

Shaping the Gas Transmission System of the Future

Round up of priorities

We will start at 11.02 to allow people to finish previous meetings

nationalgrid



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Who will be speaking today?

Phil Sheppard
Gas Transmission
Director



Bridget Hartley
Business planning
and strategy
manager



Jon Dutton
Future Networks
Manager



Jennifer Pemberton
Stakeholder
Manager



Logistics

Should last for approximately about 60 min

Questions and polling via slido.com #NGG1

All callers will be placed on mute

We will circulate the slides and a recording of this webinar

 Based on stakeholder insight  Opportunity for stakeholder input

Planning the network webinar Mon 23rd Nov @ 14.00
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 Sign posting upcoming webinars

Agenda

1
**Welcome
and opening**

2
**Network
Capability**

3
**Round up of
priorities**

4
Q&A

Welcome and Opening

Thank you for joining us today
Please feedback via SLIDO

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Our Vision:

To be at the heart of a clean, fair and affordable energy future

Industrial and Domestic consumer priorities ...

I want an affordable energy bill

I want to use energy as and when I want

I want you to deliver a sustainable energy system

...are delivered through our stakeholder priorities...

I want to take gas on and off the Transmission system where and when I want

I want all the information I need to run my business, and to understand what you do and why

I want to connect to the Transmission System

I want the gas system to be safe

I want you to protect the Transmission system from cyber and external threats

I want you to care for the environment and communities

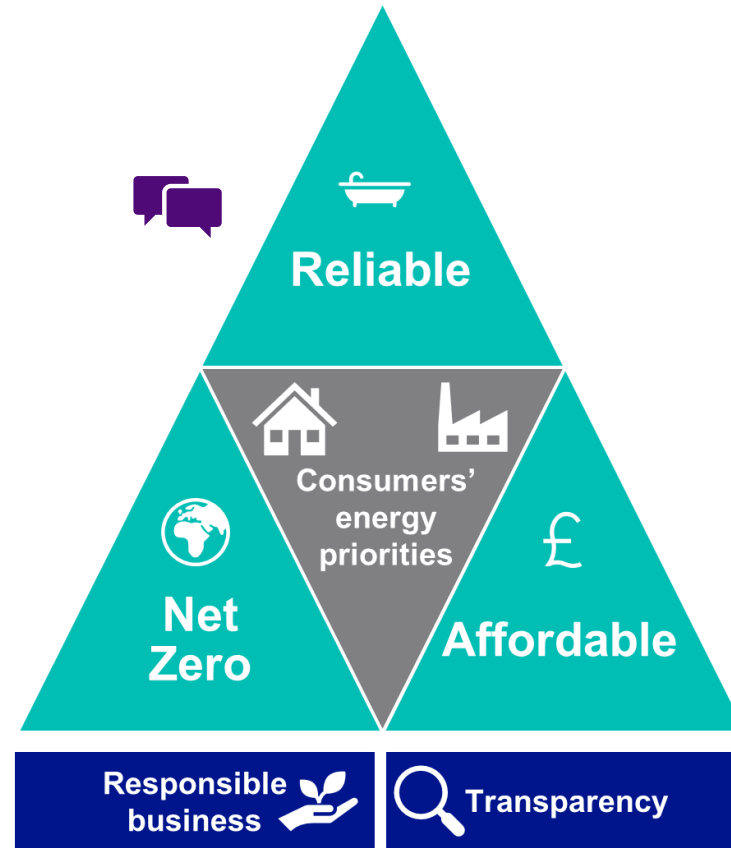
I want you to facilitate the whole energy system of the future – Innovating to meet the challenges ahead

I want you to be efficient and affordable

Network Capability

Understanding consumers' priorities

Society is facing unprecedented change



CACoP
Code Administration Code of Practice

Consumer Benefit Analysis guidance document

1. ASSESSING THE CONSUMER BENEFIT

We have developed a consumer benefit analysis approach to collect evidence about how the modifications we develop and the changes we introduce impact end consumers. This will require Proposers and the industry to provide more specific information regarding the impact of the change on end consumers.

The consumer benefit analysis is made up of three different parts:

1. An explanation of the current end consumer experience, and how it would be affected if the modification was not implemented (including the impact the current situation would have on consumers if left unchanged)
2. Outline the proposed new consumer experience if the modification is implemented, highlighting how this is different from the current experience

Consumer impact of code changes

Gas
Transmission

Network Capability

nationalgrid



Network Capability – a reminder...

