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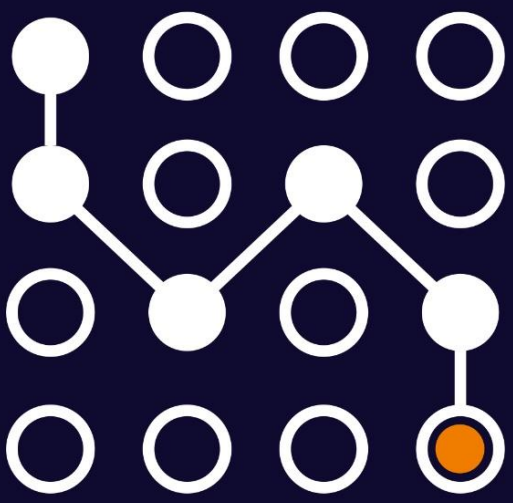
RIIO-GT1 Annual Report **2019-20**



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Executive Summary

Output and incentive performance

National Grid Gas Transmission (NGGT) is delivering well across all outputs and is on track to meet all its main output targets.

Incentive performance is broadly in line with previous years.

Total expenditure performance

NGGT forecasts an overspend of £265 million against its total allowance of £2,956 million for RIIO-GT1. The majority of the overspend is the result of costs associated with improving the condition of assets on the National Transmission System.

Return on Regulatory Equity

Return on Regulatory Equity is calculated at 6.7% across RIIO-GT1.

Customer bill impact

It is estimated that the average GB customer in 2020-21 will pay £10.06 in real 2019-20 price terms for gas transmission costs on their energy bill.

This report gives an overview of National Grid Gas Transmission's (NGGT) output delivery and financial performance over RIIO-GT1 (see "Background to RIIO-GT1" below for more information). It summarises NGGT's performance to date, since the start of the RIIO-GT1 price control in April 2013, and forecasts for the remainder of RIIO-GT1 which will come to an end in March 2021. All financial values are in 2019-20 prices unless otherwise stated.

Background to RIIO-GT1

NGGT is the sole owner and operator of the gas National Transmission System (NTS) in Great Britain. Their operation is split between the transmission owner (TO) and system operator (SO). The TO has responsibility for ensuring the reliable and secure delivery of gas across Great Britain. The SO has overall responsibility for ensuring that the supply and demand of gas are balanced within NTS.

We regulate NGGT through periodic price controls. The price controls we set determine the amount of revenue NGGT can earn from users and stipulate the level of performance we expect NGGT to deliver.

To set our price controls we use the RIIO (Revenue = Incentives + Innovation + Outputs) framework. The current price control for Gas Transmission, RIIO-GT1, started in April 2013 and lasts for a period of eight 8 years until March 2021.

The information provided in this report is for 2019-20, the seventh year of RIIO-GT1.

Output and Incentive Performance

Output Performance

NGGT must deliver a range of outputs during RIIO-GT1 which are grouped into five output categories shown below. NGGT's performance for each output category is also shown.

Reliability and availability	Environment	Safety	Customer satisfaction	Connections
Minor issues: see below	Minor issues: see below	No issues	Minor issues: see below	No issues

Overall NGGT is on track to meet all its output targets across RIIO-GT1. However, there have been some issues compared to the previous years' performance in three of the five output categories. Those three categories are:

- Reliability and availability
- Environment
- Customer Satisfaction

Further information on the issues arising under each category is provided below

Reliability and availability
• System issues, including planned outages, impacted a minority of auctions.

Entry and Exit capacity give shippers an entitlement to flow gas onto and off the NTS. A shipper needs to buy one unit of capacity to flow one unit of energy and this is known as the 'ticket to ride' principle. Units for both capacity and energy are in kWh/day.

National Grid Gas are obliged to meet the shipper's entitlements where they have secured the capacity. This year there was a minor issue with meeting this obligation, where system issues and planned outages affected a small number of auctions during 2019-20.

