



Gas Operational Forum

Clermont Hotel & MS Teams

25 January 2024

Will start at 10:02am



Introduction & Agenda

Nicola Lond

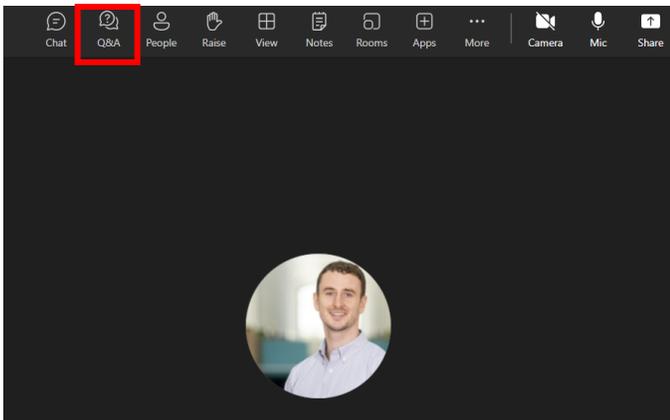
Operational Liaison & Business Delivery Manager

Housekeeping for Forum

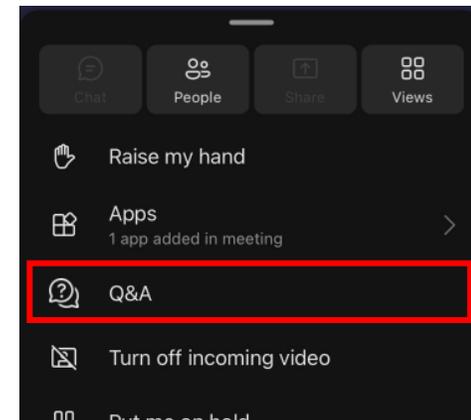
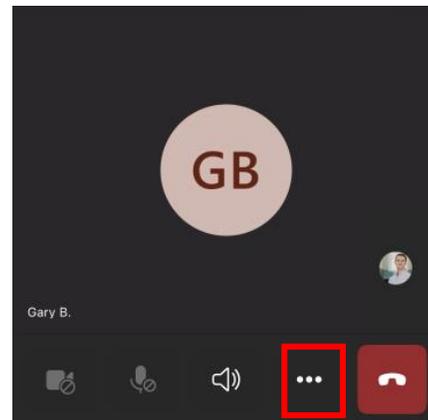
- For Microsoft Teams participants;
- Attendees will be automatically muted on dial-in and cameras will be unavailable.
- We have included some time to answer questions following the presentations.
- You can ask questions via Teams – Q&A



Laptop



Mobile



Agenda for Today – Future Focus

Welcome and Introduction	Nicola Lond – Operational Liaison & Business Delivery Manager	10:02
Operational Updates	Ffion Davies-Cale - Head of Operational Delivery	10:05
Project Union	Derek Radburn – Senior Hydrogen Development Engineer	10:25
Future Grid	Lloyd Mitchell – HyNTS Deblending manager	10:45
Blending Commercial Framework	Megan Bray – Senior Market Development Lead	11:05
RIIO-GT3 Incentives	Jonathan Dutton – T3 Team Lead	11:30
RIIO-GT3 Engagement Strategy	James Ganendra – Senior Customer Manager & Jenna Chowdhury & Charlotte Ward - C&S Team	11:50
General Updates	Nicola Lond – Operational Liaison & Business Delivery Manager	12:20
Close	Nicola Lond – Operational Liaison & Business Delivery Manager	12:30

Please ask any questions using **Teams**

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

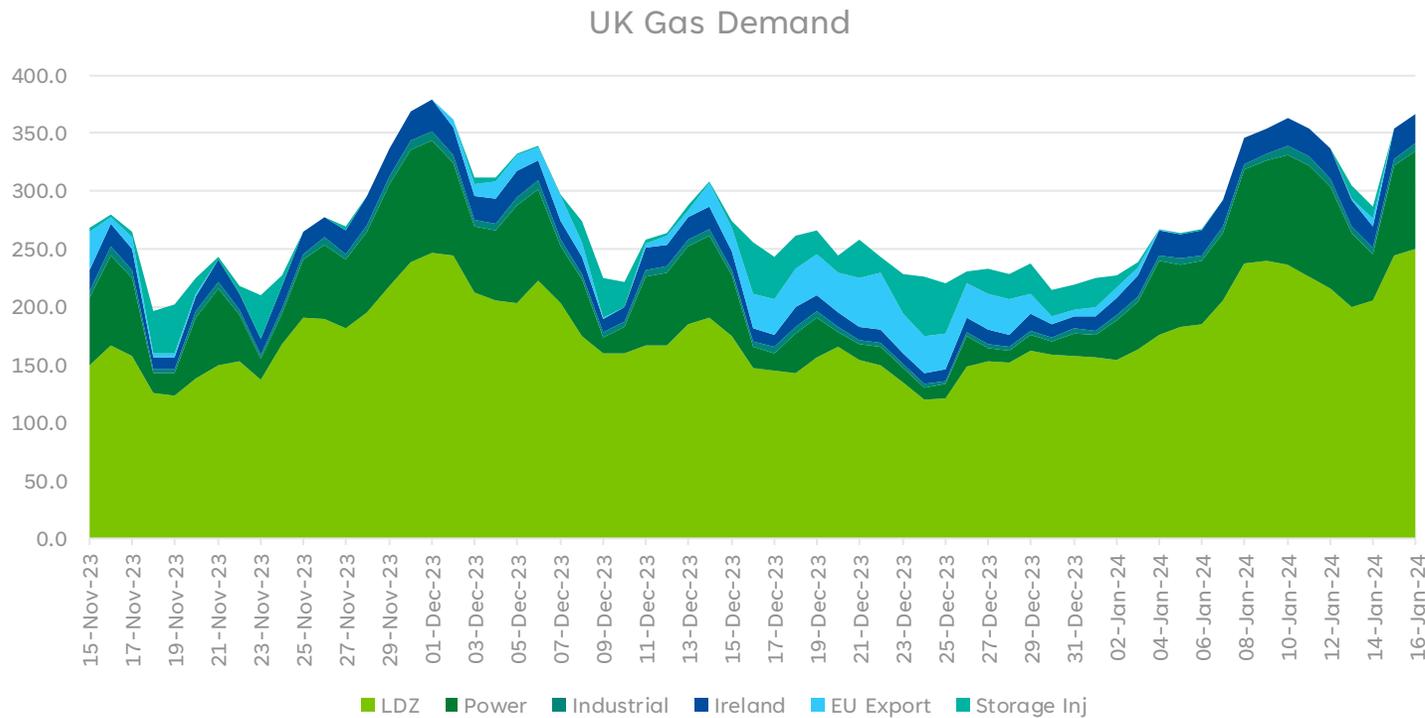
Operational Updates

Ffion Davies-Cale

Head of Operational Delivery



NTS Demands



The weather over the past month has been quite varied, with significant flooding and mild weather over and post Christmas, followed by a cold period over the last 2 weeks.

Storage behaviour has been what is expected – withdrawing during high demands and injecting when the weather is milder.

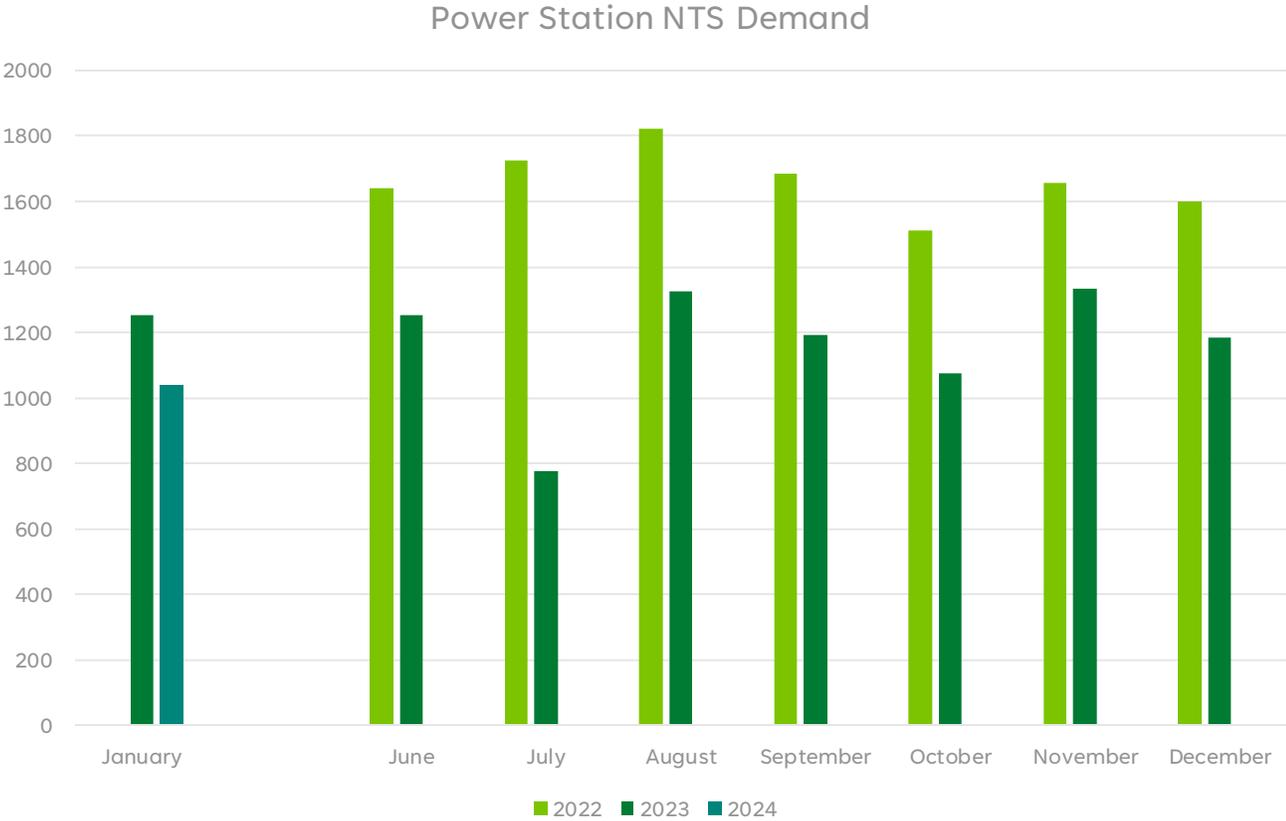
Gas for power has continued to vary a lot over the past month, highlighting the need for a quick response for when renewable production isn't available.