System Transformation
High Continental

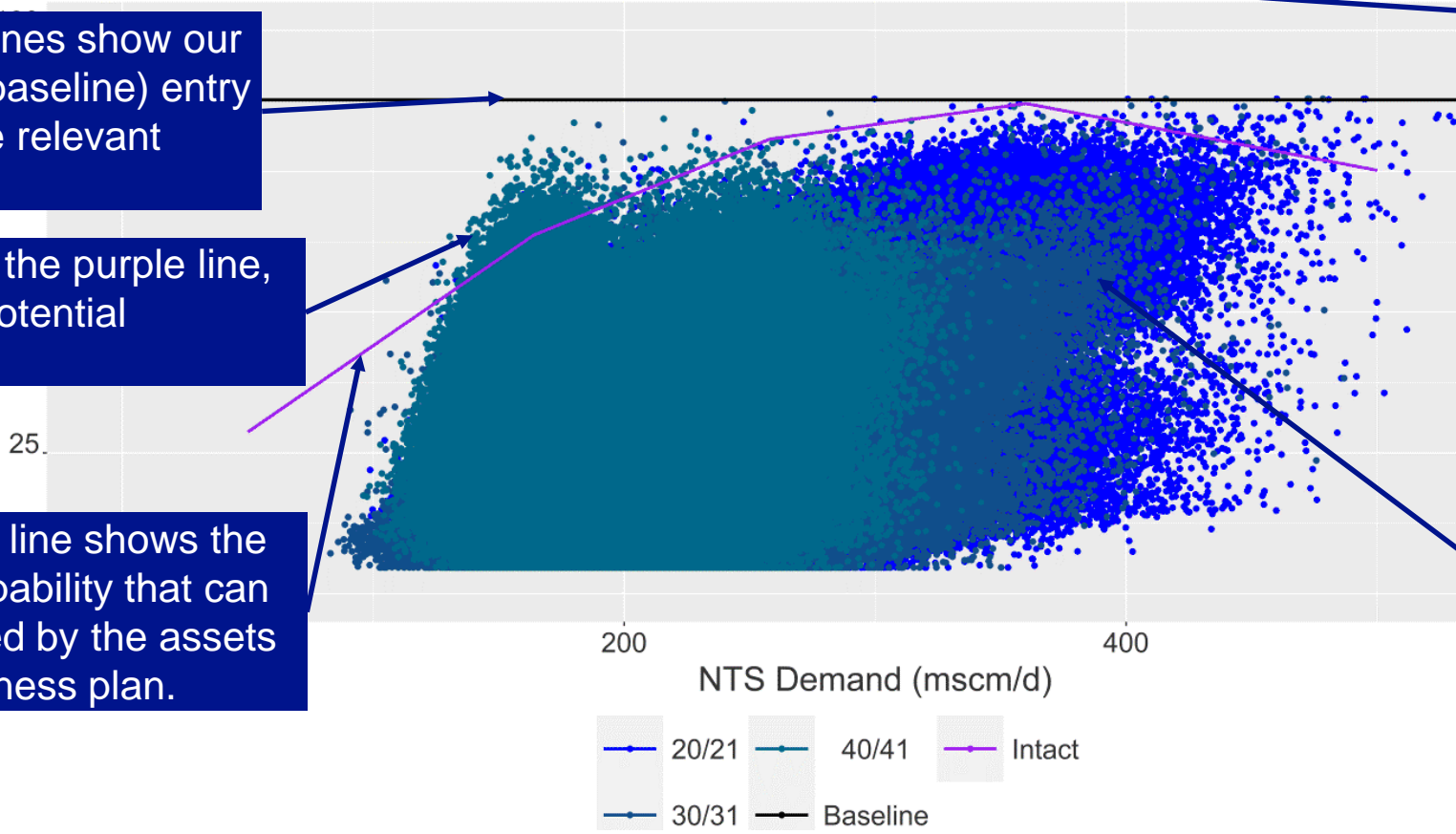
The black lines show our obligated (baseline) entry level for the relevant zone.

Each zone of the network will have four graphs. These graphs show the projected supply and demand for each of the *four Future Energy Scenarios (FES)*.

Dots above the purple line, indicate a potential constraint.

The purple line shows the level of capability that can be delivered by the assets in our business plan.

The cluster of dots show the projected supply and demand scenarios in the future. In this case for 2020/21, 2021/22 and 2040/41.



These visuals are based on Future Energy Scenarios (FES) and show the level of network capability within a region