NGGT is mitigating against future impacts to meet their obligations by improving its overall planning processes. For example, NGGT aim to reduce constraint management costs by improving the assessment process for maintenance planning, for both planned maintenance and ad-hoc maintenance as a result of unforeseen events.

Environment

- Delays on the projects for compressor stations have resulted in rescheduling outages
- Exceeded target amount and cost of energy used to run the network

Gas compressor stations are an integral part of the NTS and helps move gas around different parts of the network. This year, delays on emissions improvement projects, that are driven by the Integrated Pollution Prevention and Control legislation (IPPC), have resulted in rescheduling of outages for the Peterborough and Huntingdon Compressor Stations. In addition, the targets for the amount of energy used to run the network were marginally exceeded.

Customer satisfaction

- Missed target for the Stakeholder Engagement element of output.

Under RIIO-GT1, the Customer Satisfaction Output[1] is made up of Customer Survey Score, Stakeholder Survey Score and Stakeholder Engagement Reward. This year, NGGT missed its Stakeholder Engagement Reward minimum score and did not achieve a rewards.[2] However it has met its Customer and Stakeholder Survey Score targets and achieved a £4.65m reward.

[1] https://www.ofgem.gov.uk/data-portal/customer-satisfaction-network-owners-electricity-transmission-riio-t1
[2] https://www.ofgem.gov.uk/system/files/docs/2020/11/2019-20_decision_letter_sei.pdf

Incentive performance

To imitate the commercial pressures that would normally apply to a company in a fully competitive market, NGGT is subject to a number of performance incentives on both its Transmission Operator (TO) and System Operator (SO) parts of its business .
During 2019-20, the transmission owner (TO) earned £4.65 million (52%) out of a possible £8.90 million; the system operator (SO) earned £22.02 million (44%) out of a possible £49.70 million. This is a slight improvement upon previous years' performance.

	Earned[1]	CAP
Transmission Owner		
Stakeholder satisfaction output	£4.65	£6.96m
comprises:		
- stakeholder engagement	£0.0m	£3.47m
- customer and stakeholder satisfaction survey	*£4.65m*	*£5.43m*

[1] There is a 2 year lag for earned incentives so 2019-20 performance will be paid in 2021-22

	Earned[1]	CAP
System Operator		
Capacity constraint management	£12.04m	£20.00m
Demand forecasting	£1.57m	£20.00m
National Transmission System (NTS) shrinkage	£7.0m	£7.00m
Residual balancing	£0.94m	£2.00m
Maintenance	£0.47m	£1.50m
Greenhouse gas emissions[2]	£0.0m	£0.00m
Total SO incentives	**£22.02m**	**£50.50m**

[1] There is a 2-year lag for earned incentives so 2019-20 performance will be paid in 2020-21
[2] Penalty only. 2019-20 allowance was 2,897 tonnes with 2,500 tonnes emitted. Penalty over allowance is £1,487 per tonne.

The majority of the SO's incentive earnings were driven by improvements in capacity constraint management, NTS shrinkage and demand forecasting. More information on those incentives is provided below.

Capacity constraint management

Sources of gas and the points of demand for gas are not always located in the same place. This can lead to capacity bottlenecks on the NTS. Gas that is restricted in its ability to flow between two points is known as a constraint.

The capacity constraint management incentive encourages NGGT to reduce constraints. NGGT achieves this by working towards efficient system operation, optimisation of

strategies, and taking a balanced approach to risk versus reward decisions, all of which help optimise their constraint management actions.

