



Making a positive difference
for energy consumers

Network Performance Summary 2018-19



RIIO-GT1

© Crown copyright 2019

The text of this document may be reproduced (excluding logos) under and in accordance with the terms of the [**Open Government Licence**](#).

Without prejudice to the generality of the terms of the Open Government Licence the material that is reproduced must be acknowledged as Crown copyright and the document title of this document must be specified in that acknowledgement.

Any enquiries related to the text of this publication should be sent to Ofgem at:

10 South Colonnade, Canary Wharf, London, E14 4PU. Alternatively, please call Ofgem on 0207 901 7000.

This publication is available at [**Ofgem**](#). Any enquiries regarding the use and re-use of this information resource should be sent to: psi@nationalarchives.gsi.gov.uk

Executive Summary

Output and incentive performance

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

Incentive performance is broadly in line with previous years.

Total expenditure performance

NGGT forecasts an overspend of £290 million against its total allowance of £2,922 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 7.2% across RIIO-GT1.

Customer bill impact

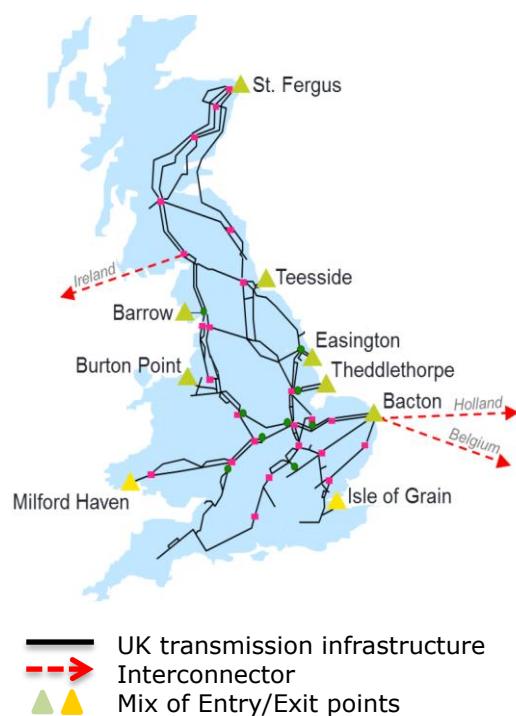
It is estimated that the average GB customer in 2019-20 will pay £9.75 in real 2018-19 price terms for gas transmission costs on their energy bill.

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 RIIO-GT1 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 2018-19 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, RIIO-1, started in April 2013 and lasts for a period of eight 8 years until March 2021.

The information provided in this report is for 2018-19, the sixth year of RIIO-1.

Output and Incentive 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	No issues	No issues	No issues	No issues

Overall, NGGT is performing well against all outputs and is on track to meet all of its output targets across RIIO-GT1. This includes meeting targets to maintain the health of its assets and ensuring its compressor fleet complies with environmental legislation; 2018-19 was also the first year during RIIO-GT1 that NGGT achieved the greenhouse gas target within the Environment output category.

There have been some minor issues with NGGT's performance under the 'Reliability and availability' output category. Further information on those issues is presented below.

Reliability and availability
<ul style="list-style-type: none"> System issues and planned outages affected a minority of auctions. Gas demand forecasting affected by evolving gas usage variability.

There were system issues and planned outages that affected a minority of auctions during 2018-19. NGGT is already mitigating against future occurrences by improving its overall planning processes.

There was also an issue with NGGT's gas demand forecasting model. Gas usage is exposed to continued variability (for example, new sources of electricity generation from greater renewables availability has had an impact on typical gas power requirements). That has resulted in increased gas demand variability and has impacted NGGT's ability to accurately forecast gas demand. This is significant as demand forecasts are used to ensure there is an

economic balance of gas supply and demand. Where this is achieved, it results in reduced operating costs for NGGT which are passed on to consumers in order to reduce the cost of their gas bills. NGGT has taken steps to improve the accuracy of both their demand and supply forecasting models.

Incentive performance

During 2018-19, the transmission owner (TO) earned £4.2 million (41%) out of a possible £10.3 million; the system operator (SO) earned £19.2 million (39%) out of a possible £49.7 million. Both of these results are broadly in line with previous years' performance.