Network Capability – Where are we now

1

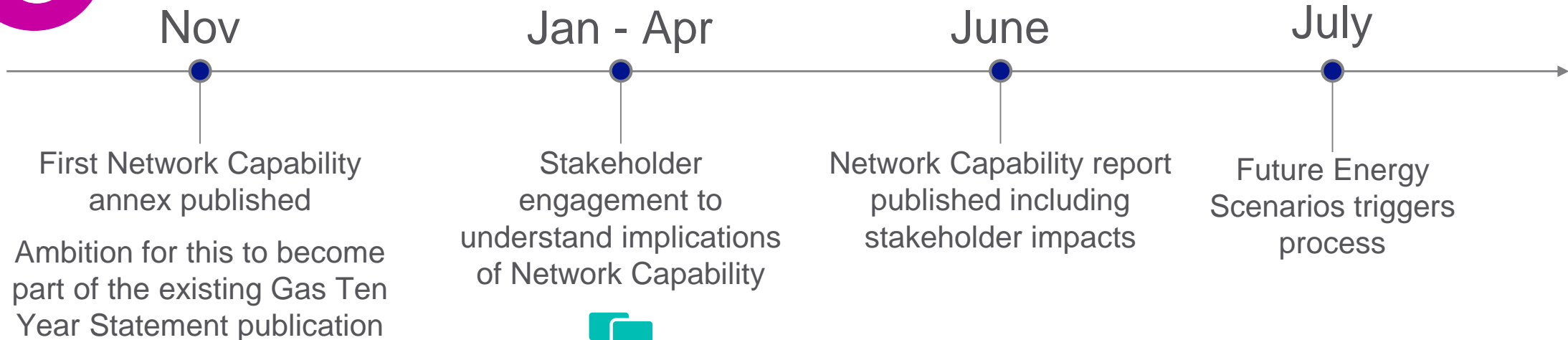
Established an annual iterative process

2

Standardise how we use network capability within our network development investment process

3

Analyse and refine the outcomes with stakeholders





Stakeholder priorities



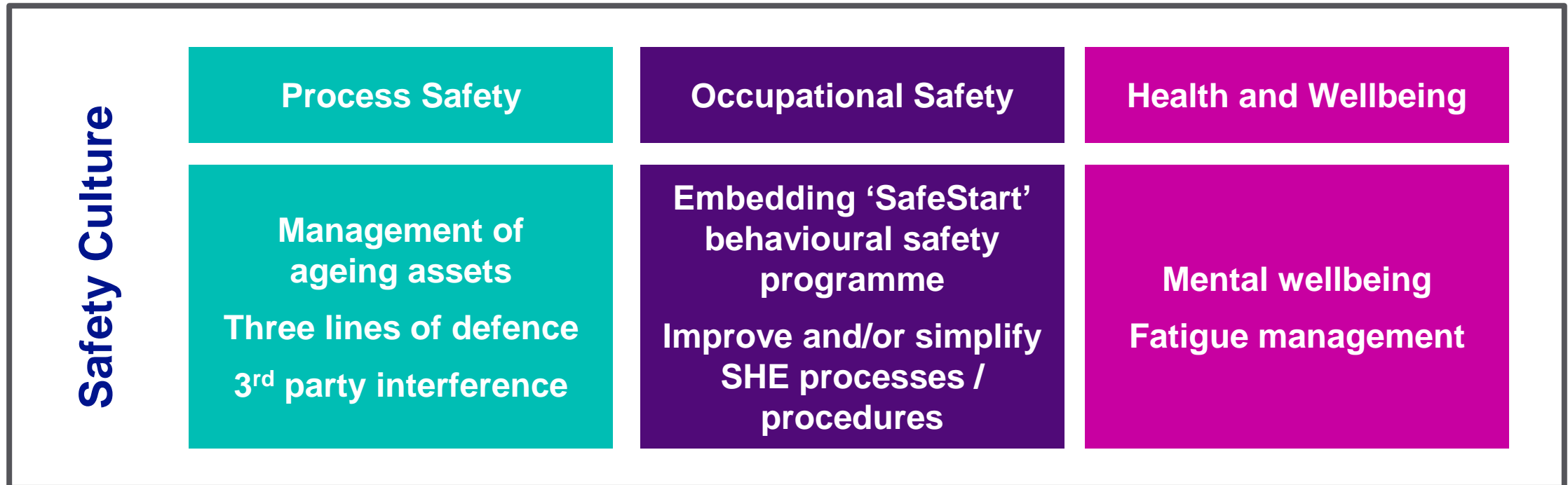
I want the gas system to be safe

This priority is about what we do to keep the public, our employees and other people who work on or around our assets safe from the hazards inherent in our business.

Our performance in RIIO-1: 

Injury Frequency Rate	Safety Culture survey
0.07 	6.17 

This priority is delivered through our safety management system, which is a framework that allows us to consistently identify and control health and safety risks, reduce potential for accidents and incidents, and continually improve performance. The framework is aligned to the 'Plan, Do, Check, Act' continuous improvement process. This involves identifying key areas of focus, developing plans and engaging with stakeholders to deliver.



I want to put gas on and off the transmission system where and when I want

Our stakeholders value being able to **flow gas without restriction**. This priority is about ensuring we have the **right gas transmission system**, maintained to the right level alongside a **complimentary commercial framework** to meet stakeholder and consumer needs.