NTS shrinkage

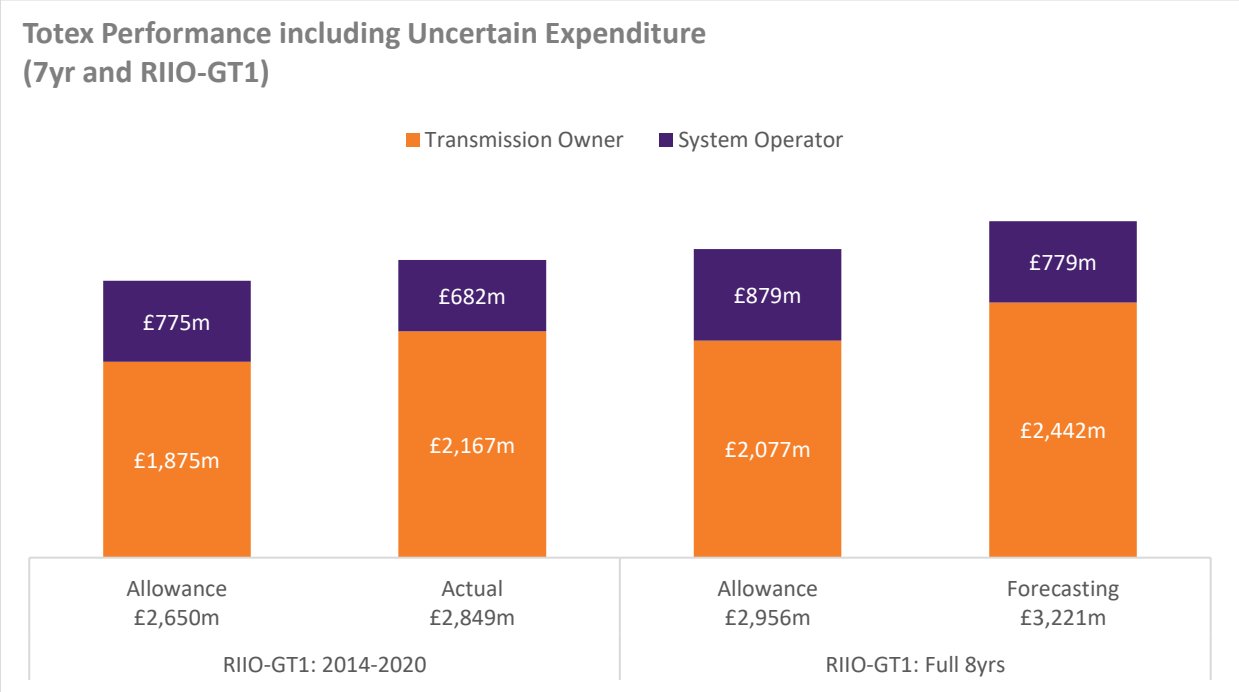
NTS shrinkage energy is a product of the daily operation of the NTS. It is categorised as energy used to run compressors (Compressor Fuel Usage), energy that does not satisfy the Calorific Value standards (Calorific Value Shrinkage), and energy that is lost or unaccounted for (Unaccounted for Gas). NGGT is the NTS provider of shrinkage energy and is responsible for managing the end-to-end service of forecasting, accounting for, procuring, and supplying energy to satisfy the daily NTS shrinkage components. The shrinkage scheme incentivises NGGT to minimise the cost of shrinkage energy associated with NTS operation.

Demand Forecasting

National Grid Gas published the national demand forecasts for day ahead (D-1) and for two to five days ahead (D-2 to D-5) as tools to assist the UK gas industry in ensuring the economic balancing of gas supply and demand. The provision of accurate forecasts helps ensure efficient operation from both a physical and commercial perspective, reducing operating costs that directly impact on end consumers gas bills.