Winter So Far - Demand

Highest demand day of 2023/24 winter so far: 387mcm/d



Power Station NTS Demand (to 16th January)



Gas for power has continued to vary a lot over the past month, highlighting the need for a quick response for when renewable production isn't available.

There has been quite a significant amount of gas demand for Power so far in January, with ~1000mcm total gas usage for the first half of the month.

UK and EU storage



Storage & LNG

INTERNAL CONFIDENTIAL

Total LNG Stock and Percent Full
Snapshot as of: 23 January 2024

694 mcm
54% full

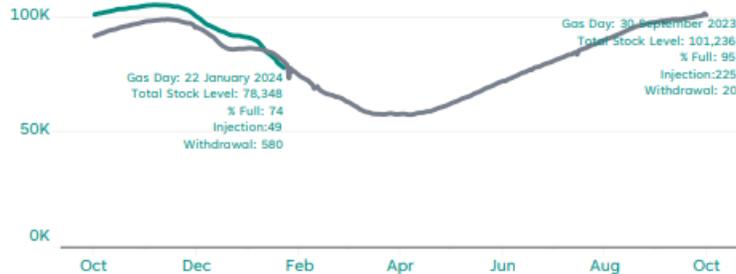
Total GB Storage Stock and Percent Full
Snapshot as of: 23 January 2024

1,818 mcm
55% full

(LRS 52%)

(MRS 57%)

EU storage stock (mcm)

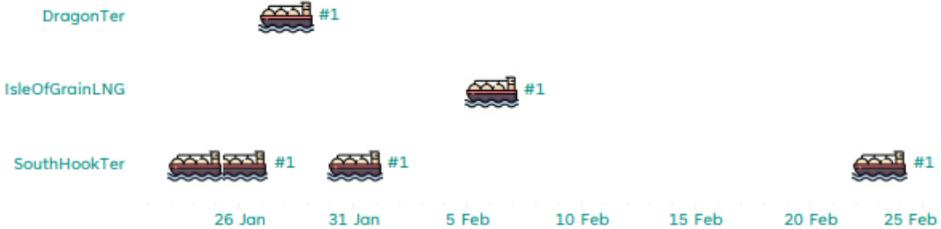


LNG & Storage stock (mcm)



LNG Arrivals

number of boats

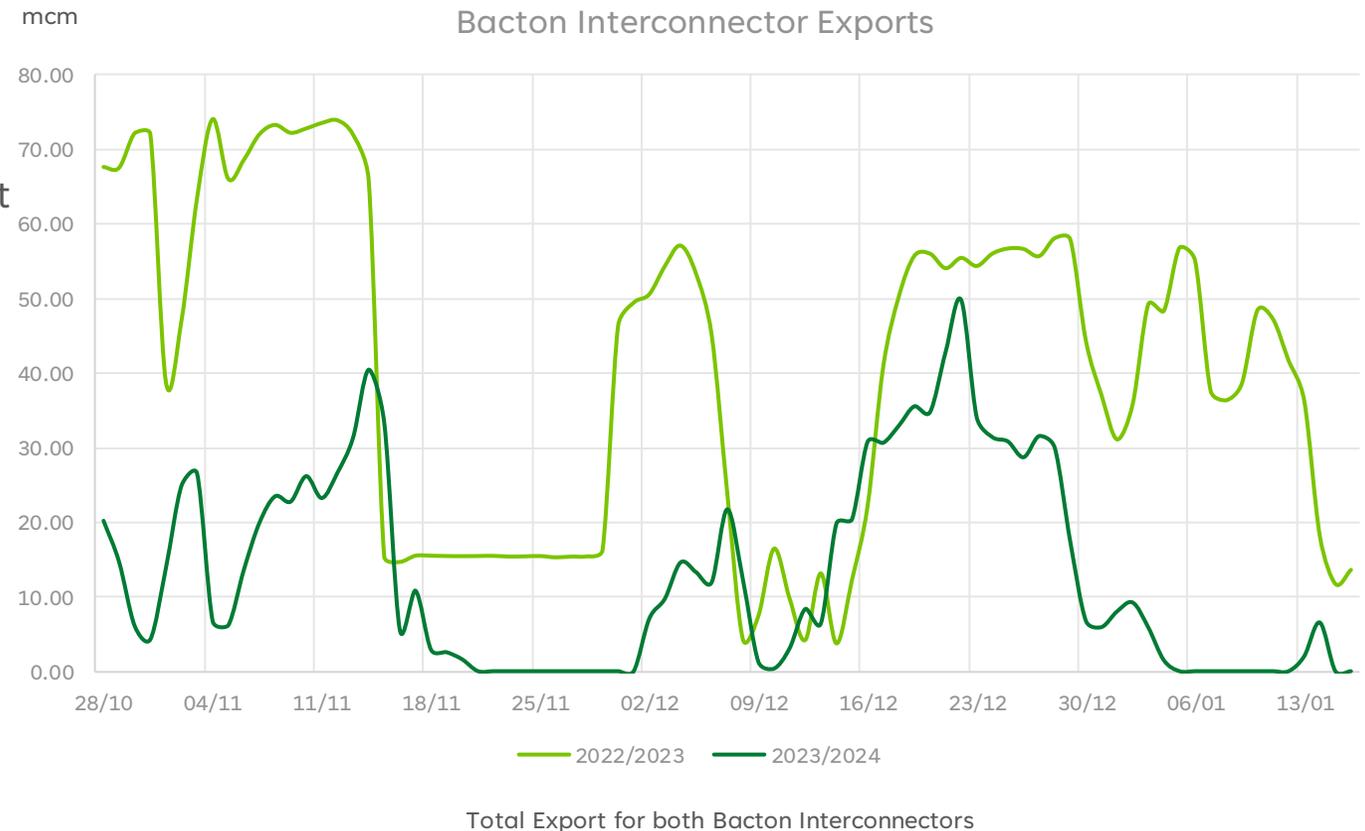


European Exports

European Exports are a proportion of what they were last year and have been quite mixed across the winter.

The amount of gas exported to Europe has varied with the level of NTS connected demand; for example, when weather has been colder and LDZ and Power Station demand higher, there has been less exports to Europe.

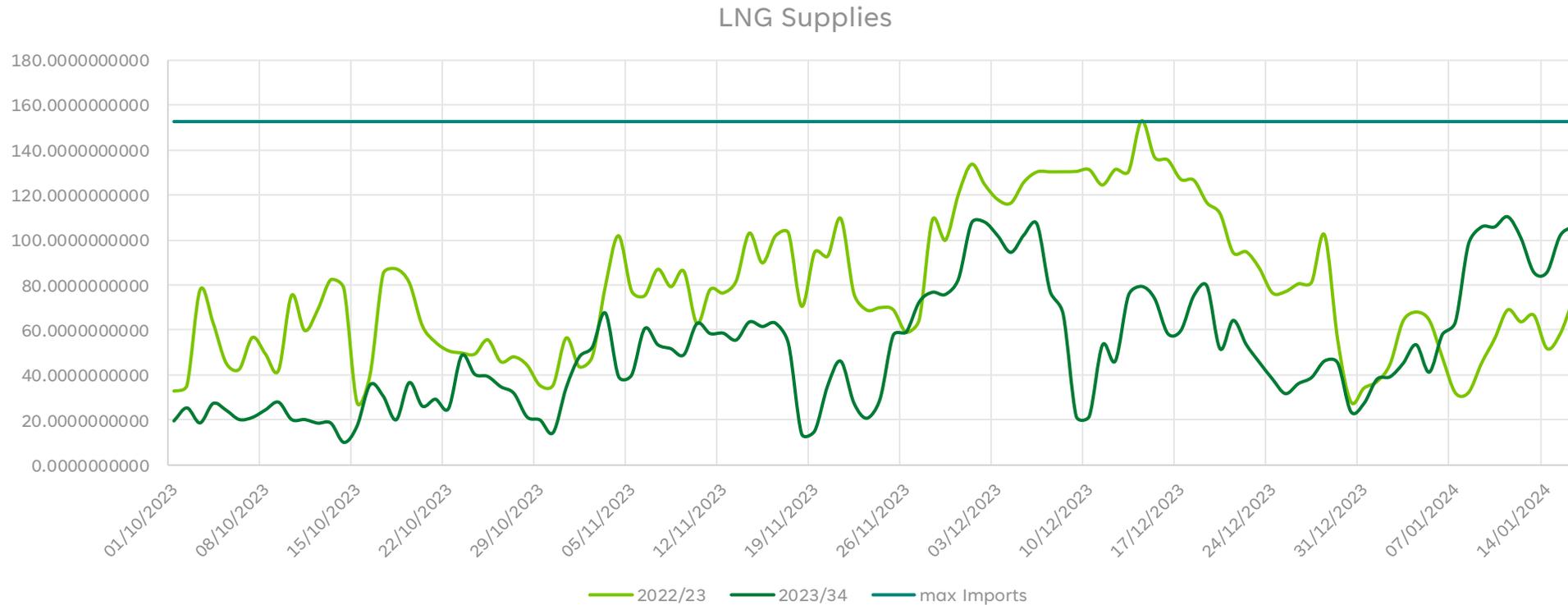
As we have seen the milder weather the past couple of days, exports have increased a bit.



LNG Imports

LNG supplies have continued to act as a flexible supply throughout the winter, increasing during colder demands.