	Earned¹	CAP
<i>Transmission Owner</i>		
Stakeholder satisfaction output	£4.2m	£10.3m
<i>comprises:</i>		
- stakeholder engagement	£0.6m	£3.4m
- customer and stakeholder satisfaction survey	£3.6m	£6.9m

¹ There is a 2 year lag for earned incentives so 2018-19 performance will be paid in 2020-21

	Earned¹	CAP
<i>System Operator</i>		
Capacity constraint management	£11.3m	£20.0m
Demand forecasting	-£0.7m	£20.0m
National Transmission System (NTS) shrinkage	£7.0m	£7.0m
Residual balancing	£1.0m	£2.0m
Maintenance	£0.7m	£0.7m
Greenhouse gas emissions ²	£0.0m	£0.0m
Total incentives	£19.2m	£49.7m

¹ There is a 2 year lag for earned incentives so 2018-19 performance will be paid in 2020-21

² Penalty only. 2018-19 allowance was 2,897 tonnes. Penalty over allowance is £1,447 per tonne.

The majority of the SO's incentive earnings are from two incentives: capacity constraint management and NTS shrinkage. 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.

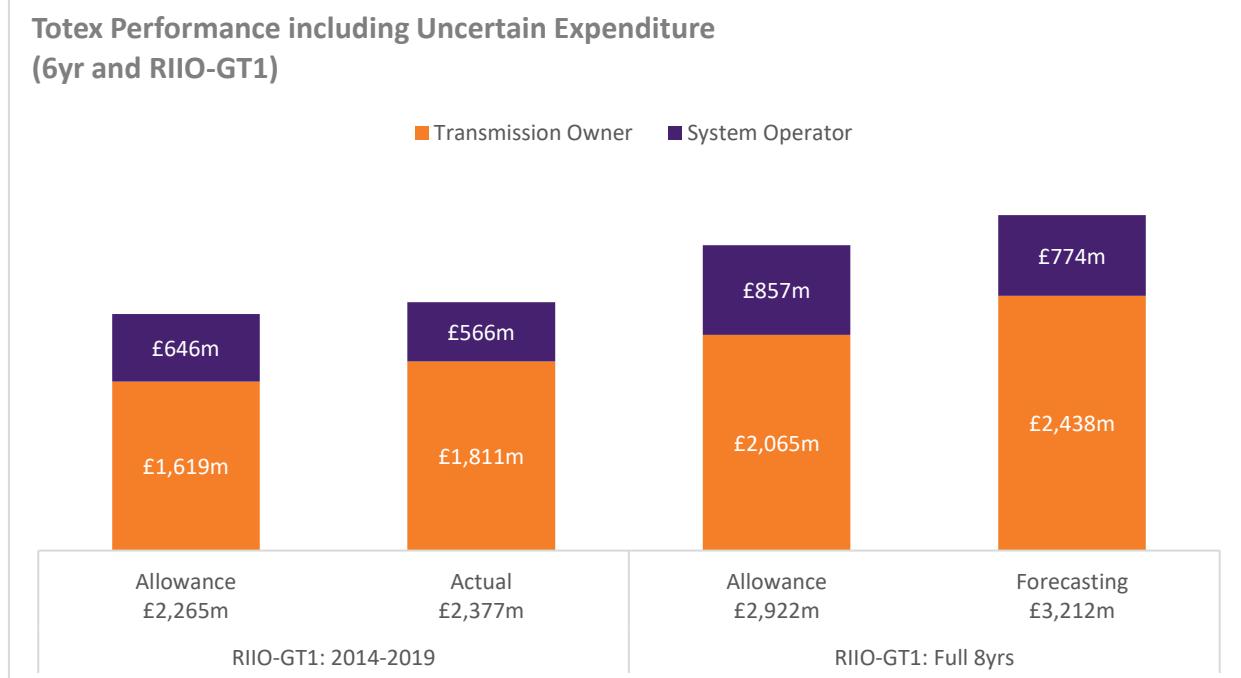
The capacity constraint management incentive encourages NGGT to reduce constraints. NGGT achieves this by working towards efficient system operation, optimisation of strategies, and taking a balanced approach to risk versus reward decisions, all of which help optimise their constraint management actions.