Total Expenditure (Totex) Performance

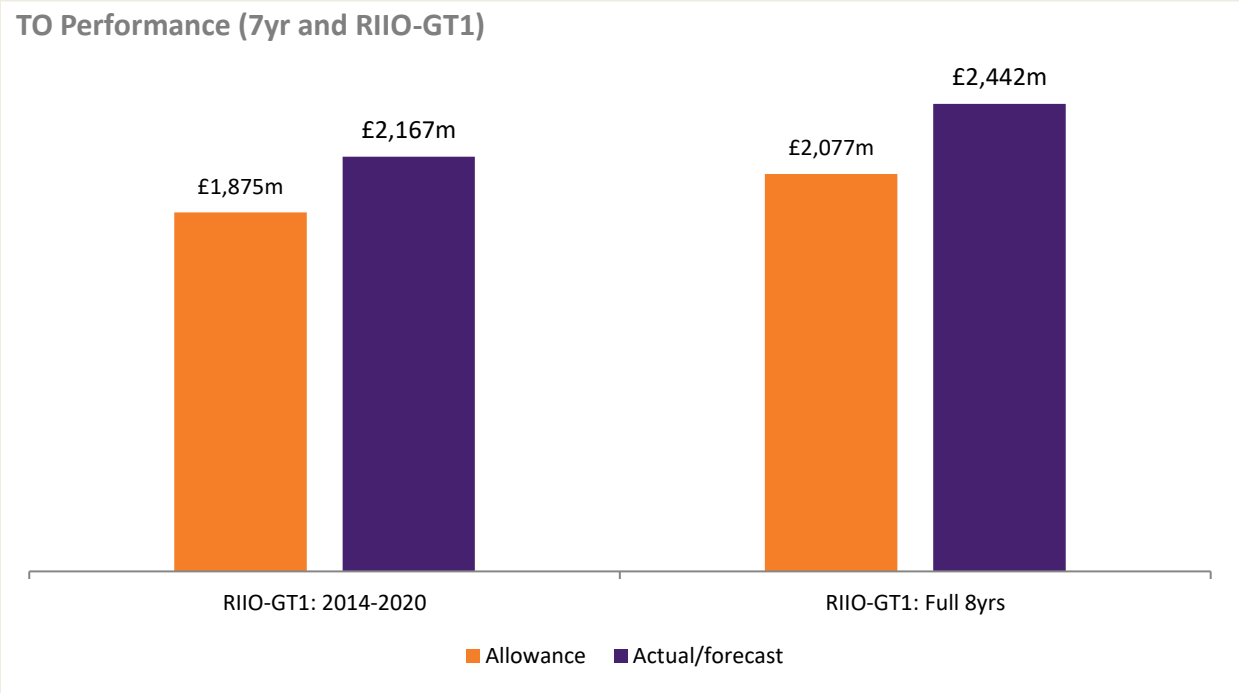
Totex



Totex comprises both capital expenditures driven by the TO and operating expenditure driven by the SO. The approach applied under RIIO-GT1 is to set price controls based on an up-front view of efficient totex. It aims to incentivise companies to deliver solutions at the lowest total cost and to choose the most efficient solution regardless of whether it is a capital expenditure or an operating expenditure solution.

NGGT is the only network company under RIIO-T1 framework to be forecasting a totex overspend, of £265 million (9%) against its full allowance of £3,221 million for RIIO-GT1. The majority of this overspend is driven by the TO and is associated with the cost of improving asset health because of the network being in a poorer condition than forecast at the start of RIIO-GT1.

Transmission Owner (TO)



The TO is forecasting an overspend of £365 million (17.6%) against its allowance of £2,077 million for RIIO-GT1.

There is a reduction in allowances compared to 2018-19 because of the reduction in additional IED allowances forecast, from £53m to £9m for the Hatton and St Fergus compressor emissions work under the IPCC following Ofgem's decision in November 2019 to not to approve the need case for St Fergus.

However overall, NGGT are still forecasting an overspend against allowances and this is driven by the on-going costs associated with improving asset health.