There has been no significant impact on LNG deliveries to the UK due to the issues in the Red Sea – LNG market is switching between East and West to avoid going through Red Sea and Suez Canal



Interesting Days

Summary of the 1st – 4th December

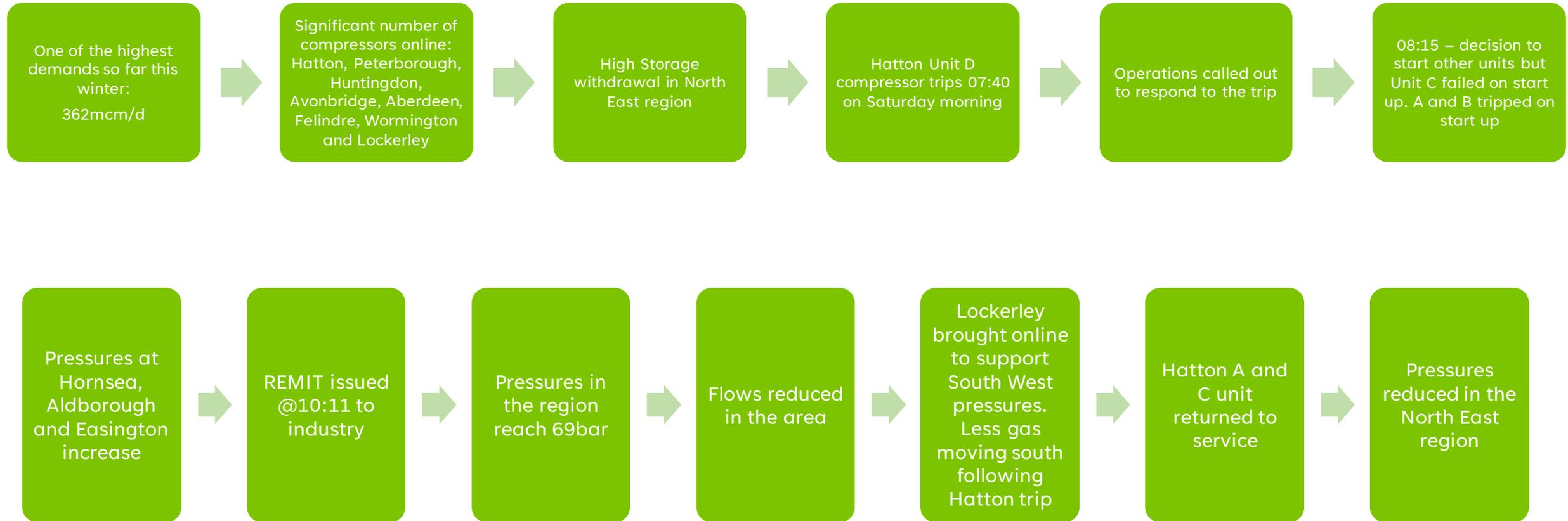
Overview

Over the weekend of the 1st - 4th of December we saw one of the highest demand days this winter. This unfortunately coincided with a few compressors becoming unavailable on the network.

Today's focus

- What happened
- Issues that arose
- National Gas response

Timeline of Events – Gas Day 2nd December



Hatton Running



Response From Ops

Ops team responded incredibly well – 6 members of the team arrived at Hatton to work on returning the units



Made available and brought online 2 units at Hatton within 3 hours



Additional units also made available but not required to run



Solution to initial compressor trip was identified but not implemented at the time to ensure minimal disruption to customers

Project Union

Derek Radburn
Senior Hydrogen Development Engineer

Why Hydrogen?



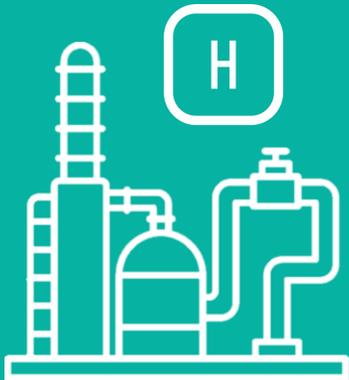
Hydrogen is a clean and abundant alternative to methane (known as natural gas)



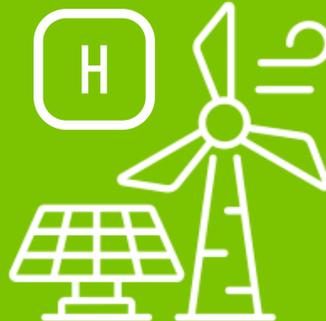
Hydrogen is a future clean energy source only releasing water vapour when it is burned



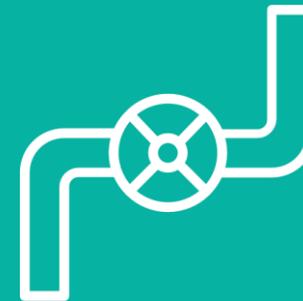
Hydrogen is already used as a fuel for transport and is being trialled internationally



Blue Hydrogen is produced from non-renewable sources using Steam Methane Reformation and Autothermal Reforming



Green Hydrogen is produced using electrolysis to produce hydrogen from renewable electricity



Challenge to economically produce hydrogen at scale, and adapt the existing infrastructure for hydrogen

Project Union

Project Union will connect, enable net zero and empower a UK hydrogen economy, repurposing existing transmission pipelines to create a hydrogen ‘backbone’ for the UK by the early 2030s.



Repurpose ~2,000km of the NTS through a phased approach in line with Government’s cluster prioritisation and green hydrogen development



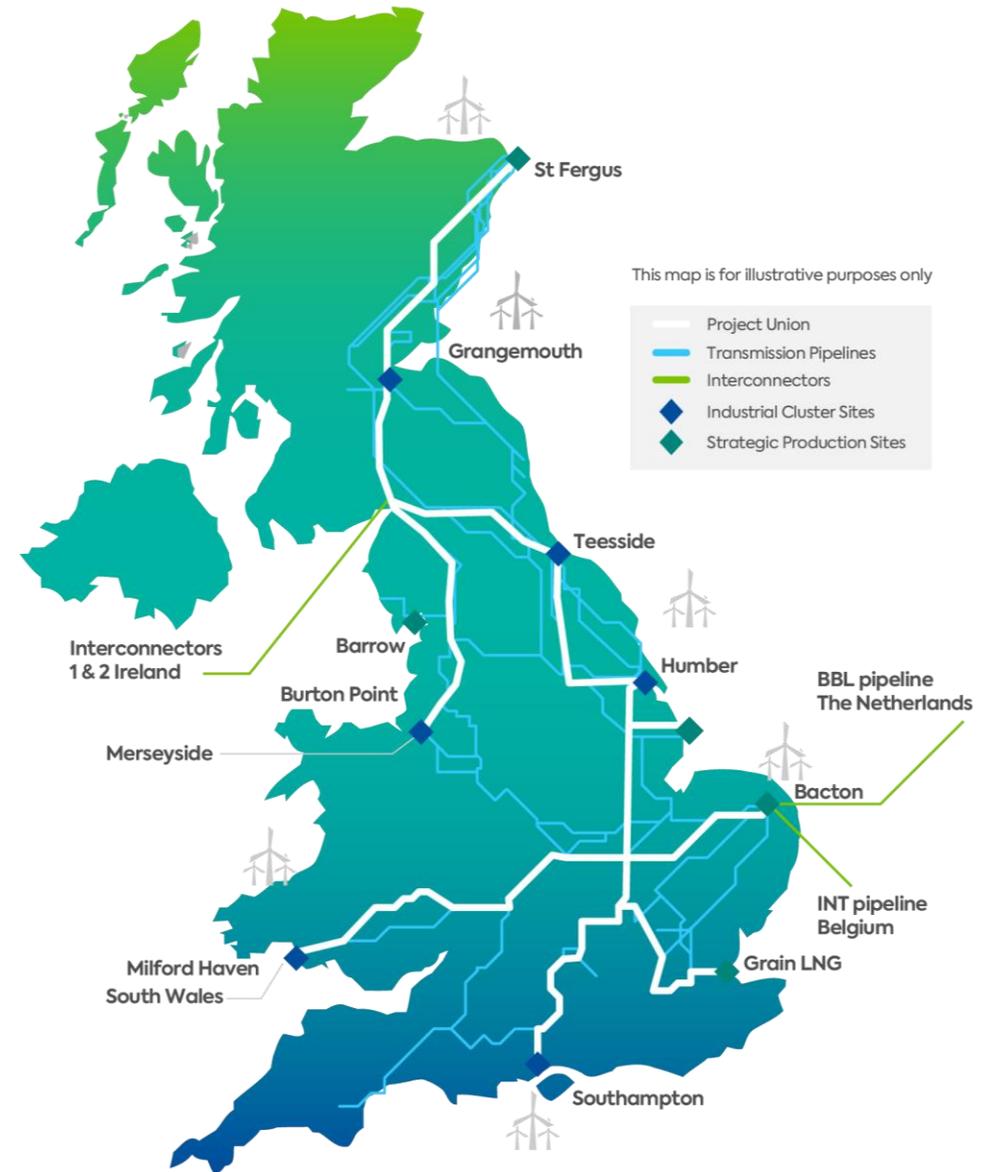
Connect cross GB production, demand, strategic storage sites and interconnectors enabling growth of the UK and European hydrogen economy



Use existing infrastructure to deliver a low carbon future, reducing environmental impact of new construction



Enable early and affordable market growth of a low carbon hydrogen economy to achieve net zero



ProjectUnion: the benefits

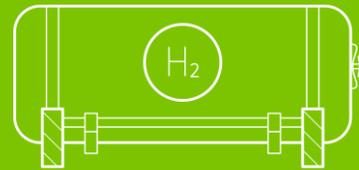
Project Union will contribute to Energy Security.

Enabling transport of, and fair access to, indigenous supplies around the UK and opens up export opportunities by connecting to the European Hydrogen Backbone.



Decarbonisation of industry & power

Fair access to green and blue hydrogen enabling businesses to decarbonise. Access to transmission enables green hydrogen production to scale.



Energy storage and resilience

System resilience to move and store sufficient volumes across the country



Connectivity and efficiency

Connect production and storage with demand, enabling system efficiency through shared infrastructure



Market coupling

Connect isolated production sites enabling competition, reducing costs and improving security of supply



Levelling up and job creation

Potential for >100,000 jobs by 2050, and contribution of £13billion to GVA



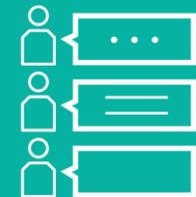
Global leader in green innovation

Attract global investors by getting best value from national infrastructure and enabling rapid scale up



Flexibility and optionality

Flexibility in power generation, storage and consumption. Optionality in future hydrogen decisions whilst maintaining gas networks' delivery.



Consumer-centric

Innovative, cost-effective consumer focused energy solutions, e.g., the pilot hydrogen town brings scalability & phasing.

