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Making a positive difference
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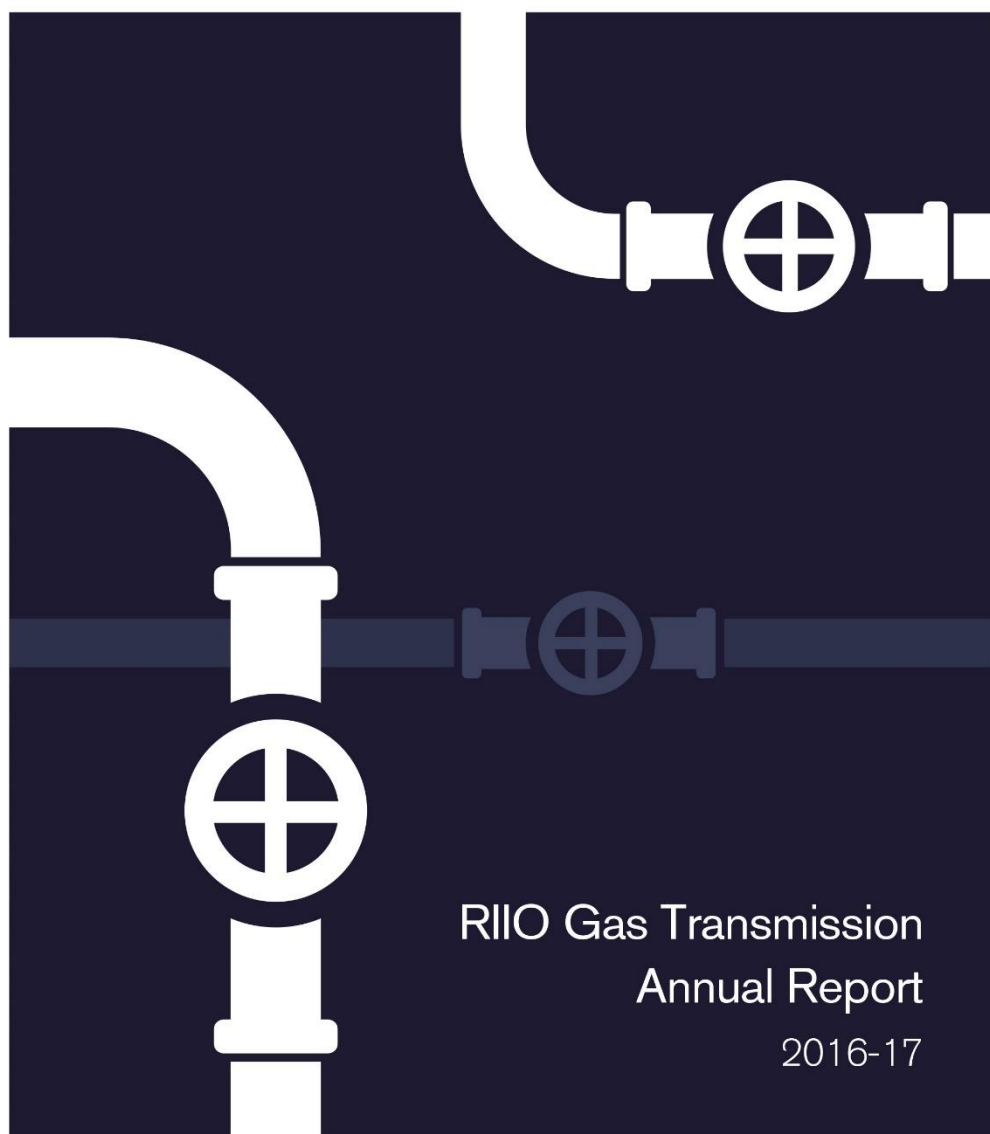
RIIO Gas Transmission
Annual Report
2016-17

Associated documents

Reports on NGGT performance during RIIO-T1
RIIO-GT1 Annual Report 2015-16
RIIO-GT1 Annual Report 2014-15
RIIO-GT1 Annual Report 2013-14
RIIO-T1 Performance Data
National Grid Gas Transmission Performance Summary

Price control documents
RIIO-T1: Final Proposals for NGGT and NGET - Overview
RIIO-T1: Final Proposals for NGGT and NGET – Outputs, incentives and innovation
RIIO-T1: Final Proposals for NGGT and NGET – Cost assessment and uncertainty
RIIO-T1: Final Proposals for NGGT and NGET - Finance
GT1 Price Control Financial Handbook

RIIO annual reports
RIIO-GD1 Annual Report 2016-17
RIIO-ED1 Annual Report 2016-17
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Executive Summary

The current price control for National Grid Gas Transmission (NGGT) under the RIIO framework runs from 1 April 2013 to 31 March 2021. In RIIO, the focus is on outputs, incentives and innovation as well as total expenditure (Totex).