Asset Health over RIIO-GT1

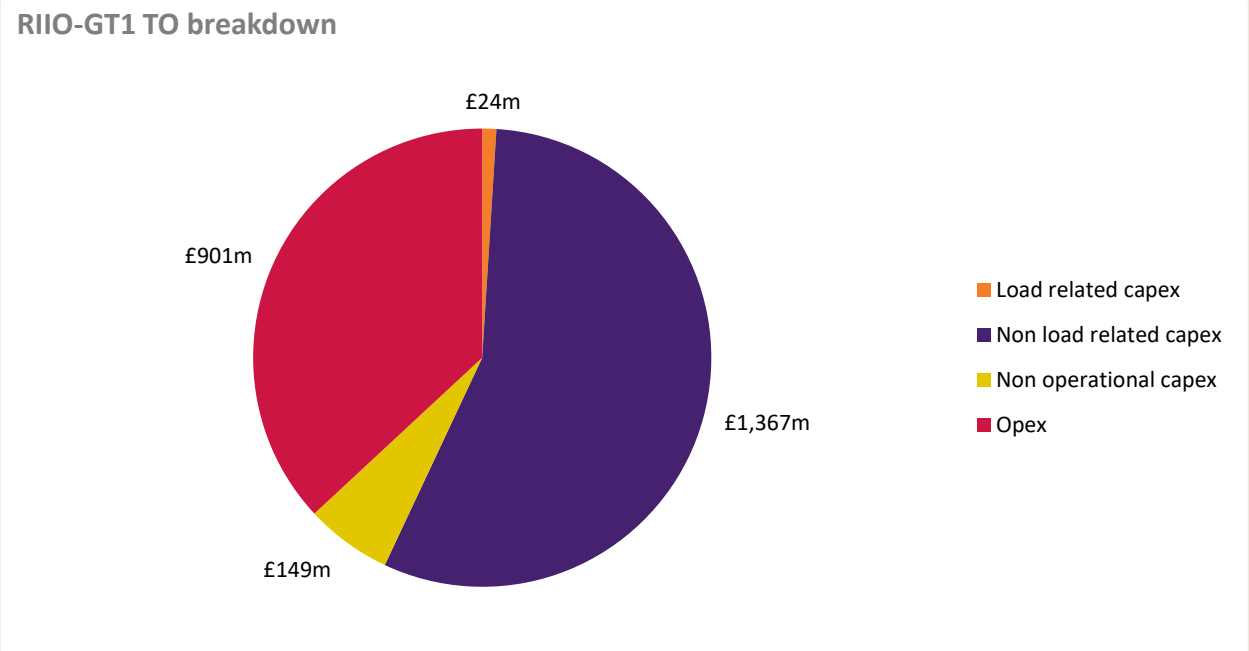
NGGT forecast spending is being driven by the need to address the health of its assets. NGGT forecasts spending £711 million on asset health over RIIO-GT1. It is forecast that £381 million (54%) is primarily attributable to four asset types as shown below.

Valves	Pipe coating	Pipe supports	Gas: generator (including gas quality measurement devices)
£150m	£119m	£34m	£78m

Pipes: 80% £303m

Compressor: 20% (£78m)

RIIO-GT1 TO: £2,442m breakdown of cost categories.



Load related capital expenditure (LRE)

Investment required to connect gas loads coming to, and off, the NTS from customers and to ensure that the NTS can cope with the changing pattern of flows on the network.

Non load related capital expenditure (NLRE)

Principally comprised of expenditure required to replace or refurbish existing primary (e.g. pipelines, compressor sites, entry/exit points, etc) and secondary (e.g. gas generators, exhausts, pig traps, isolation valves, etc) assets on the network. It also includes expenditure relating to areas such as the reduction of direct emissions from the operation of the NTS, network resilience, and physical security.