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.

Total Expenditure (totex) Performance

Totex



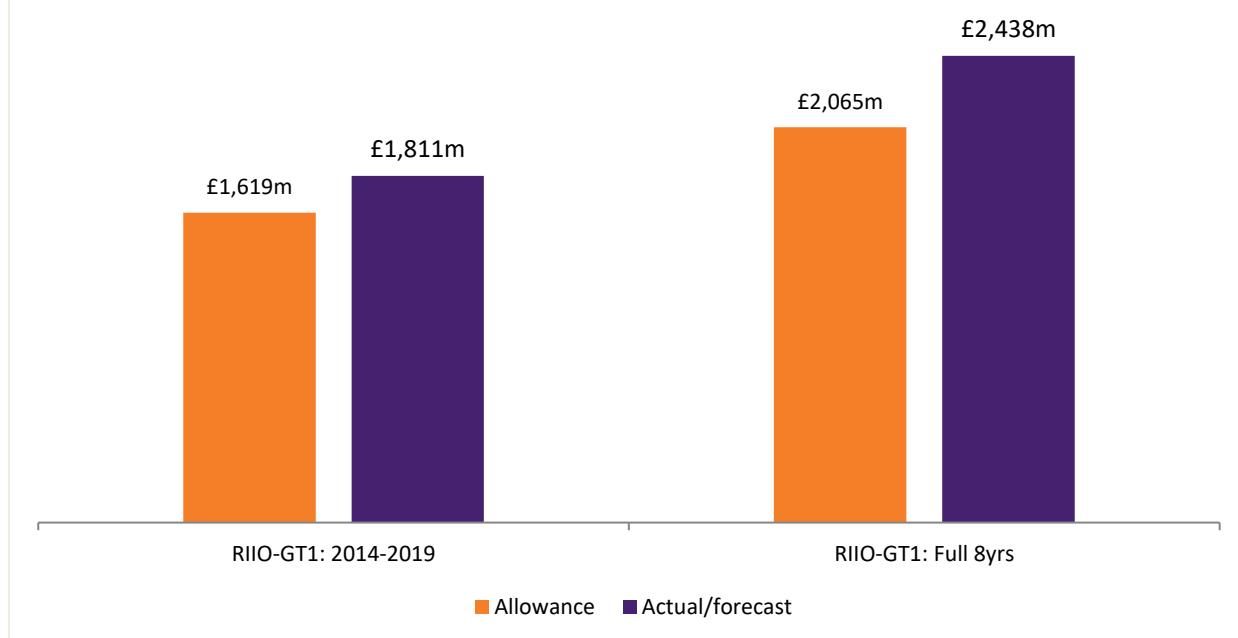
Totex comprises of both capital expenditure driven by the TO and operating expenditure driven by the SO. The approach applied under RIIO-GT1 is to set price controls based on an up-front view of efficient totex. It aims to incentivise companies to deliver solutions at the lowest total cost and to choose 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-GT1 to be forecasting a totex overspend; £290 million (9.9%) against its full allowance of £2,922 million for RIIO-GT1. The majority of this overspend is driven by the TO and is associated with the cost of improving asset health

as a consequence of the network being in worse condition than originally forecast at the start of RIIO-GT1.

Transmission Owner (TO)

TO Performance (6yr and RIIO-GT1)