This report outlines the performance so far of both the transmission owner (TO) and system operator (SO) functions of NGGT. It also outlines Totex forecasts for the whole period.

Output performance and drivers

NGGT has met most of its annual output targets except for two. Under the environmental output, NGGT missed its greenhouse gas emissions target. This was due, in part, to higher volumes of gas arriving at the St Fergus gas terminal which caused the increased usage of its compressor fleet. NGGT was penalised £1 million under the greenhouse gas emissions incentive scheme for missing this target. NGGT also missed a target under its reliability and availability output. NGGT has an obligation under the European Network Code to run the daily capacity auctions. During 2016-17, IT system issues prevented a small number of these auctions from running. In each case the relevant capacity was made available at the next auction.

NGGT has improved its customer satisfaction survey and stakeholder engagement survey scores compared to last year.

NGGT is on track to meet all of its eight-year outputs which includes meeting targets to maintain the health of its assets and ensuring its compressor fleet complies with environmental legislation.

Financial performance and drivers

We present the financial performance of network companies using the Return on Regulatory Equity (RoRE) measure. We have calculated NGGT's RoRE during RIIO-T1 to be 7.5%. This figure is for TO and SO combined, and is based on current forecasts and future delivery of outputs and may change during the remaining years of RIIO-T1. The main factors affecting NGGT's RoRE figure are the forecast overspend of the TO business (reducing RoRE) and the incentive performance of the SO business (increasing RoRE).

NGGT (TO) is the only network company from the RIIO-T1 price control to be forecasting an overspend against allowances. It forecasts to overspend its full eight-year allowances (£2,256 million) by £295 million (13%). Much of this is driven by costs associated with improving asset health as the network is in a worse condition than previously forecast. Under the Totex Incentive Mechanism (TIM), NGGT pays 44% of any overspend, with consumers paying the remainder (subject to tax). However, NGGT (TO) is currently underspending against its forecast allowance (£976

million) by 2%. With a large proportion of its project costs scheduled towards the end of RIIO-T1, any cancellation or deferral of projects would reduce this overspend.

Customer bill impact

The output and financial performance of NGGT affects the allowed revenue that it can collect through customer bills. The performance in 2016-17 will impact NGGT's allowed revenue, and therefore customer bills, in 2018-19. We estimate that the average customer will pay £9 per annum in 2018-19 for gas transmission network costs.

1. Introduction and context

1.1.   This report reviews the activities of NGGT in 2016-17. It also covers its progress in the first four years of RIIO-T1 and its forecasts for the remainder of the eight-year period. It reviews NGGT's performance against the outputs we set and the costs incurred against its allowed revenue.

1.2.   NGGT is responsible for owning and operating Great Britain's gas transmission network, which consists of high-pressure long-distance gas pipelines and compressors. The network transports gas from offshore, storage and Liquified Natural Gas (LNG) facilities to local gas distribution networks. NGGT is the only gas TO in Great Britain.

1.3.   In addition to its TO responsibilities, NGGT is the designated gas SO. This means it is responsible for day-to-day system operation, including balancing of the system (ensuring gas supply is matched to demand) and managing any gas flow restrictions on the network.

1.4.   To ensure value for money for consumers, we regulate NGGT through periodic price controls that limit the amount by which costs can rise, and that stipulate levels of performance by NGGT.

1.5.   To set our price controls we use the RIIO (Revenue = Incentives + Innovation + Outputs) framework.

1.6.   We set the baseline revenues NGGT can earn at the start of the price control. Revenues can be adjusted during the price control for some uncertain costs during specified 'reopener' windows. NGGT decides how to spend its allowance to manage its network and deliver against the set outputs and incentives. There are incentive mechanisms to adjust revenues year-on-year depending on NGGT's performance against pre-set targets. There are outputs associated with baseline revenues that NGGT must deliver either on an annual or on an eight-year basis. The mid period review[1] (MPR), which we carried out during 2016-17, provides an opportunity to assess whether an output is no longer required, or if a new output is needed during the price control period.