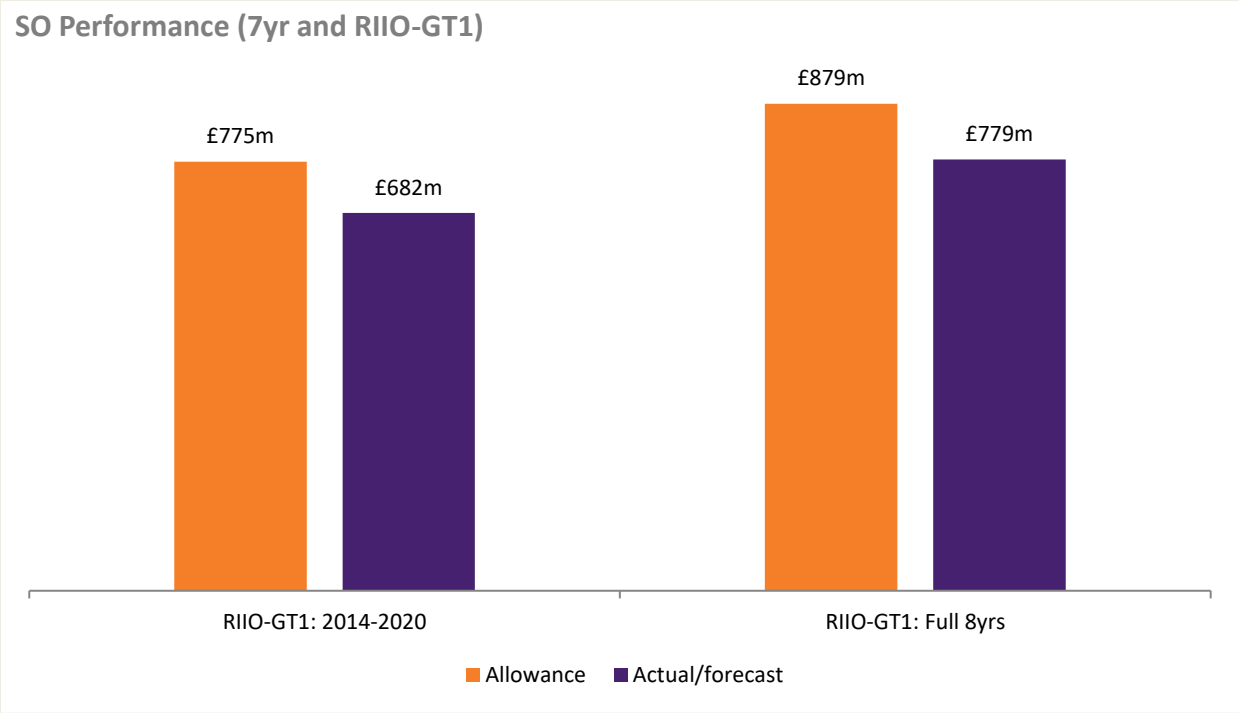
Non-operational capital expenditure

Capital expenditure that is not covered by LRE and NLRE. Expenditure on IT is the main contributor to this type of expenditure but it is also made up of smaller costs associated with vehicles, office refurbishment, and plant, tools and equipment (e.g. gas testing equipment, calibration equipment, and tooling).

Operating expenditure (OPEX)

The ongoing cost of running the business. Business support costs are the main contributor and comprise of expenses including shared group costs (e.g. group management, finance, regulation, etc) and support services; for example, various engineering services. Smaller costs under this type of expenditure relate to areas including planned inspections, maintenance, and fault diagnosis.

System Operator (SO)



The SO is forecasting an underspend of £100 million (11.4%) against its allowance of £879 million for RIIO-GT1.

This has been primarily driven by lower forecast spend on spend for Xoserve (the Central Data Service Provider for Britain's gas market) and telemetry. The lower Xoserve investment is driven by a change in strategy for the suite of web applications

for managing the transportation of gas through the NTS known as Gemini and a lower level of EU driven Gemini change work.

Also, the underspend to allowances for operational costs is largely driven by a higher proportion of Xoserve allowances being allocated to direct Opex following the outcome of the review of agency costs.

Totex Incentive Mechanism (TIM)

TIM is designed to incentivise NGGT to outperform its totex allowance. Any underspend or overspend compared to totex allowance is shared between NGGT and consumers. NGGT is exposed to 44.36% of any overspend and the consumer is exposed to the remaining 55.64% (subject to tax).