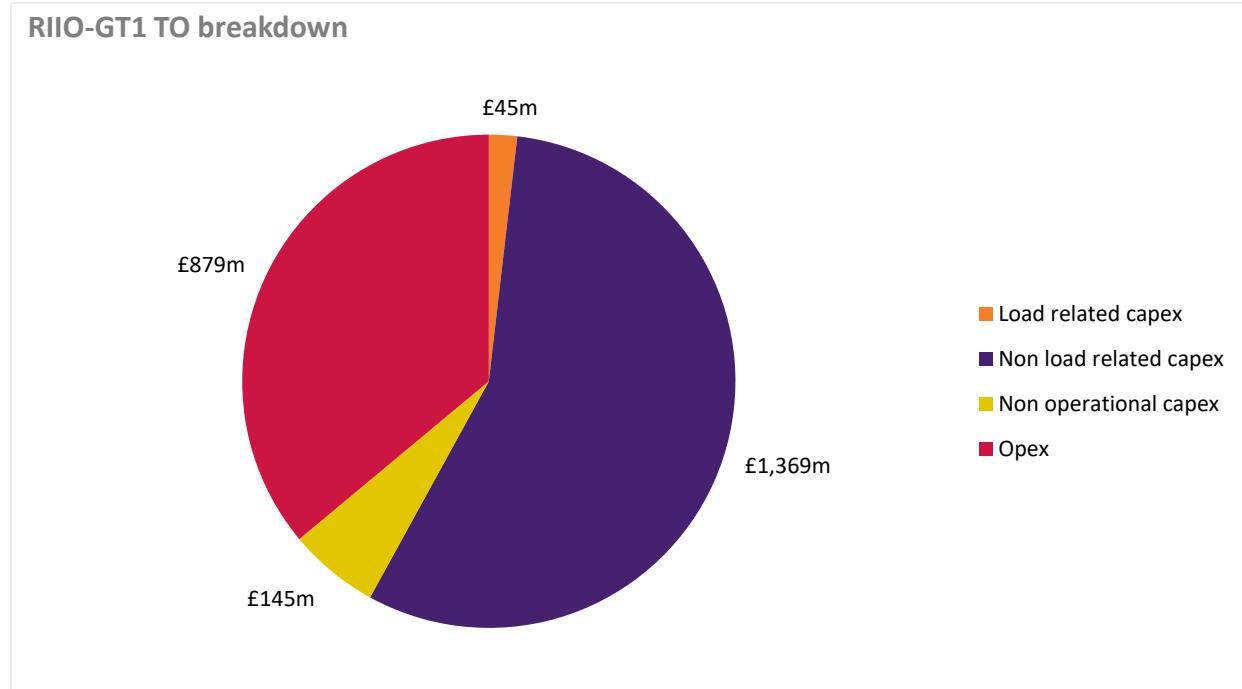
The TO is forecasting an overspend of £372 million (18%) against its allowance of £2,065 million for RIIO-GT1; £300 million (81%) of this is driven by costs associated with improving asset health.

Asset Health over RIIO-GT1

NGGT forecasts spending £693 million on asset health over RIIO-GT1. It is forecast that £362 million (52%) is primarily attributable to four top drivers as shown below.

Valves	Pipe coating	Pipe supports	Gas: analyser/generator		
£142m	£109m	£36m	£75m		
Pipes: 80% (£287m)			Compressor: 20% (£75m)		

RIIO-GT1 TO: £2,438m breakdown



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 is able to 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 contributer 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).

