

# Gas Transmission Operating Environment



## Our assets are in a worse condition than expected requiring more interventions

Shortly after the start of the T1 period we undertook a review of asset health across the NTS to gain a comprehensive view of the network's condition. This highlighted a number of unexpected asset health issues which have now been grouped into campaigns to deliver the required works. We are spending above our allowances in order to maintain the same level of risk.



## Changing legislation has increased our focus on environmental interventions

In recent years there has been a requirement to change a number of legislations to improve environmental performance. This includes the Industrial Emissions Directive (IED) and the Integrated Pollution Prevention & Control (IPCC) directive which place limits on pollutants such as Nitrogen oxides. This has spurred a programme of works to ensure the NTS remains compliant.



## Changes to the way gas flows around GB have presented challenges for system operation

At the beginning of the price control period there was a distributed pattern of gas supply through import terminals across Great Britain. However, recent supply patterns have resulted in a more traditional North-South gas flow which has led to increased compressor running hours. This optionality of supply patterns has given significant benefits to UK consumers through access to the lowest cost natural gas.



## The RIIO T1 deal was agreed using assumptions about the future of gas which have not materialised

Prior to the T1 period, customers and stakeholders believed we should plan the network based on the FES 'Gone Green' Scenarios. This pathway hasn't materialised for a number of reasons including a changing political environment. This has meant the work we've undertaken hasn't aligned with our submitted business plans.

## RIIO T1 Outputs

### Reliability & Availability

- We've consistently reduced the number of maintenance days impacting customer connections down to just 1 in 2016/17. This has largely been done by aligning National Grid outages to customer outages and minimises our impact on customer operations
- We provide forecasting on gas demand for the day ahead (D-1) and week ahead (D2-5). This allows suppliers and demand centres to plan their operations effectively. Our performance against forecasting targets has been consistently strong in the past four years.

- We have greatly increased the volume of asset health works that we have delivered. Works to improve asset health have been grouped into campaigns to speed up delivery. This programme of works will ensure that the NTS remains safe and reliable.

	2013/14	2014/15	2015/16	2016/17
Maintenance days called	6	4	2	1
Forecasting error (D-1)	8.69mcm	8.068mcm	7.75mcm	8.53mcm
Forecasting error (D-2 to D-5)	13.1mcm	12.55mcm	12.09mcm	12.39mcm
Residual balancing incentive SAP	0.7%	1%	0.64%	0.95%

# RIIO T1 Outputs

## Safety

- We have suffered zero employee lost time injuries since the beginning of RIIO T1 resulting in an employee IFR (Injury Frequency Rate) of zero.
- A number of initiatives have been introduced to embed safety in our ways of working including:
  - Company-wide safe driving programme
  - Improved safety management system
  - Process safety reporting tools
- Work has been undertaken to comply with BEIS requirements for enhanced physical security. This includes works such as improved fencing and gates, improved security coverage and enhanced cyber security.
- We had a total of four process safety incidents in the previous four years, all of which resulted in an uncontrolled gas release. Three of these were due to seal failures.

	2013/14	2014/15	2015/16	2016/17
Contractor IFR	0	0	0.06	
Employee IFR	0	0	0	0
Total injury rate (TRIFR)	0.06	0.05	0.32	0.25
Serious Process Safety events	0	1	2	1

## Environment

- We have maintained strong environmental performance despite increased compressor running hours. This was due to more efficient usage of our electric compressor fleet. This leads to fewer emissions and therefore improved local air quality.
- There has been a year on year reduction in Unaccounted for Gas (UAG). This has largely been achieved by improving data handling between sites and reducing meter errors by improving validation.
- We have been granted an extension for the MCP (Medium Combustion Plant) directive, which limits pollutant emissions from compressors, until 2030. This allows us time to upgrade our compressor fleet ensuring there is no supply impact to consumers.
- Venting has been above target levels throughout the period. This is largely due to increased compressor running hours, particularly at the St Fegus Terminal