	Transmission Owner	System Operator	Total
Total allowed expenditure	£213.79m	£112.35m	£326.14 m
Actual expenditure	£309.00m	£101.57m	£410.57 m
Overspend (underspend)	**£95.20m**	**-£10.77m**	**£84.43 m**
Totex incentive mechanism (company share)	44.36%	44.36%	44.36%
Allowed expenditure after sharing	£266.76m	£106.35m	£373.12 m

Innovation

NGGT undertook 31 projects undert the Network Innovation Allowance (NIA)[3] during 2019-20 and spent £4.75m of the £4.87m allowance. Of this spend, £668k (14.1%) was internal operational expenditure.

Over the past 12 months, the roadmap to decarbonisation for Gas Transmission has accelerated from a small collection of projects looking at the feasibility of network transition, to the formation of a pathway of projects based around NGGT's Network Innovation Competition (NIC) submission[4] – FutureGrid.

These small projects include several desktop studies into the regional adoption of hydrogen such as:

- Project Cavendish, focusing on production, storage, and supply of hydrogen to the London area.
- Aberdeen Vision, working with SGN to understand how the terminal at St Fergus in Scotland could supply hydrogen into the NTS.
- Under the banner of HyNTS, research projects include the 'deblending' of hydrogen out of a mix of natural gas and physical studies into the impact of hydrogen on the steel pipework.
- Study into possible locations where a hydrogen trial could be completed on the NTS.

FutureGrid provides an innovative testing facility that allows the design, testing, and demonstration of hydrogen within the NTS to facilitate live hydrogen transportation and achieve Net Zero by 2050.

The NIC project will use decommissioned NTS assets to build a complete transmission scale test facility that allows the testing of entry and exit points, filters, valves, meters, and pre-heaters with varying blends up to 100% hydrogen.

[3] https://www.ofgem.gov.uk/electricity/transmission-networks/network-innovation
[4] https://www.ofgem.gov.uk/network-regulation-riio-model/current-network-price-controls-riio-1/network-innovation/gas-network-innovation-competition

As part of the FutureGrid roadmap, additional pre-work is required. This will define the principles and specification of the test facility so that the facility can be built, and testing started, in a timely manner.

In Dec 2020 NGGT submitted the HyNTS FutureGrid Phase 1 as part of the NIC process.[5]

Further information on Ofgem's approach to network innovation can be found on our website.[6]

Return on Regulatory Equity (RoRE)

We assess the financial performance of network companies using the RoRE measure based on a notionally geared company (i.e. a company with a capital structure of 62.5% debt and 37.5% equity). We have calculated NGGT's RoRE during RIIO-GT1 to be 6.7%.