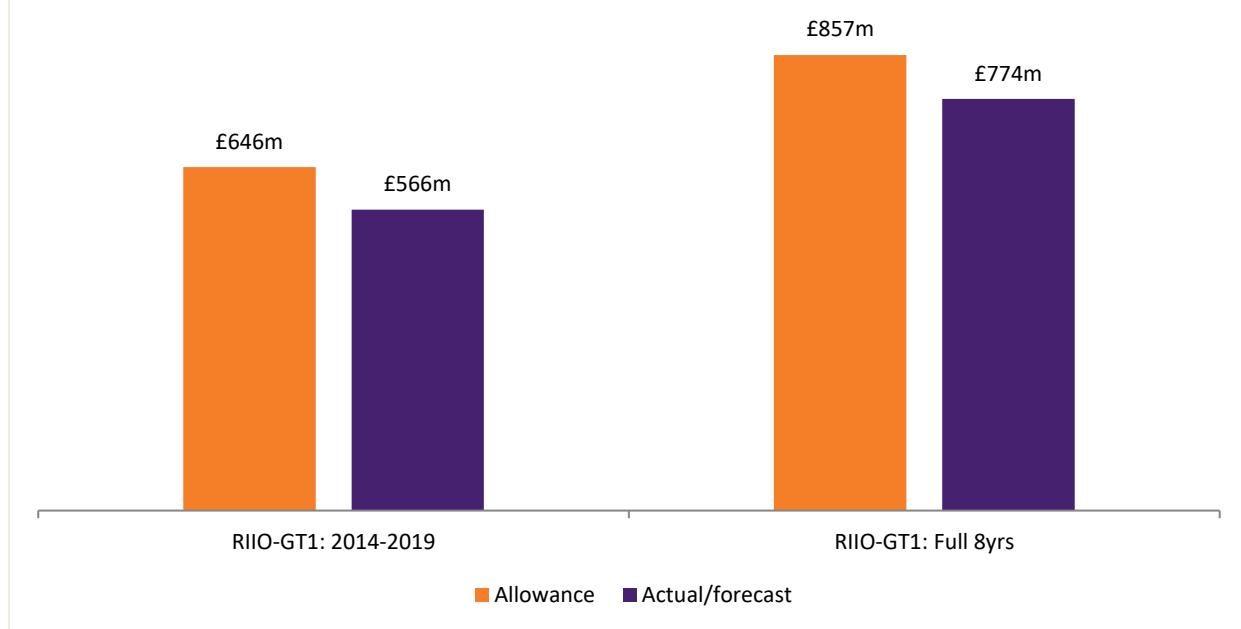
Operating expenditure (OPEX)

The ongoing cost of running the business. Business support costs are the main contributer 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)

SO Performance (6yr and RIIO-GT1)



The SO is forecasting an underspend of £83 million (9.7%) against its allowance of £857 million for RIIO-GT1. The main drivers are efficiency gains, including a corporate restructuring programme. We will continue to closely monitor NGGT's forecasting.

Totex Incentive Mechanism (TIM)

2018-19	TO	SO	Total
Total allowed expenditure	£272m	£108m	£380m
Actual expenditure	£384m	£94m	£478m
Overspend (underspend)	£112m	(£14m)	£98m
Totex incentive mechanism (company share)	44.36%	44.36%	44.36%
Allowed expenditure after sharing	£334m	£100m	£435m

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% and the consumer is exposed to the remaining 55.64% (subject to tax).

Innovation

NGGT spent £4.7 million of their £4.8 million annual allowance for innovation in 2018-19. £2.9 million was attributable to expenditure on the Network Innovation Competition (NIC). NGGT's NIC expenditure for 2018-19 related to two projects: Project GRAID (Gas Robotic Agile Inspection Device) and Project CLoCC (Customer Low Cost Connections).

During 2018-19 both Project GRAID and Project CLoCC concluded and delivered against the aims and objectives they set out to achieve. Project GRAID spent a total of £6.5 million during its lifecycle. NGGT designed and developed the remotely operable robot that can be inserted into live high pressure 100 bar(g) mild steel pipework systems to undertake both visual and physical inspection of the otherwise inaccessible buried sections of the NTS. Project CLoCC spent a total of £4.5 million during its lifecycle. NGGT simplified the process of connecting a new generation of gas users to the NTS and has opened it up to a wider range of gas sources.

NGGT undertook thirty six Network Innovation Allowance (NIA) projects in 2018-19. One of these projects was 'Hydrogen in the NTS'. It falls under NGGT's HyNTS programme of hydrogen work. The project is assessing the impact hydrogen could have on the NTS considering the pipeline, associated equipment (e.g. compressors, valves, pressure reduction and pre-heating equipment), and NGGT's directly connected customers. The project is exploring whether NGGT's equipment becomes more brittle, whether cracks and faults grow faster, and whether welding requirements differ when hydrogen flows through it. NGGT is also reviewing all UK and European standards relating to hydrogen, noting which standards are best suited for transportation on the NTS and where any gaps lie.