1.7.   Using data and supporting information submitted to us by NGGT, this report reviews how NGGT is delivering against the financial and output requirements of the price control. We measure companies' financial performance by the RoRE. The RoRE is driven by NGGT's performance against its Totex allowances and incentives.

1.8.   This report provides the headlines on NGGT's performance to date. More detail is provided in the supplementary data file (Appendix 1).

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[1] https://www.ofgem.gov.uk/network-regulation-riio-model/riio-mid-period-review-riio-t1-and-gd1

1.9.   All costs in this report are provided in 2016-17 prices unless otherwise indicated.

2. Output performance and innovation

Chapter purpose
This chapter explains the performance of NGGT in meeting its output commitments over the RIIO-T1 period.

Output performance

2.1. NGGT must deliver a range of outputs during RIIO-T1. The outputs are grouped into the following categories which outline the key areas of delivery in order to facilitate a sustainable energy sector:

- Safety
- Reliability & availability
- Customer satisfaction
- Connections
- Environment

2.2. The outputs reflect the needs of NGGT's customers and other stakeholders. Some outputs may be more generic (eg compliance with health and safety legislation) whereas others may be specific targets (eg targets for amount and cost of gas to run the network). Some outputs should be met annually, whereas others should be met by the end of the RIIO-T1 period.

2.3. Table 2.1 below shows NGGT's performance across each output category.

Table 2.1: NGGT output performance

	Safety	Reliability & availability	Environment	Customer satisfaction	Connections
Output performance	Met	Met most outputs. Some capacity auctions affected by system issues	Met most outputs. Missed GHG target	Met	Met

2.4. NGGT met its targets in all but two output categories during 2016-17. We discuss these below.

Meeting Uniform Network Code (UNC), the gas transporter Licence and the Gas Act 1986 capacity obligations

2.5.   Under its reliability and availability output, NGGT has a requirement to meet the obligations of the UNC, its gas transporter Licence and under the Gas Act 1986. During 2016-17 NGGT experienced IT system issues which prevented a small percentage of daily capacity auctions from running. This issue only affected the European interconnection points. Where the auctions did not run, the capacity was made available at the next within day auctions.

Environmental outputs – greenhouse gas emissions

2.6.   NGGT has a financial incentive to reduce the amount of natural gas vented from its compressors. In 2016-17, NGGT increased the amount of gas vented from its compressors and missed its target by 24% (3,590 tonnes compared to its target of 2,897 tonnes). The increase is mainly due to the increase in compressor usage driven by the higher volumes of gas arriving at the St Fergus gas terminal. It is disappointing that NGGT has missed its target every year during RIIO-T1. NGGT will be penalised £1 million under the greenhouse gas emissions incentive mechanism for its performance during 2016-17.

Mid-period review (MPR)

2.7.   We recently made two decisions that impact on NGGT's output requirements. These were part of our MPR and MPR parallel work processes.

2.8.   In our MPR decision[2] earlier this year, we removed an output that required NGGT to deliver a new pipeline to mitigate the closure of the Avonmouth LNG storage facility. We found that the pipeline was no longer required. We also removed £169m (2009-10 prices) from NGGT's allowance.

2.9.   In our MPR parallel work decision[3] we clarified how we would assess NGGT's output to ensure compliance with the Industrial Emissions Directive (IED) at Aylesbury, Huntingdon and Peterborough compressor stations. In our RIIO-T1 final proposals, we specified that NGGT must deliver compressor units of a particular size and technology. NGGT is now undertaking different, lower-cost projects at these stations to achieve compliance.

2.10.   In our decision, we determined that NGGT will achieve its output if it complies with the requirements of the IED and we would not specify the delivery of certain compressor units.

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[2] https://www.ofgem.gov.uk/system/files/docs/2017/02/mid-period_review_decision.pdf
[3] https://www.ofgem.gov.uk/system/files/docs/2017/07/mpr_parallel_work_decision-v3.pdf

Innovation

2.11. Alongside the TIM, there are two specific RIIO innovation schemes: the Network Innovation Allowance (NIA) and the Network Innovation Competition (NIC).

Network innovation allowance (NIA)

2.12. The NIA is designed to fund smaller scale research, development and demonstration projects. It provides each licensee with an allowance to spend on innovation projects in line with the NIA Governance Document[4]. In 2016-17 NGGT registered further NIA projects. If successful, these projects should bring a wide variety of financial, operational, environmental and safety benefits.