Our performance in RIIO-1:



1 Deliver existing capacity obligations in accordance with UNC licence and Gas Act: Throughout the period each year, a minority of capacity actions have been impacted by system issues, including planned outages



We are managing the network to maintain current levels of reliability

- Working with Ofgem to make sure we continue to do this in RIIO-2 and beyond



Bacton

- Asset health
- Site redevelopment
- Energy hub

Asset health

- Feeder 9 tunnel complete, commissioning December 20
- Planning RIIO-2 work
- Work continues to be planned with customers to minimise impact



National Grid




I want to put gas on and off the transmission system where and when I want

Network resilience

- Exercise Baltic successfully demonstrated our ability to deliver our emergency procedures while working remotely
- Developed winter plans

Open consultations

-  Gas quality blending service consultation – closes 13th November
 - [Watch the webinar](#)

Publications

- Winter Outlook – October
- Gas Ten Year Statement – November
- Summer Outlook – April
- Winter Review – June
- Network Capability Report – June
- Gas Future Operability Planning



I want you to protect the transmission system from cyber and external threats

Our network is part of Great Britain's Critical National Infrastructure (CNI). This priority is about protecting the network from physical and cyber security threats including terrorism, criminality and vulnerability in information technology (IT) and operational technology (OT) systems.

Physical Security

- On target to install all solutions agreed in 2017

Looking forward

- We are **continually engaging** with our stakeholders to ensure our plan is **fit for purpose**.
- Work closely with BEIS, Ofgem and sector peers on further **development of policy** for physical security

Reporting:

- Compliance against our BEIS commitment
- Spend against allowances

Our performance in RIIO-1:



I want you to protect the transmission system from cyber and external threats

Cyber Security

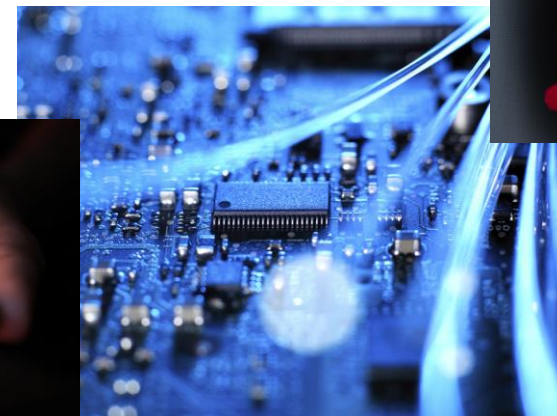
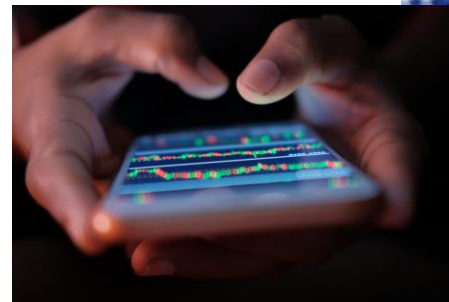
- **Least functionality** risk management approach
- **Telemetry** cyber security best practice
- Worked closely with key stakeholders in **GB** and **Europe** to develop cyber proposals
- Started surveys and written cyber **security management system**

Looking forward

- Continue to deliver our **NIS improvement plan** with enhanced capabilities in cyber asset management, intrusion detection and business continuity

Reporting:

- **Compliance** against cyber security legislation
- Progress against **Improvement Plan/ Investment plan**
- **Spend** against **allowances**



I want you to care for the environment and communities

We care about the environment and the communities we serve. As a responsible business, we are committed to delivering environmental and community benefit, prioritising the issues that matter most to stakeholders

Our performance in RIIO-1:



1 Undertake works at Peterborough and Huntingdon compressor stations as part of IPPC legislation: Delays in the project have resulted in rescheduling outages.

2. Meet our targets for the amount and the cost of the energy we use to run the network: Energy usage 4,536GWh, whilst cost £80.1m

Within our Environmental Action Plan, we have a five of pillars:



Air Quality

- **Lowest** NOx year to date
- Utilisation of **Best Available Techniques (BAT)** units

Climate Commitments

- Innovation project to **detect methane leaks** (MORFE) approved
- Trials for **onsite renewables** underway

Responsible Asset Use

- **98% waste diverted** from landfill – construction
- **46% office waste recycled**
- **95% diverted** from landfill

Caring for the natural environment

- Delivered environmental enhancements for **37 out of 50** sites
- **Net gain** on all major projects by 2020

Leadership

- Developed an **environmental champions** network
- **Net Zero construction 2025/26 roadmap**

I want you to care for the environment and communities

Looking forward...

Environmental action plan incentive

- Performance against our new environmental commitments will be monitored and incentivised in RIIO2.