	2013/14	2014/15	2015/16	2016/17
Shrinkage	4277 GWh	3618 GWh	4592 GWh	4746 GWh
Unaccounted for Gas	2648 GWh	2121 GWh	2782 GWh	1272 GWh
Venting	3332 T	2857 T	2882 T	3590 T

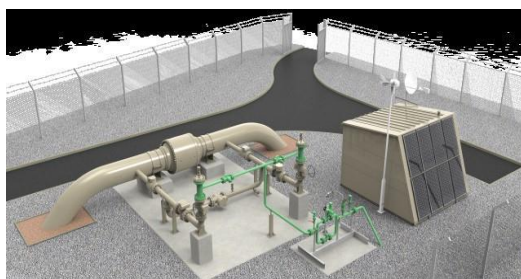
## Customer Satisfaction

- Our customer satisfaction score has been steadily improving over the last 4 years (8.03 in 2016/17)
- We have obtained consistently above target stakeholder satisfaction scores
- We are continuing to improve our customer-centric approach by closing the feedback loop with customers. This year, we contacted around 40% of customers and stakeholders and we will aim to contact 100% of customers and stakeholders after receiving their survey responses next year.
- Another change piece we are introducing is the Customer Journey programme, through which we will establish a governance structure to more carefully manage our customers' experience in key areas. A priority for this programme is the gas disconnection process which has been identified by our customers as an area which has significant problems.
- This year we solicited an independent health-check of our stakeholder engagement which showed a high performance against the AA1000 Stakeholder Engagement Standard, putting us second of the eight utilities sector organisations reviewed

	2013/14	2014/15	2015/16	2016/17
Customer satisfaction	7.153	7.593	7.552	8.03
Stakeholder satisfaction	7.792	7.944	8.020	7.98

## Customer Connections

- Based on stakeholder feedback we have developed Project CLoCC (Customer Low Cost Connections) to reduce lead time and cost on unconventional customer connections. This project focuses on simple or medium unconventional gas connections with the aim of reducing the cost to less than £2m and the timeframe to less than 12months. The project will deliver:
  - Customer connections portal which will give an indicative information on capacity and cost in proposed area
  - Develop and construct a suite of standardised pre-approved, pre-appraised connection designs
  - Optimise commercial arrangements



Project CLoCC standardised connection design

Safety				
	Our output	2016/17 Target	2015/16 Performance	2016/17 Performance
1	Comply with Health and Safety Executive (HSE) legislation	100%	Complied	Complied
2	Meet requirements for enhanced physical site security	Meet BEIS requirement by 2021	On track	On track
Reliability and availability				
	Our Output	2016/17 Target	2015/16 Performance	2016/17 Performance
3	Maintain our security of supply obligations in Scotland (Network Flexibility)	Ensure compliance with 1 in 20 obligations by 2020	Strategy in place to ensure compliance	Strategy in place to ensure compliance
5	Meet our targets for investing in our assets to maintain their health (NOMs targets)	Deliver network replacement outputs in accordance with the licence	In aggregate, on track to deliver 8 year target	In aggregate, on track to deliver 8 year target
6	Replace Feeder 9 (pipeline that runs across the Humber Estuary)	Achieve planning consent ahead of reopener submission	On Target – Awaiting planning consent approval (August 2016)	On Target – Planning approved and enabling works commenced
7	Deliver benchmark performance for maintenance outage days	11 days (Remote Valve Operations)	2 maintenance days called	1 maintenance day called
8	Minimise National Grid driven changes to maintenance planning	16.82 days	No changes	No changes
9	Meet constraint management target	£26.99m allowable costs for entry/exit capacity	£0m cost	£0.58m cost
10	Meet target for Transmission Support Services and for Constrained Liquefied Natural Gas & Long Run contracting	£8.9m allowable cost	£0m cost	£0m cost
11	Deliver existing capacity obligations in accordance with UNC, Licence and Gas Act	All UNC, Licence and Gas Act capacity obligations to be met in full	System issues impacted a minority of auctions. All changes corrected	System issues, including planned outages, impacted a minority of auctions
12	Deliver accurate 13:00 day ahead demand forecasting	9.39 mcm average forecast error	7.75 mcm average	8.53 mcm average
13	Deliver accurate demand forecasting at the two to five days ahead stage	13.7 mcm average forecast error	12.09 mcm average	12.39 mcm average
14	Meet target for residual balancing linepack performance measure	<2.80 mcm average daily change	1.62 mcm average daily change	1.74 mcm average daily change
15	Meet target for residual balancing price performance measure	Average daily difference between max and min price paid, to be within 1.5% of System Average Price (SAP)	Difference 0.64% of SAP	Difference 0.95% of SAP
16	Procure Operating Margins (OM) in an economic and efficient manner	Incur OM costs efficiently and publish report on the steps taken to promote competition	OM strategy aligned to target, report published to time	Report published to time. £8.7m decrease in costs in 2016/17