ProjectUnion: Feasibility Phase key deliverables

Over a 12-month period commencing early 2023, the programme will deliver the following outputs:

	Outputs
<p>Phasing Strategy and Priority for each section of the hydrogen backbone. This will be determined through engagement with existing and emerging stakeholders across production, storage and demand sectors, network modelling, alignment with policy objectives and by evaluation of greatest value to the consumer.</p>	<ul style="list-style-type: none">▪ Phasing strategy – order and timing▪ Real Options Analysis (ROA) identifying key decision points▪ Supply and Demand Scenarios
<p>Pre-Front End Engineering and Design (pre-FEED) activities, examining the viability of repurposing existing methane infrastructure assets and options to provide a complete hydrogen backbone connecting strategic supply locations.</p>	<ul style="list-style-type: none">▪ Planning and consenting strategy▪ Appraised set of routing options▪ Asset data collection requirements▪ Constructability assessment▪ Cost Estimates
<p>Hydrogen market enabling activities, including development of options for the design of regulatory and commercial frameworks for hydrogen infrastructure and ongoing customer and stakeholder engagement.</p>	<ul style="list-style-type: none">▪ Evidence gathering for policy decisions▪ Regulatory and market framework options▪ Supply chain review▪ Engineering policy review

ProjectUnion: preFEED key technical activities

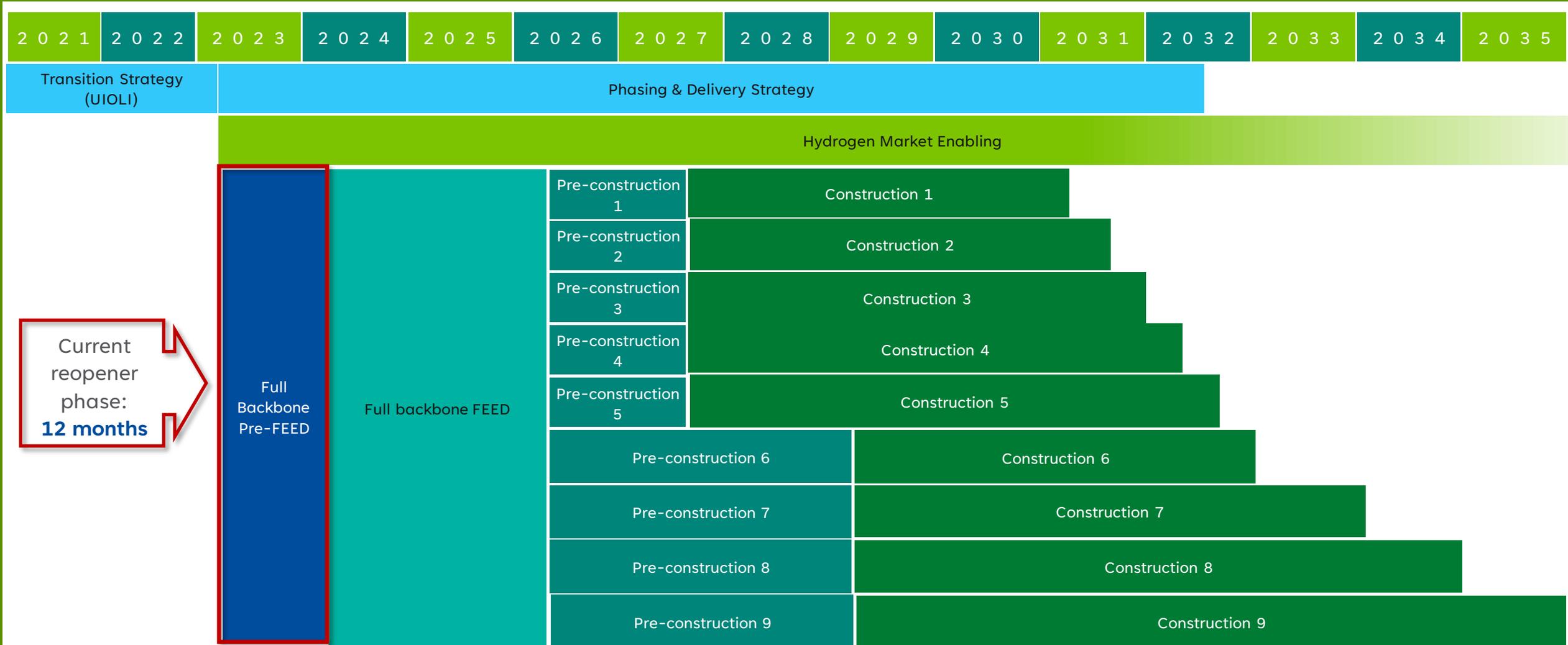
- Methane feeder repurposing
 - Network analysis of methane capability network to identify any feeders can be released from the network for repurposing
 - Production of a Decision Support Tool (DST) to analyse asset data and prioritise which available feeders have the best potential to be repurposed to transport Hydrogen
- Hydrogen backbone design
 - Creation of minimum viable network for a new build Hydrogen network that links critical network anchor points (industrial clusters, storage, interconnectors) to demand centres
 - Refining routing and inclusion of spurs to incorporate as many emerging hydrogen production/demand customers as possible
 - Overlaying feeders with potential to be repurposed onto the backbone design to understand which repurposed sections could avoid new build to support a more timely and cost effective solution
 - Environmental appraisal of routing options and development of consenting strategy
 - Hydrogen flow assurance to confirm backbone will provide sufficient capacity

ProjectUnion: preFEED key technical activities

- Deliverability
 - Cost estimation
 - Constructability assessments
- FEED Stage
 - Development of FEED scope and FEED costs to enable the further development of shortlisted options
 - Understanding on data requirements and a plan for which data needs extracting from NG archives, and which information we need to physically collect to build the evidence base for repurposing
- Justification for progression
 - Production of needs cases and Strategic Options Reports for each section and the backbone as a whole to support funding requests to enable the progression of the project to the next stage

ProjectUnion: high level plan

Delivery is staggered based on current assumptions, this will be updated once phasing strategy is developed.



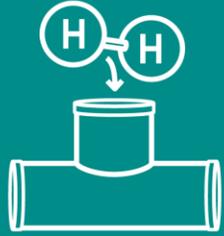
Current reopener phase: **12 months**

Future Grid

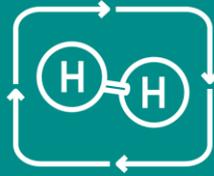
Phase 1 update & Phase 2 overview

Lloyd Mitchell
HuNTS Deblending Manager

A high-pressure hydrogen test facility using decommissioned transmission assets, to demonstrate the National Transmission System (NTS) can transport hydrogen safely and reliably.



Standalone hydrogen Tests
Standalone hydrogen test modules are operating alongside the main test facility, to provide key data required to feed into the main facility.



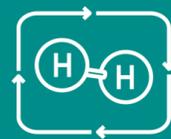
Offline hydrogen test facility
A representative range of NTS assets of different types, sizes, and material grades have been supplied from decommissioned assets to build the test facility.

Four key hydrogen concentrations are being tested:



FutureGrid

Phase 1 Facility



Offline hydrogen test facility

Testing Progress

Each hydrogen concentration is being tested in the facility for 4 weeks, operating at seven different flow rates in order to generate conditions seen on the NTS. The outputs from the testing will form a key part of National Gas' safety case for safely transporting hydrogen in the existing network.



Facility Commissioning

100% Natural Gas Testing

2% Hydrogen Testing

5% Hydrogen Testing

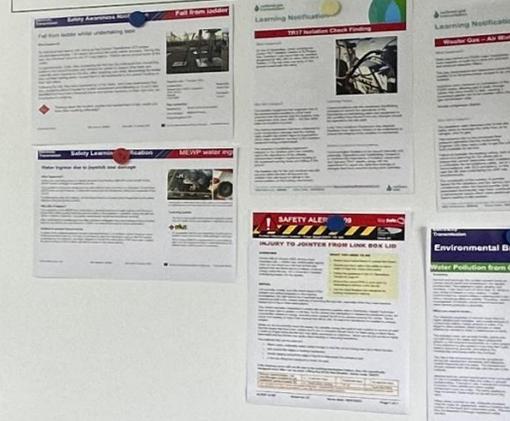
20% Hydrogen Testing

100% Hydrogen Testing

FutureGrid Testing Outputs

FutureGrid Control Centre

FutureGrid Safety bulletin



2%

hydrogen in natural gas

The first hydrogen blend that will flow through the FutureGrid facility will be 2% mixed with 98% natural gas. This is due to the market foreseeing the introduction of smaller scale blends while production begins to scale up. This creates demand for hydrogen produced and enables changes to Gas Safety (Management) Regulations, known as GS(M)R, to be made which allows blending on the NTS.

Offline test facility key stats

-  Facility constructed from 18 inch X60 pipeline
-  Range of representative NTS assets included
-  Seven different flow rates: 3 low and 4 high flow
-  Each test is conducted for 4 weeks in total



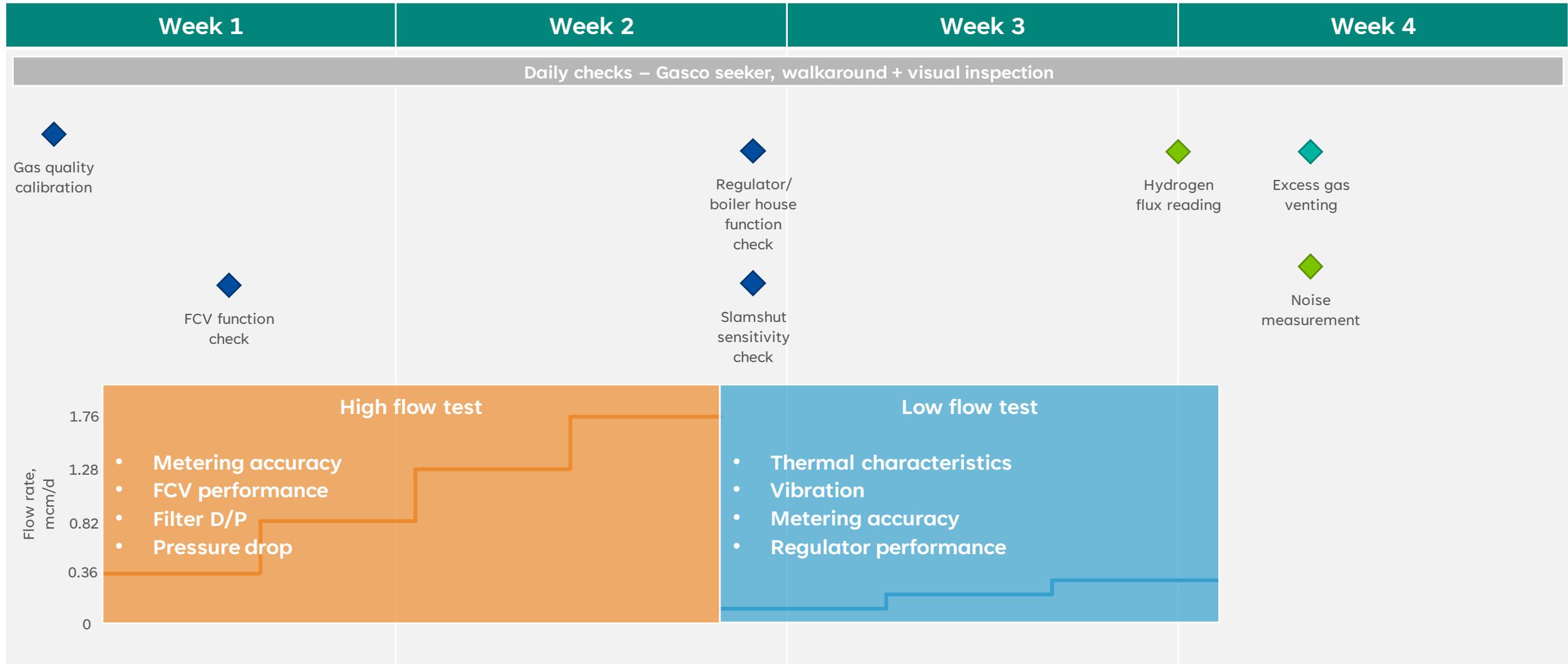
FutureGrid@nationalgas.com



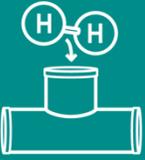
nationalgas.com/FutureGrid



national gas



FutureGrid



Standalone hydrogen Tests

Standalone hydrogen test modules will operate alongside the main test facility, to provide key data required to feed into the main facility.