Reopeners

At the start of RIIO-GT1 we set the baseline totex allowances for NGGT. These can be adjusted during RIIO-GT1 for some uncertain costs during two specified 'reopener' windows: the first was in May 2015 and the second was in May 2018. During May's 2018 reopener we received submissions from NGGT for additional funding. After consultation and assessment, we reduced NGGT's allowance by £208 million. Further information on the May 2018¹ reopeners can be found on Ofgem's website.

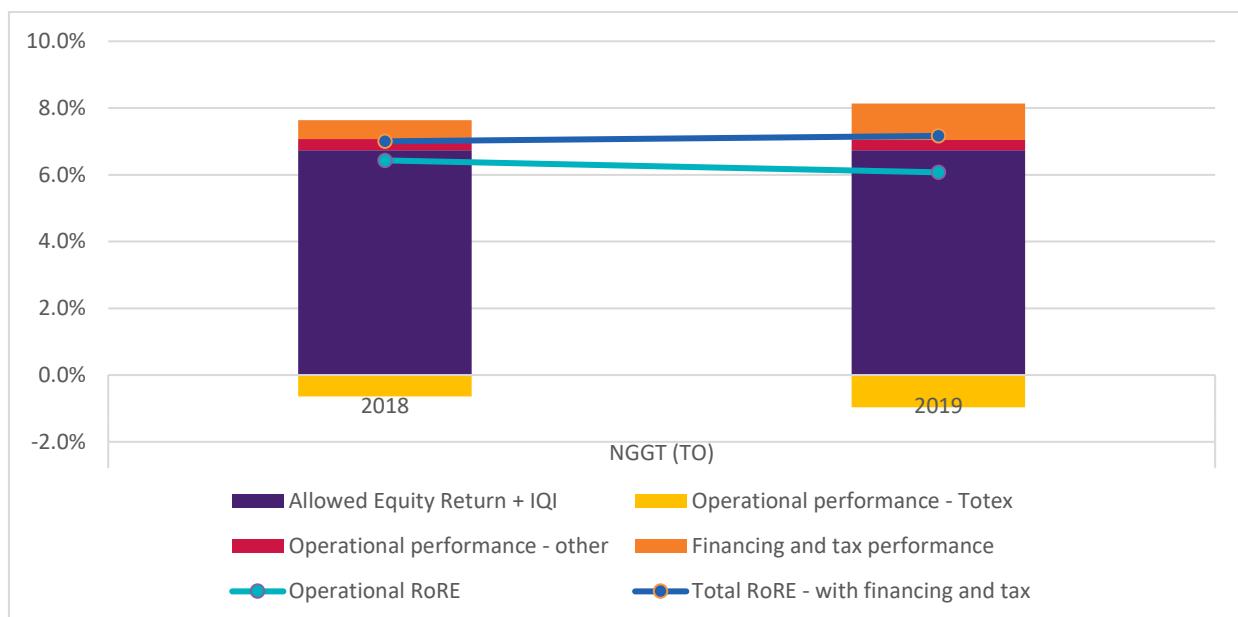
¹ [Decision on RIIO-1 Price Control Reopeners \(May 2018\)](#)

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 7.2%.

RoRE is made up of several components. The allowed equity return is the return on equity that a company would earn if their expenditure and allowance matched² and there were no other incentives. Operational performance (totex) 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) 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.

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 the course of RIIO-GT1.

² Totex Incentive Mechanism would be £0.00. Assumption made that the Information Quality Incentive (IQI) would also be £0.00.

RoRE breakdown

	RIIO-GT1: Full 8yrs
Notionally geared company	7.2%
NGGT's actual	6.3%

	<i>Breakdown</i>
<i>Notionally geared company</i>	
Allowed equity return (incl. IQI)	6.7%
Operational performance (totex and incentives)	-0.6%
Operational RoRE	6.1%
Financing and tax performance	1.1%
Total RoRE	7.2%

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 2019-20 will pay £9.75 per annum in real 2018-19 price terms for gas transmission costs. Charges differ depending on the region in which a customer resides, ranging from £4.20 in Scotland to £15.57 in Western England.

This performance summary is an abbreviated version compared to previous years' annual reports. It highlights National Grid Gas Transmission's key performance results for 2018-19. If you require additional performance data please refer to the data file published with this report.