Environment outputs				
	Our output	2016/17 Target	2015/16 Performance	2016/17 Performance
17	Develop an integrated and cost-effective plan to ensure the remainder of our compressor units are compliant with the Integrated Pollutions Prevention and Control (IPPC) and Industrial Emissions Directive (IED) legislation	Delivery date 2018	Plan submitted in May 2015	On target for re-submission in May 2018
18	Undertake works at Peterborough and Huntingdon Compressor Stations as part of the IPPC legislation	Delivery date 2020	On track to deliver one new unit at each site as part of IPPC 3	On track to deliver one new unit at each site as part of IPPC 3
19	Undertake works at Aylesbury Compressor Station to ensure compliance with IED	Delivery date 2020	On track to deliver installation of catalytic converter	On track to deliver Installation of catalytic converter
20	Report on our business carbon footprint	Publish in annual report	Published in our annual report	Published in our annual report
21	Meet greenhouse gas emissions targets	<2,897 tonnes for 2016/17	2,882 tonnes	3,590 tonnes
22	Meet our targets for the amount and the cost of the gas we use to run the network	<4,790 GWh (Gigawatt hours) gas equivalent usage target <£76.1m cost target	4,592 GWh £73.2m	4,746 GWh £70.5m
Customer Satisfaction outputs				
	Our output	2016/17 Target	2015/16 Performance	2016/17 Performance
23	Undertake annual satisfaction survey with our customers and stakeholders.	Customer 6.9/10 Stakeholder 5/10	7.6 for customer 8.0 for stakeholder	8.0 for customer 8.0 for stakeholder
24	Submit annual stakeholder engagement report	Cap of 9 and collar of 4	Achieved a score of 6.15	Achieved a score of 6.5
Customer Connections outputs				
	Our output	2016/17 Target	2015/16 Performance	2016/17 Performance
25	Achieve our obligated times for delivering extra capacity on the system	Target of 24 months from the point of formal commitment	Compliant - No incremental capacity due for delivery this year	Compliant - No incremental capacity due for delivery this year
26	Meet timescales for connection applications as specified in UNC Modification 373 and comply with reasonable requests for a customer connection to the National Transmission System	2 business days for application acknowledgment 5 business days to confirm competent connection application 2 months for initial connection offer 9 months for full connection offer 3 months for a Feasibility Study Report	Timescales met	Timescales met

## Key

**Red** – Missed an annual output and forecast to miss the remainder of our eight year output commitment

**Amber** – Missed annual output but on target to progress towards the remainder of our eight year output / successful achievement of annual output and risk of failure of the remainder of our eight year output

**Green** – Successful achievement of an annual output and on target to meet the remainder of progress towards our eight-year output commitment

<sup>[1]</sup> The 2015/16 numbers have been taken from 'Our Performance' publication from September 2016 - <http://www.talkingnetworkstx.com/General-Performance.aspx>

<sup>[2]</sup> In accordance with the NTS Shrinkage Incentive Ex Ante Baseline Value Statement usage target and actuals are quoted in GWh gas equivalent, using a factor of three to convert from electricity to gas equivalent.