Material permeation testing

These tests are seeking to determine the rate at which hydrogen permeates through the pipe wall in a pressurised hydrogen environment.



Pipe coating and CP testing

This is the assessment of hydrogen impact on external pipe coatings as well as the cathodic protection system to identify any issues.



Flange testing

These tests will assess the effect of hydrogen on RF and RTJ flanged joints.



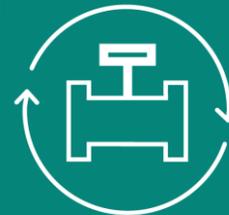
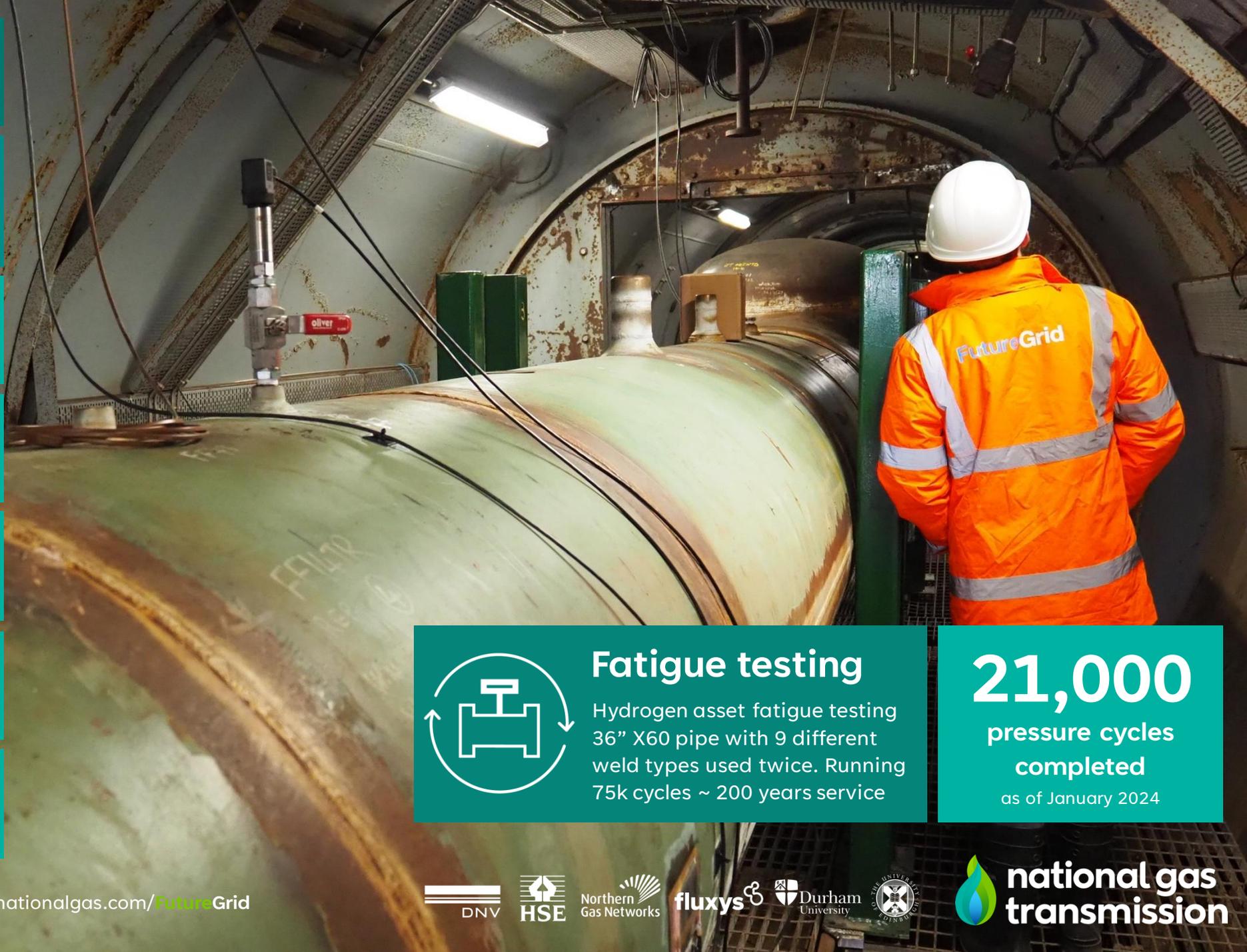
Asset leak testing

Hydrogen is more prone to leaking than natural gas. These tests will help determine the leakage rates and mitigations required.



Rupture testing

Investigating overpressures caused by delayed ignition of ruptures on a buried line containing 100% hydrogen.



Fatigue testing

Hydrogen asset fatigue testing 36" X60 pipe with 9 different weld types used twice. Running 75k cycles ~ 200 years service

21,000

pressure cycles
completed

as of January 2024

FutureGrid safety & risk management

There is a fundamental difference between how natural gas and hydrogen behaves. We must be able to understand the impacts of different concentrations of hydrogen and develop our safety standards



Procedure Review

Categorisation of NG procedures as high, medium, low impact with a report detailing the methodology findings and next steps for each.



Hazard Assessment of the Transmission System (HATS)

Assess impact of hydrogen on MAPD. Provide an updated HATS for the NTS pipelines, based on the network transporting hydrogen instead of Natural Gas.



Quantitative Risk Assessment (QRA)

Record and update the Hazard Assessment Methodology Manual (HAMM) where deviations are required for assets transporting Hydrogen.



Hazardous Area Impact

Hazardous Area Drawings will be produced for each asset type at 20% & 100% hydrogen and compared to existing Natural Gas drawings. IGEM also working on SR/25 update for hydrogen.



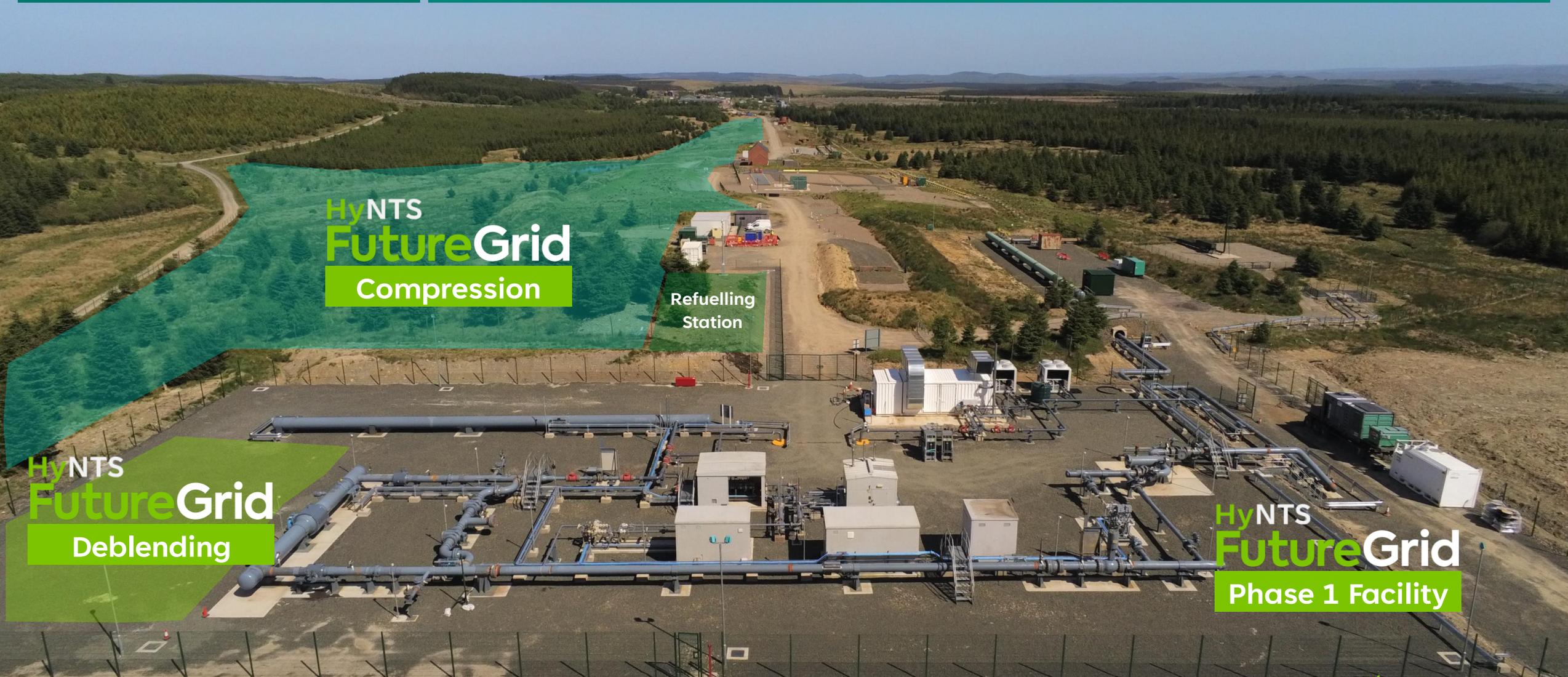
Overpressure Risk (OR)

Identify whether the existing methodology can be adapted for 100% hydrogen. If needed, develop an appropriate methodology for risk analysis and emergency planning purposes.



National Gas Transmission (NGT) Safety Case

Assess and update the NGGT safety case (policies, procedures and work instructions) depending on the impact of hydrogen. Review will involve SMEs.