Change to our greenhouse gas incentive

- Now balanced incentive
- Allows us to invest any reward into new innovations

Invest to reduce our own carbon footprint

- Electric vehicles
- 100% renewable energy in our offices
- Installing renewable onsite generation

Implement MORFE

- Real-time monitoring of methane emissions/leaks
- Find and fix leaks as they occur
- Quantify leaks for science-based target



Responsible business

**Building the skills needed
for a Net Zero future**
Thu 12th Nov @ 11.00

Being a responsible business is the right thing for us to do not just in the way we deliver energy to society. It's also about our role in the communities we serve, the diversity of our workforce, and the levels of trust we have with our stakeholder and regulators.

01  **The environment**
We will enable a fair and affordable transition to a clean energy economy, and reduce our own emissions.

02  **Our communities**
We will deliver sustainable energy safely, reliably and affordably, ensuring no one gets left behind.

03  **Our people**
We will develop the right skills to enable and accelerate the energy transition, and strive to build a diverse workforce and inclusive culture.

04  **The economy**
We will power and heat society, and partner with regulators, our business partners, suppliers and other key stakeholders.

05  **Our governance**
We will make sure our governance mechanisms reflect our commitments, and that the principles of responsibility guide us in everything we do.

Looking forward

We will develop the right skills to enable and accelerate the energy transition, and strive to build a diverse workforce and inclusive culture

- **Green Recovery** – play our part in supporting the green recovery prioritising net-zero work and creating new job opportunities for those most disadvantaged
- **Employee Training and Engagement** – implement a comprehensive employee engagement and training programme
- **Track Progress** – reporting, measuring, demonstrating performance and improvement with sustainability fully embedded in our decision making

More information on our Responsible Business Charter can be found on our [website](#)

I want you to facilitate the whole system of the future, whilst innovating to meet the challenges ahead

GMAP
Mon 16th Nov
@ 10.00



Shaping the Innovation Strategy for RIIO-2
Tue 03rd Nov
@ 14.00



Market Change
continuing our increased engagement across the industry to lead and deliver market and regulatory change

Decarbonisation of the network Inc hydrogen
developing options to enable decarbonisation of heat using whole systems approach

how we help the UK achieve net zero target by enabling decarbonisation of heat, transport and industry at the lowest cost to consumers.

Innovation
driving innovation to help meet the challenges of the future while ensuring consumer bills remain affordable

Systems
enabling and supporting market and regulatory change, through developing the right systems to deliver a digital future

Mapping our hydrogen transition -
Wed 18th Nov
@ 14.00



HyNTS - FutureGrid
Tue 01st Dec
@ 14.00



Heating our homes in a Net Zero future
Fri 20th Nov
@ 14.00






I want you to facilitate the whole system of the future, whilst innovating to meet the challenges ahead

The Gas Market Plan

Future of Gas Steering group



2020 Project Areas:

-  **H2** – what future market change is need?
-  **Gas Quality** – implementing future gas quality changes
-  **Capacity Access Review & Gas Balancing** – What could the future arrangements be?

National Grid

Many big questions the industry needs to address to enable a sustainable energy system

What will be the role of gases?

- Natural Gas, H2 & Biogas

What cost effective technologies will we see develop?

- Supply: Electrolysers, Methane Reformers, CCUS, BioSNG etc
- Demand: HP & Hybrid HP, EVs & Gas vehicles, H2 Boilers etc

What do energy users want and need?

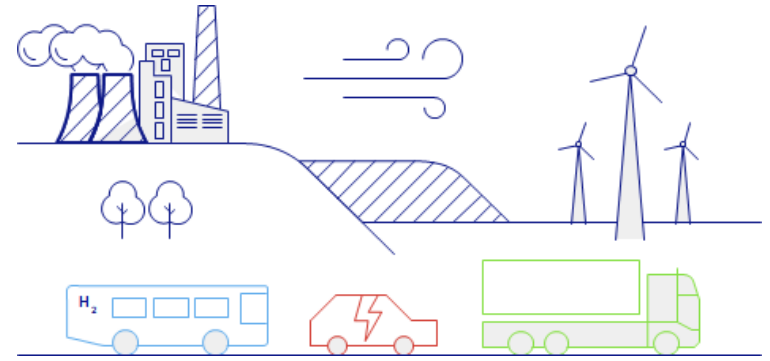
- Industrials & commercial, power generators, domestic use?

How will the market develop as we decarbonise?

- Business models, policy interventions, energy market alignments, consumer influences, disruptor technology and infant to mature market developments

How will networks impact the future of the energy industry:?

- Managing different gases (blends and de-blends), capability, maintaining SoS, facilitating connections & charging?