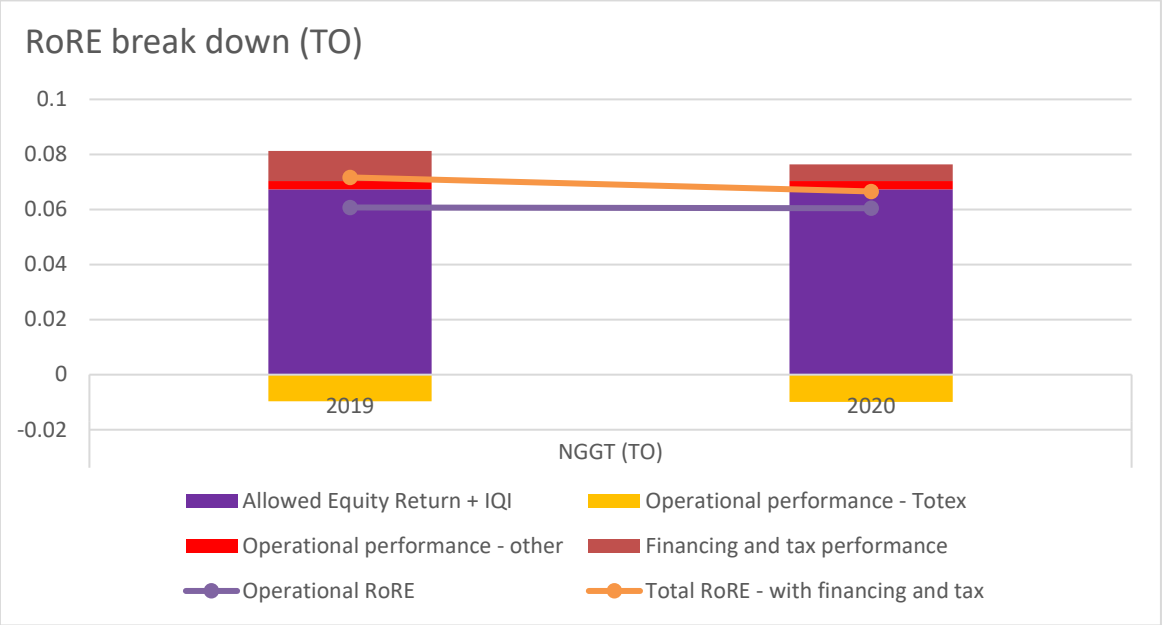
RoRE is made up of several components:

- The allowed equity return, which is the return on equity that a company would earn if their expenditure and allowance matched7 and there were no other incentives.
- Operational performance (totex), which compares the totex allowance to a company's actual totex expenditure and any underspend or overspend is then shared between the company and consumer through the totex incentive mechanism.
- Operational performance (other), which accounts for a company's overall incentive performance.

Putting these three component parts together produces operational RoRE. Financing and tax performance is finally added to produce total RoRE.

[5] https://www.ofgem.gov.uk/publications-and-updates/gas-nic-submission-hynts-futuregrid-phase-1-national-grid-gas-transmission
[6] https://www.ofgem.gov.uk/regulating-energy-networks/current-network-price-controls-riio-1/network-innovation
[7] Totex Incentive Mechanism would be £0.00. Assumption made that the Information Quality Incentive (IQI) would also be £0.00.

RoRE based on a notionally geared company



NGGT's RoRE is for TO performance only. Decisions made on financing and tax affect NGGT's actual RoRE and can cause it to change during RIIO-GT1.

RoRE breakdown

	RIIO-GT1: Full 8yrs
Notionally geared company	**6.7%**
NGGT's actual	5.9%

Notionally geared company	*Breakdown*
Allowed equity return (incl. IQI)	6.7%
Operational performance (totex and incentives)	-0.7%
Operational performance (other)	0.3%
Operational RoRE	**6.0%**
Financing and tax performance	0.6%
Total RoRE	**6.7%**

Accompanying this report is a regulatory financial performance annex that sets out our assessment of RIIO-1 network companies' regulatory financial performance. Our assessment is based on information the companies have provided using the regulatory financial performance reporting (RFPR) process.

Customer Bill Impact

Our tariff methodology provides an estimate of the overall cost of domestic energy bills. This includes estimates of the proportion of the overall cost of energy which is related to gas transmission. The methodology uses an average gas demand applied uniformly across all regions and over time.

Our latest bill assessment using this methodology estimates that the average GB customer in 2020-21 will pay £10.06 per annum in real 2019-20 price terms for gas transmission costs. Charges differ depending on the region in which a customer resides, ranging from £4.33 in Scotland to £20.50 in South Western England.

COVID-19

This report covers the period up to 31 March 2020 and the full impacts of the Covid-19 pandemic were yet to be experienced. We do however acknowledge the collaborative arrangements that were put in place from March 2020 across all the energy networks to tackle the pandemic. These arrangements helped to maintain security of supply and high levels of system reliability, deliver essential services to consumers, while also ensuring safety for all.

This report highlights National Grid Gas Transmission's key performance results for 2019-20. If you require additional performance data please refer to the data file published with this report.