HyNTS
FutureGrid
Compression

Refuelling
Station

HyNTS
FutureGrid
Deblending

HyNTS
FutureGrid
Phase 1 Facility



Lead



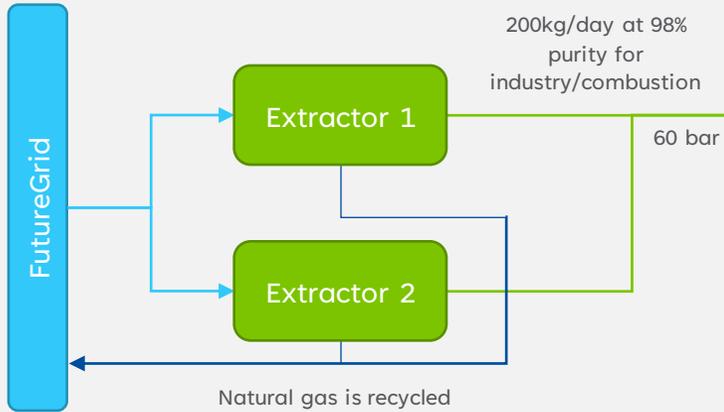
Project Partners



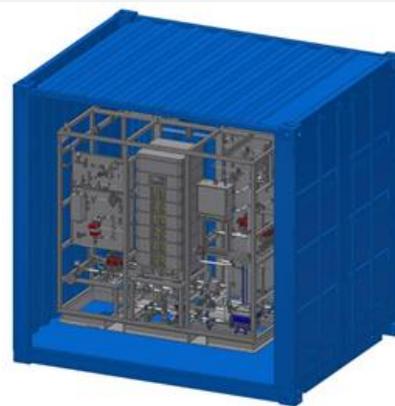
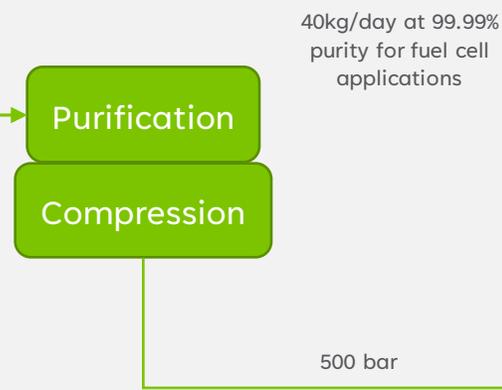
HyET Hydrogen Efficient purification & compression



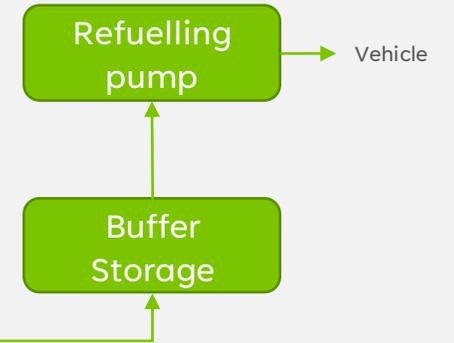
Entry & Bulk Separation



Purification & Compression

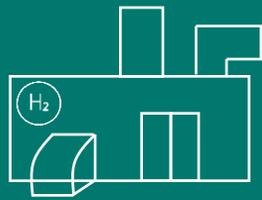


Refuelling Station



FutureGrid

Compression



FutureGrid Compression provides a technical demonstration of hydrogen compression up to 100% hydrogen and will create a strategy for the transition of the UK NTS compression fleet to hydrogen.



FutureGrid@nationalgas.com



nationalgas.com/FutureGrid



SIEMENS
ENERGY



Northern
Gas Networks



Blending

Commercial Framework

Megan Bray

Senior Market Development Lead



Strategic policy decision (14/12/23)

Government supportive of blending up to 20% hydrogen into distribution networks (decision whether to enable blending (change in GS(M)R) will be made once full safety case review and economical analysis is complete.

Government sees potential strategic role for blending, defined as being:

- Offtaker of last resort – managing risk of hydrogen producers unable to sell sufficient volumes
- Strategic enabler – in absence of initial T&S infrastructure, enabling electrolytic hydrogen producers to support the energy system

Clear limitations: “blending should only be a transitional option” and it “may only have a limited and temporary role in gas decarbonisation”

Government have advised that they plan to release information on when a decision for blending into the transmission system will be made, next year.

Hydrogen Blending into GB Gas Distribution Networks: Government Response to Consultation

Intended policy positions for the implementation of hydrogen blending into GB gas distribution networks

Strategic role

Primary role = support hydrogen production growth as:

- ‘Offtaker of last resort’. Manage risk where hydrogen demand is insufficient
- ‘Strategic enabler’. Enable electrolytic H₂ producers to support energy system where T&S infrastructure is delayed.

Commercial support

Subsidy to be awarded through Hydrogen Production Business Model

- Eligibility criteria must be consistent with strategic role
- Blending will qualify as offtaker under HPBM after decision to enable is made.

Trading Arrangements

Arrangements will remain the same as natural gas:

- Shipper can purchase for onward sale to end users
- GDN’s can purchase for shrinkage

Hydrogen Blending into GB Gas Distribution Networks: Government Response to Consultation

Intended policy positions for the implementation of hydrogen blending into GB gas distribution networks

Low Carbon Hydrogen Certification Scheme

Reconsidering initial proposal to preclude the onward sale of certificates for blending:

- Mass balance preferred approach for LCHCS, however blended H2 cannot be traced to end user. Therefore final position will be reviewed prior to launch of certification scheme.
- Not eligible for UK Emissions Trading Scheme (double counting)

National Gas Transmission |

Technical delivery model

Blending will be delivered through a 'free market' approach.

- Further work required to decide how blend capacity will be allocated.
- sufficient degree of strategic planning for allocation may be necessary.

Billing Arrangements

Work within existing arrangements

- This may cap areas of the network to ~5%
- FBM recommendations are being explored through Real Time Settlement Methodology, for future consideration.

EU Policy

Rules applicable within the EU

- The **Article 19 Regulation**, related to cross-border coordination of gas quality in the natural gas system, **limits the blended hydrogen content to 2%** within the natural gas system for cross-border flows at IPs between MS.
- Up to this threshold, Member States will be able to launch a **conciliation mechanism** regarding the gas quality and restriction to flows.
- The Article 53 Regulation allows the Commission to establish a network codes on interoperability rules on managing cross-border restrictions due to differences in the volume of hydrogen blended in the natural gas system

Flexibility for EU-UK interco ?

- **Article 52 Regulation** indicates that NC and guidelines apply to entry points from and exit points to third countries from 24 months from the date of entry into force of this Regulation.
- **Article 79 Directive** states that EU TSO and third countries TSO are free to conclude technical agreement on issues concerning the operation of interconnectors pipelines, insofar as those agreements are compatible with Union law and relevant decisions of the regulatory authorities of the Member States concerned.
- Article 82 Directive outlines the procedure to follow in order to amend, extend, adapt, renew or conclude an agreement on the operation of a transmission line with a third country



Still waiting for clarification as to whether interconnectors from/to third countries will be allowed to accommodate higher blending thresholds and the process for interconnector agreements.

Hydrogen Blending Commercial Framework

- workstreams and next steps

UNC 0849R [Commercial Framework Review to Enable Hydrogen Blending](#)

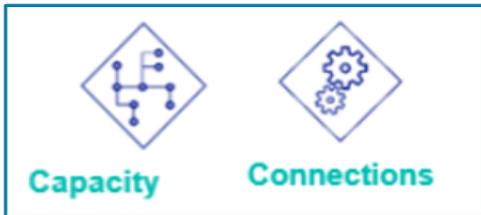
Review Groups running from June 23 – February 24



Interim Report due at February panel including agreed recommended areas where amendments will be necessary and identified areas where blending delivery model requires further consideration and approval before final legislative changes can be agreed.

Blending Steer Group (ENA) – developing blending implementation roadmap including next phase of work with objective of finalising blending delivery model.

Following a commercial framework review the following areas have been identified where changes will likely be required:



A decision is required on the appropriate mechanisms for granting connections to the network to hydrogen producers and allocating hydrogen capacity.



There may be a need for additional charges for transportation and management of hydrogen-blended gas flows.



Bespoke processes for nominating hydrogen or hydrogen-blended gas may be required to minimise the risk of curtailments as a result of hydrogen being present in prevailing upstream gas-flows, and alternative arrangements or exemptions from imbalance charging for hydrogen shippers to reduce risk exposure arising from 'no fault curtailments'.



Changes will likely to be required to system entry conditions which determine the characteristics of gas permitted to enter the network and also requirements for measurement equipment for monitoring this at system entry points and NTS-LDZ offtakes.



Additional system operational checks and balances, such as increased monitoring of hydrogen content within the network. There may be a case for additional provisions to facilitate enhanced flows of information between system participants, notably the NTS operator and DNOs to give visibility of hydrogen flows entering the LDZs at system offtakes.

However, there still remains a significant degree of uncertainty around the physical implementation of blending and a final delivery model. Therefore the next phase of work will focus on reviewing and concluding on these outstanding areas of uncertainty with the support of industry and Ofgem/ DESNZ before final legislative changes are agreed.

Develop and agree final blending delivery model



Conclude final legislative changes and complete legal drafting



Begin Formal UNC and Licence change process

RIIO-GT3 Incentives

Jonathan Dutton
T3 Team Lead

Background – RIIO-GT3 Framework

Ahead of each regulatory period, we submit a detailed Business Plan to Ofgem

Revenues

Constraint on revenue set up front to ensure:

- Timely and efficient delivery
- Network companies remain financeable
- Transparency and predictability
- Balance costs paid by current and future consumers

Incentives

Deliver outputs efficiently over time with:

- Five year control periods
- Rewards and penalties for output delivery performance
- Symmetric upfront efficiency incentive rate for all costs
- Use uncertainty mechanisms where add value for consumers

Innovation

Technical and commercial innovation encouraged through:

- Core incentives in price control package
- Option of giving responsibility for delivery to third parties
- Innovation stimulus gives support and 'prizes' for innovation, building on Low Carbon Networks Fund (LCN) fund

Outputs

- Outputs set out in licence
- Consumers know what they are paying for
- Incentives on network companies to deliver
- Outputs reflect enhanced engagement with stakeholders



How we're regulated

As the owner of the National Gas Transmission network in Great Britain, we're classed as a 'natural monopoly'. We're regulated by the energy regulator, Ofgem, which simulates the effects of competition by setting price controls – a ceiling on the amount we can earn from charges to use our network.

Why should our price control matter to you?



Context

- OFGEM published the Sector Specific Methodology Consultation on 13th December 2023, with a closing date of 6th March 2024
- The consultation covers the overall Methodology that will be applied on National Gas for the RII0-3 price control period
- Today we are focusing on the incentive aspects of the consultation
- The full consultation is available on OFGEM's website here:
<https://www.ofgem.gov.uk/publications/riio-3-sector-specific-methodology-gas-distribution-gas-transmission-and-electricity-transmission-sectors>

Financial Incentive Scheme Overview

Capacity Constraint Management	Demand Forecasting D-1	Residual Balancing	Greenhouse Gas Emissions	Maintenance	Customer Satisfaction	Environm'tal Scorecard
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 ~£2,104 last year. 	<ul style="list-style-type: none"> • 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%. 	<ul style="list-style-type: none"> • Maximise customer satisfaction of our business. • The financial reward is awarded on a sliding scale between the baseline of 7.8 and the cap of 8.5. • +/- 0.5% of our revenue. 	<ul style="list-style-type: none"> • Delivering environmental benefits for the communities, meeting the goal of net zero carbon emissions by 2050. • 30 commitments over 5 business areas to reduce our impact on the environment. • +/- £0.22pa in year 1 and £0.38m pa in years 2-5.