I want all the information I need to run my business, and to understand what you do and why

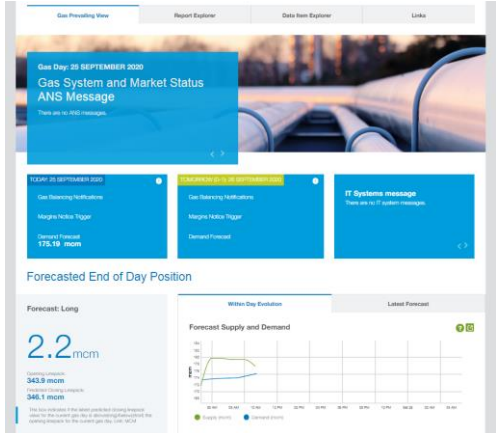
Transparency and information are fundamental to stakeholders' ability to operate their businesses efficiently and effectively.

Our performance in RIIO-1:

Looking back:

Improved customer and stakeholder user experience:

- **Visualisation** of data
- data **definitions**
- increased **volume** of data available
- **Operational Data Community**



For RIIO-2 we will:

- provide **more data** through the data triage process
- **proactively evaluate data** in support of the net zero challenge.
- further implement the **Energy Data Taskforce recommendations** through the implementation of our digital strategy
- **continually engage** with customers and stakeholders to ensure any developments support your needs

We have also:

- implemented a high level **data triage** process to support **additional data requests**
- released **additional analysis** during **Covid** to the industry to support businesses through difficult times.



I want to connect to the transmission system


This priority is about what we do to **connect, modify** or **disconnect** new and existing sources of **gas supply** and **demand** as our customers' requirements change. It is an enabler for decarbonisation of the gas and electricity systems.

Our performance in RIIO-1: 

In the last 12 months we have delivered:

Connections	Diversions	Disconnections
3	2	1

Looking back

 **Fordoun** - first CNG connection to the NTS delivered via a self-lay trial

- Lessons learned will inform policy and provide the basis for a self-lay connection option in the future



Biocow – first biomethane connection to the NTS using Project CLoCC designs.

- First low carbon connection to the NTS
- Lessons learned will inform policy change for smaller NTS connections

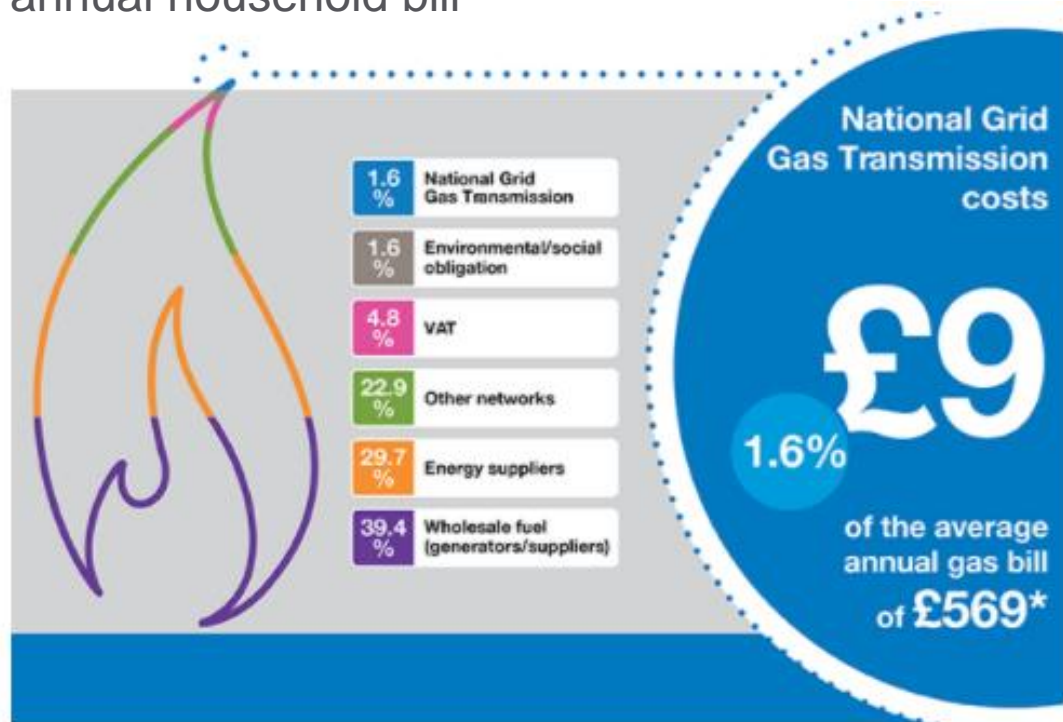
Looking forward

- **Connections portal enhancements** to improve your experience and transparency
 - **Survey** planned to understand initial thoughts for improved functionality
- **Gas Market Plan** clarify process to manage changes to Gas Quality limits in customer connection agreements
- **ENA connections workgroup** standardise connections experience where possible across all networks

I want you to be efficient and affordable

This priority is about how we manage and minimise the direct and indirect impact we have on consumer bills. We work with our customers to keep energy affordable, developing, maintaining and operating an economic and efficient network

Gas transmission currently costs £9 of the average annual household bill



*We use Ofgem's methodology to report the impact of our charges. The figures quoted are based on 2016/2017.



