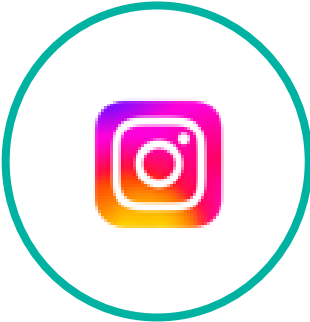
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**Thank you**



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