General Incentive Principles

We believe our current incentive schemes drive the right behaviour and are designed to encourage National Gas Transmission to create value to the industry over and above our BAU activities where we

- minimise the overall cost of system operation,
- support the efficient operation of the wholesale gas market and,
- consider our environmental impacts

The operating environment, and our role in the industry, have changed significantly in the early part of GT2. The incentive parameters should reflect the greater volatility we expect to remain in the GT3 period, to ensure they deliver the right outcomes for consumers and stakeholders, and the right balance of risk and return for NGT.

We are requesting your support in responding to the consultation as this will help design our allowances and incentive schemes from 2026 through to 2031.

Themes from Ofgem's Proposals

Ofgem proposal	Our position
The plan should be based on the Leading the Way scenario from FES, with Falling Short as a sensitivity	Disagree. We will base our submission on Falling Short as the prudent basis on which to plan the gas transmission network
Existing incentive schemes should be retained, and the parameters reviewed	Agree. Incentive parameters should be re-calibrated to reflect the 'new normal'.
Upsides should be reduced or removed, and downsides increased	Disagree. Reducing or removing the upside on incentives reduces our incentive to improve outputs and impacts our financeability
Consider the introduction of a financial scheme for NTS shrinkage costs	We support the introduction of a financial scheme for shrinkage if it focuses on those aspects under our control (i.e. when we trade)
Consider the introduction of financial schemes for UnAccounted for Gas(UAG) and CV Shrinkage (CVS)	Disagree. These volumes are driven by factors largely outside our control.

What happens next?

- The consultation is open until 6th March
- OFGEM are hosting a series of Working Group Meetings (see adjacent): *draft dates*.
- Please do get involved with the working groups if they are of interest to you and respond to the consultation to share your views
- If you have any questions or would like to discuss any of the incentive areas in more detail NGT can arrange discussions with individuals or specific groups to explore issues of concern in more detail. Please contact Jon.Dutton@nationalgas.com or Chris.Hewitt@nationalgas.com

Date	Working Group Topic
23 January 2024	GTWG3 - Cost modelling methodology & Business Plan Data Template (BPDT) development
26 January 2024	GTWG4 – Capacity Constraint Management (CCM) Deep Dive
5 February 2024	GTWG5 – National Transmission System (NTS) Shrinkage Deep Dive <i>Revised date</i>
13 February 2024	GTWG6 - Cost modelling methodology & BPDT development
14 February 2024	GTWG7 – Greenhouse Gas (GHG) Emissions and other environmental incentives
29 February 2024	GTWG8 - Residual Balancing, Maintenance, Demand Forecasting
14 March 2024	GTWG9 - Customer Satisfaction Survey

RIIO-GT3 Engagement Strategy

James Ganendra, Senior Customer Manager
Jenna Chowdhury & Charlotte Ward, C&S Team

The C&S team speaking today



James Ganendra
Senior Manager C&S



Jenna Chowdhury
Senior Customer Specialist



Charlotte Ward
Gas Specialist

C&S Engagement Strategy

RIIO-GT3

Summary of RIIO-3 C&S Responsibilities

RIIO-3 Submission

Strategic engagement

Where investment is subjective, work with Corporate Affairs, customers, UK Gov, DESNZ & Ofgem to lobby and build positions which are **winnable**

C&S Submission Content

C&S IT System Improvements
e.g. CRM

C&S Incentives
e.g. CSAT

Tactical Engagement

Specific Q&A engagement for plan build; Broad socialisation of RIIO-3 submission; Alignment to C&S priorities

Customer & Stakeholders

Cyber

IT

GSO

Asset

Hydrogen

Innovation

Environment

Operations

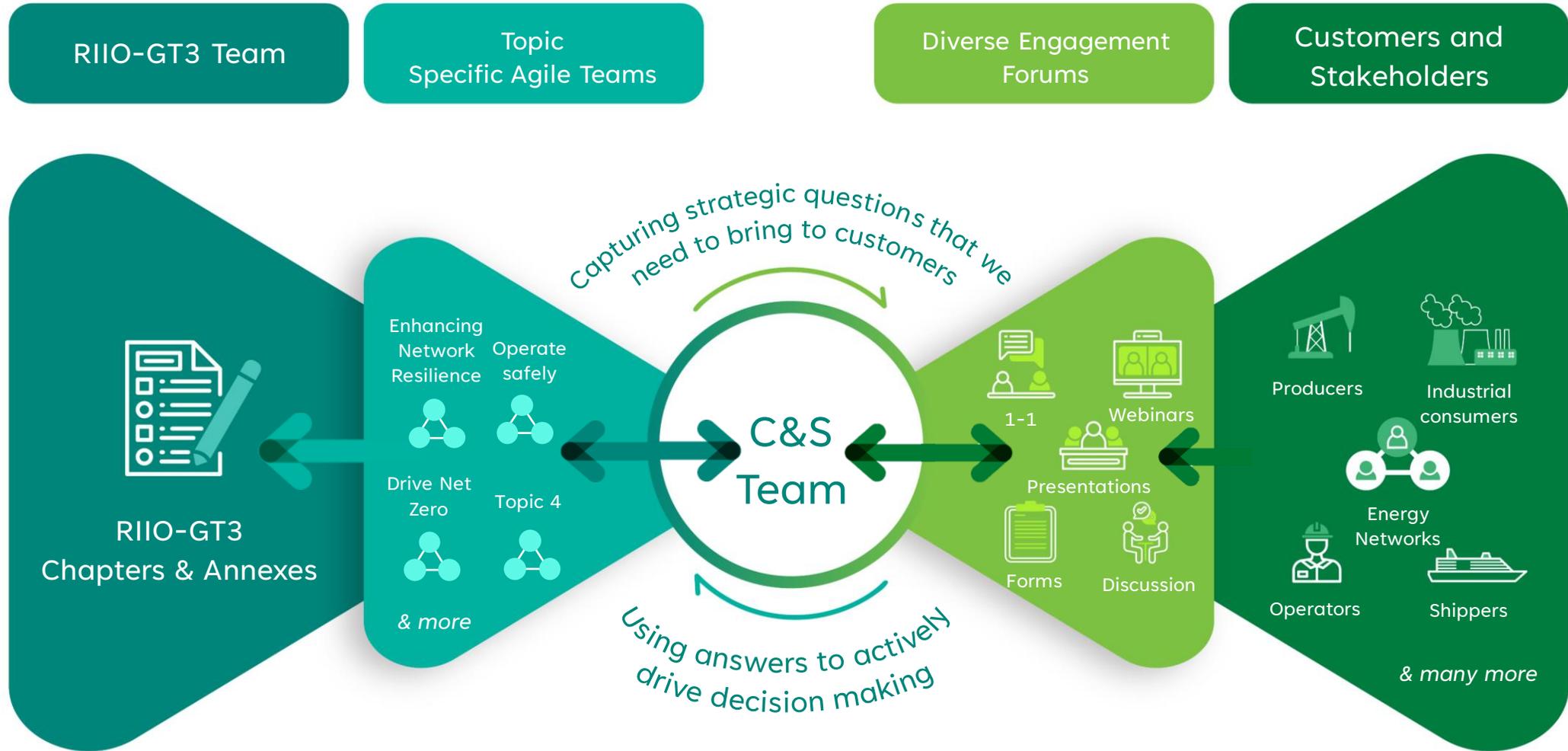
Construction

Commercial

Procurement

People

We are driving a **targeted** and **strategic** approach to customer engagement



The C&S engagement strategy is a customer, stakeholder and consumer led plan to achieve Leading a **Clean Energy Future** for Everyone

Ofgem Priorities

Infrastructure fit for low-cost transition to net zero

High quality service from regulated firms

Secure and resilient supplies

System efficiencies and long-term value for money

Priorities / Golden Threads

Shaping the energy of the future

Grow our capability and value everyone's contribution

Driving net zero

Operate safely, reliably and flexibly

Enhancing Gas Network Resilience

Shaping the gas market Of the future

Operate safely, reliably and flexibly

Positive environmental and community impact

Positive ESG impact on customers

Sustainable value for our customers and stakeholders

Innovation in the Gas industry

Data & Digital

Consumer Priorities

An accurate and affordable bill that fairly reflects what I use

To clearly understand where my energy has come from

To use energy when I need it without concern

Be seen as a valued customer through quality, pioneering service

To feel supported in an uncertain future energy market

I want to know I am doing my bit for the environment in a sustainable way

Our Ambition:

The C&S team will forge impactful answers to 100+ Strategic Questions and align to 'Shaping the Future of Gas' and validate through our data driven approach

We will deliver this through our prioritised engagement approach to reach 5,000 customers and stakeholders to gain deep customer insights for RIIO-3

Engagement Goals:

12

Interactive virtual group events & workshops

100 +

1:1 Deep-dive interviews

500 +

Survey responses

1000+

Engagements via webinars

1

Working session with Independent Stakeholder group

8

1:1 interviews with Independent Stakeholder Group members

Reaching over 5,000 customers and stakeholders



We will use multiple engagement channels to understand priorities & pain points to meet & exceed Ofgem's requirements



As part of our engagement strategy C&S will continuously engage customers, stakeholders and consumers



Engagement methods



Interactive
group events
and workshops



1-2-1
deep dives



Customer
Surveys



Comms &
Social Media



Webinars



*Suggested
methods from YOU
today?*

C&S Engagement Overview

Key
==== Engagement

February

Interactive group events and workshops

National gas transmission
Engagement Webinar

CSAT deep dives

March

1:1 deep dives

Ofgem working group

Webinars

Customer Surveys

ISG Engagement

Consumer Survey

Late Spring 2024

Customer Insight Analysis

Insight led group customer sessions

Consult on our incentive proposals package

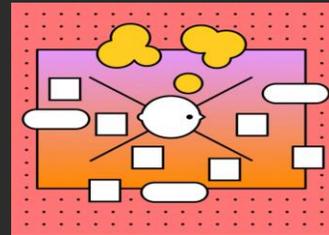
April

Post April

NG Large-scale Engagement Event

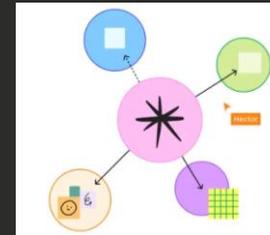
Long term engagement milestones

We will use an **interactive** and **design thinking** approach for our group sessions to drive best in class customer insights with our engagements