£8.85

RIIO-2 average consumer bill impact
(9p further reduction as a result of Ofgem's proposed actions)

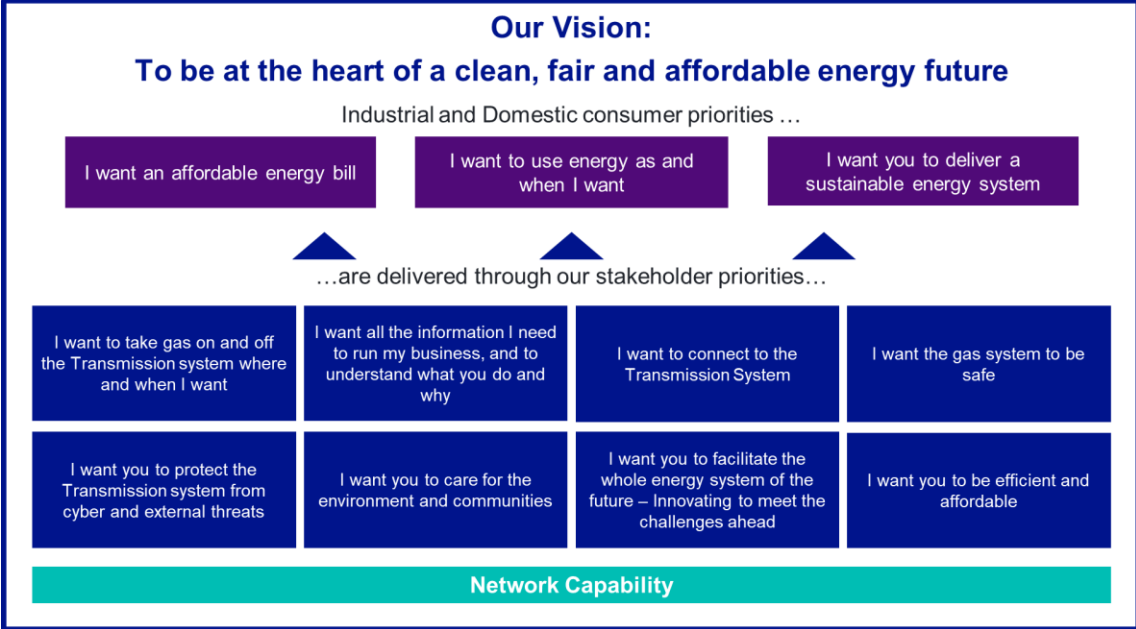
Simplifying Charging

- October saw significant changes to existing charging regime
 - Back to basics of Charges
 - Overview of changes
 - Case studies to bring them to life
 - [Watch again](#)

“such an informative and focussed session yesterday – it was an excellent overview of the topic”

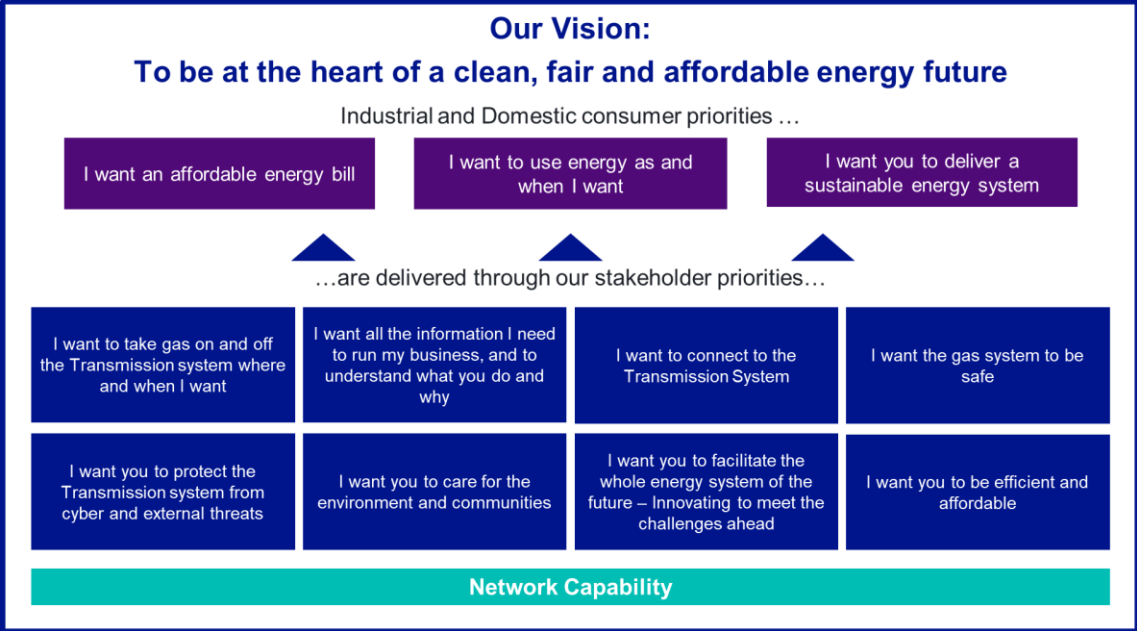
Are your needs still represented by these priorities?