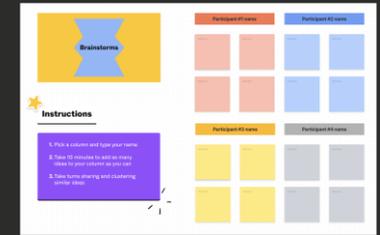
Empathy Maps

Map customer & stakeholder attitudes and behaviours



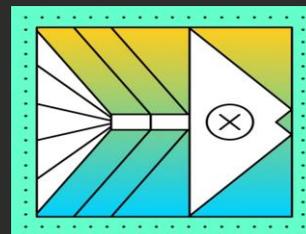
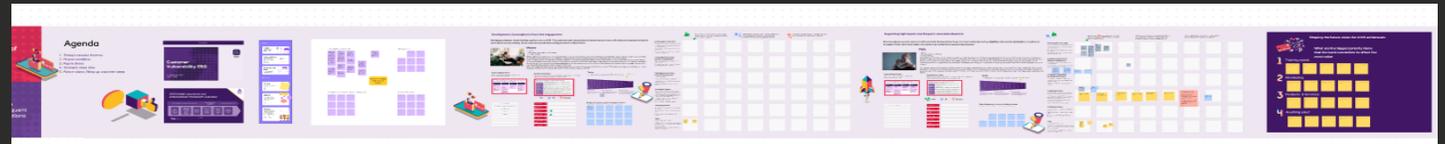
Ecosystem Ripple Effect

Find solutions across the end-to-end system



Open Questions Exercise

Brainstorm answers to open-questions in defined timeframe



Fishbone Diagram

Analyse the causes and effects



Key Theme Prioritisation

Evaluate which of these themes is most important for your operation/consumption



Value Chain Pain-points

Examine the opportunities for improvement across the end-to-end value chain blueprint

Engagement Activity – We want your insights!



Join at menti.com | use code 84 32 37 3



national gas transmission



General Updates

Nicola Lond

Operational Liaison and Business Delivery Manager

Entry Capacity Auctions (AMSEC)

- Annual Monthly System Entry Capacity auction upcoming ('pay as bid')
- Auction invitation issued to shippers on 12th Jan 24
- Capacity sold in monthly blocks from Apr 24 – Sep 25
- Capacity auctioned in 4 tranches (25% tranche 1-3, 25% + unsold in tranche 4)
- Auction dates: 12th, 15th, 20th, 23rd Feb (08:00-17:00)
- Allocation by 09:00 on business day following each tranche

Entry Capacity Auctions (QSEC)

- Quarterly System Entry Capacity auction upcoming ('clearing price')
- Auction invitation letter to be issued on 19th Feb
- Capacity sold in quarterly blocks from Oct 25 – Sep 40
- Auction dates (up to max of 10 business days) 18th – 29th Mar (08:00 – 17:00)
- Auction can close early if prices stabilise so not all 10 rounds may run
- Allocation may commence from 20th Mar but due to complete by end of May
- Explanatory presentation on NGT Entry Capacity web page

Entry Capacity Auctions – more info

- Our Entry Capacity web page: [Entry capacity | National Gas](#)
- Capacity Team email: capacityauctions@nationalgas.com
- Capacity Team direct line: +44 (0)1926 654057
- QSEC explanatory presentation link is on Entry Capacity web page above

Gas Data Portal Updates

1

New Summary Page on Gas System Status

- We are working on a new Summary Page which includes key data points from Gas System Status
- Feedback from Users has been that it would be useful to have key data items on a single page
- We will be releasing the Summary Page soon so watch this space – Planned for February release



2

API Upgrades

- We are continuing work with our API upgrades and will be looking to release the new RESTful APIs in Spring 24. More to follow.
- The existing SOAP APIs will still be available for use for the foreseeable future.

3

Gas Data Portal User Community

Please join our Gas Data Portal User Community where you can be the first to know about:

- Transformation Project Progress Updates
- Polls/Surveys for future Gas Data Portal changes
- Upcoming planned outages
- High priority Incident updates



<https://forms.office.com/r/w8sxn33rXF>

4

Bookmarking our URL

- Our new Gas Data Portal has been live since July 23. Please bookmark the latest url as we are starting work to remove the old url. <https://data.nationalgas.com/>



Publication highlights



Exercise Everest Report

[PowerPoint Presentation \(nationalgas.com\)](https://www.nationalgas.com)



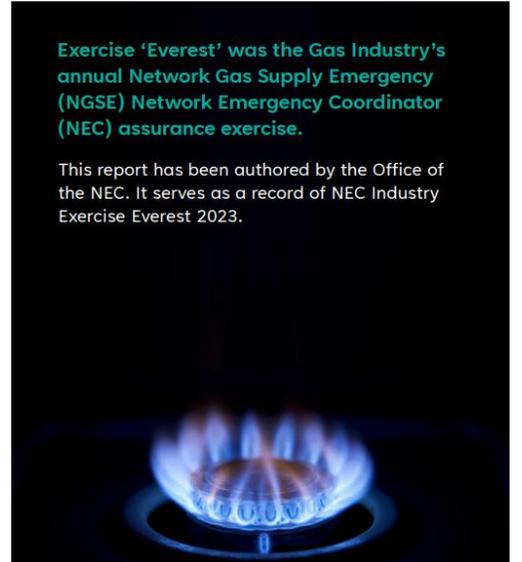
Maintenance Plan

V1 will be published by the 31st January - <https://www.nationalgas.com/data-and-operations/maintenance> Exit customers will be notified directly of impacting maintenance through the individual notice process. If there are any questions at any time regarding NTS outages, contact ntsaccessplanning@nationalgas.com



National Energy System Operator (NESO)

will be a new, independent, public corporation that will be responsible for planning Britain's electricity and gas networks and operating the electricity system. [ESO announces the name of the forthcoming Future System Operator | ESO \(nationalgrideso.com\)](https://www.nationalgrideso.com)



Maintenance

Maintenance is an essential undertaking as part of our role to keep the high pressure gas National Transmission System (NTS) safe, fit for purpose and operating efficiently and economically, in line with our obligations.

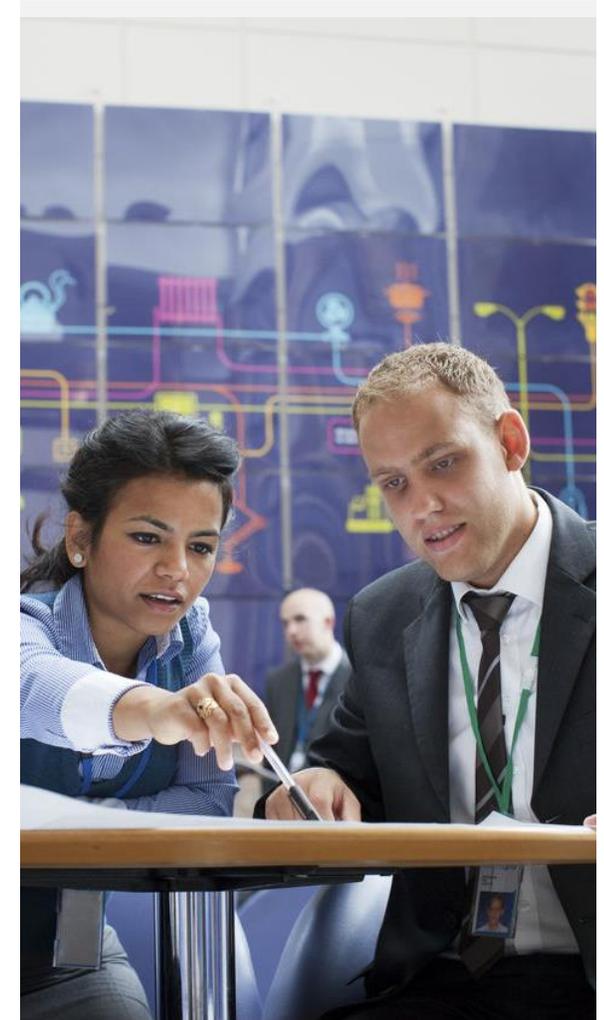
How to contact us

	Operational Liaison Team	Box.OperationalLiaison@nationalgrid.com
Nicola Lond	Team Manager	Nicola.j.lond@nationalgas.com
Craig Shipley	Snr Operational Liaison Officer	Craig.Shipley@nationalgas.com
Charlotte Gillan	Snr Operational Liaison Officer	Charlotte.Gillan@nationalgas.com
Niall Finn	Snr Operational Liaison Officer	Niall.Finn@nationalgas.com
Gary Barnes	Snr Technical Assistant	Gary.barnes@nationalgas.com

If you have any Operational enquiries or would like a liaison meeting, please get in touch.

National Gas Website: [Gas Transmission | National Gas](#)

[National Gas Transmission](#) |



2024 Operational Forum Programme

The forums will be hybrid via Microsoft Teams and at the Clermont Hotel, London as shown:



Jan 25th	Feb 22nd	Mar 21st	Apr	May 16th	Jun 20th	Jul	Aug	Sep 19th	Oct 17th	Nov 21st	Dec
Clermont & Online	Online Only	Clermont & Online	x	Online Only	Clermont & Online	x	x	Online only	Clermont & Online	Online only	x
Future		Maintenance			Winter Review/ Summer outlook				Winter Focus		
Operational overview/ interesting days/topical content/Q&A											

Registration for February's Operational Forum:
<https://ngt.ticketbud.com/gas-operational-forum-february-online->
 This is an Online only event

The Clermont Hotel
 Charing Cross
 London
 WC2N 5HX

Thank you





national gas transmission

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.

Activity	Link
Registration for Gas Ops Forums and Gas Ops Forum materials	www.nationalgas.com/data-and-operations/operational-forum
Subscription to distribution list	Please email: box.operationalliasion@nationalgrid.com
National Gas Transmission Website	www.nationalgas.com
Maintenance Planning	www.nationalgas.com/data-and-operations/maintenance

Britain's Gas Explained

Now available in online library

April 2023

 national gas transmission

The monthly Britain's Gas Explained information is on LinkedIn; this is information showing the key role Gas plays that is easy to digest for all; especially end consumers

<https://www.nationalgas.com/data-and-operations/transmission-operational-data#tab-1>

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.

The Energy Data Request Tool to request the publication of any data is available here: [Microsoft Forms Link](#)

FutureGrid

A high-pressure hydrogen test facility using decommissioned transmission assets, to demonstrate the National Transmission System (NTS) can transport hydrogen safely and reliably.

See FutureGrid in Virtual Reality