Please explain your answer

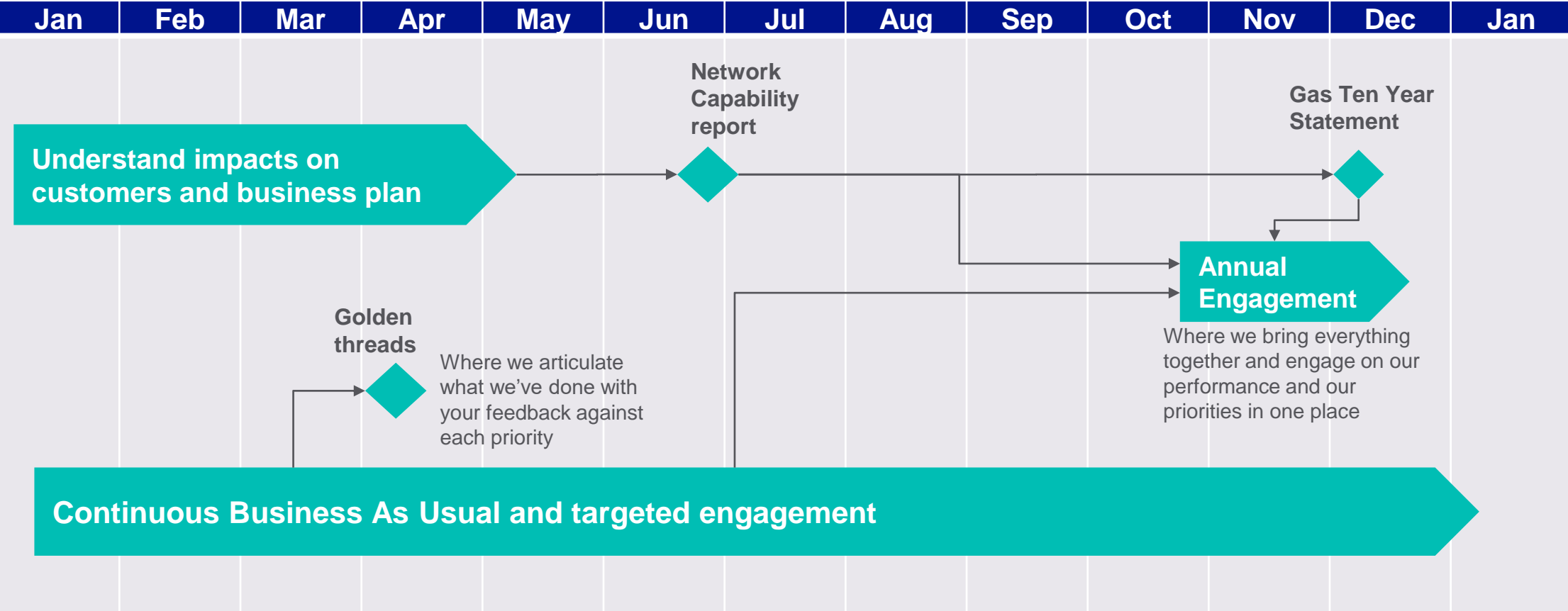


Which priorities would you like to engage with us on further?

Are there any other topics you'd like to talk to us about?



Continuing the conversation



Quick poll – Slido.com #NGG1



Thank you for joining us today

Digital strategy and information provision	Mon 02 nd Nov @ 14.00 – 15.00	Register here
Shaping the Innovation Strategy for RIIO-2	Tue 03 rd Nov @ 14.00 – 15.00	Register here
Operating the network	Thu 05 th Nov @ 10.30 – 11.30	Register here
Building skills today for a Net Zero	Mon 09 th Nov @ 13.30 – 14.30	Register here
Reducing methane emissions: opportunities and barriers	Thu 12 th Nov @ 11.00 – 12.00	Register here
Gas Markets Action Plan (GMaP)	Mon 16 th Nov @ 10.00 – 11.00	Register here
Mapping our hydrogen transition	Wed 18 th Nov @ 14.00 – 15.00	Register here
Net Zero construction 2025/26 roadmap	Thu 19 th Nov @ 10.00 – 11.00	Register here
Heating our homes in a Net Zero future	Fri 20 th Nov @ 9.00 – 10.00	Register here
Planning the network	Mon 23 rd Nov @ 14.00 – 15.00	Register here
HyNTS FutureGrid	Tue 1 st Dec @ 14.00 – 15.00	Register here