Network innovation competition (NIC)

2.13. The NIC is an annual competition which provides funding to large-scale innovation projects. Its aim is to encourage network companies to innovate in the design, build, development and operation of their networks.

2.14. NGGT did not submit any applications for funding in the NIC during 2016-17 but continued to generate learning through its Customer Low Cost Connections and In Line Robotic Inspection of High Pressure Installations projects.

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[4]https://www.ofgem.gov.uk/publications-and-updates/version-30-network-innovation-allowance-governance-documents

3. Financial performance

Chapter purpose
This chapter reports on how the financial performance of NGGT in RIIO-T1 translates into the actual revenue it can collect via customer bills. We report Totex, a key driver of allowed revenue. We also discuss NGGT's returns, as measured by RoRE.

Introduction

3.1.   Each year we calculate the allowed revenue that NGGT can collect from customers through their bills. To calculate the allowed revenue the forecast opening base revenue[5] is adjusted for a number of factors (see Figure 3.1). The main factors are: Totex performance, specifically the share of over or underspend borne by the company, and incentive payments.

Figure 3.1: Simplified process for calculating allowed revenue

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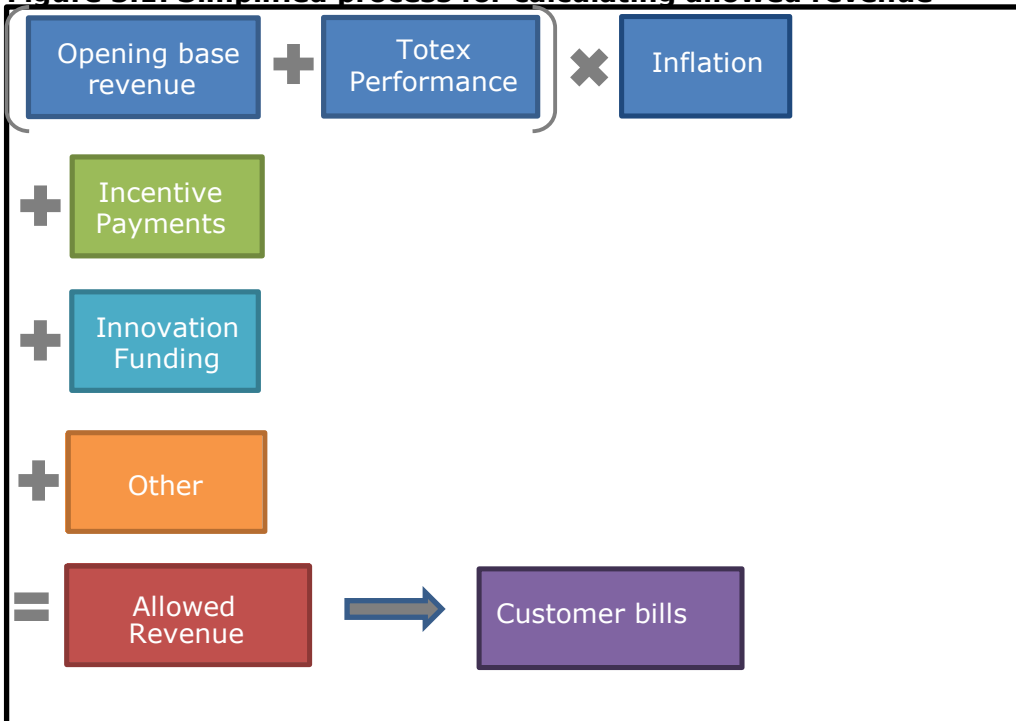
[5] Opening Base Revenue is a best view of the amount of money NGGT needs to earn on its regulated business to recover the efficient cost of carrying out its core activities. It is determined through ex ante forecasts conducted by Ofgem and NGGT prior to the start of the price control.

Totex performance

3.2.   For each year of the price control we set NGGT's cost allowances making up its allowed Totex[6]. This is to enable investment to maintain the existing network, accommodate new network infrastructure, and to deliver agreed outputs. NGGT must report its actual Totex, explaining its performance compared to the allowed Totex annually. NGGT must also forecast its Totex performance to the end of the price control.

3.3.   As Totex refers to total controllable expenditure, it comprises both capital expenditure (capex) and operational expenditure (opex). Therefore, NGGT is incentivised to deliver outputs based on total whole life costs, rather than being driven to prefer either capex or opex[7]. This better incentivises NGGT to select the best overall solutions for customers.

Actual expenditure

3.4.   We set a Totex allowance of £2.2 billion for the full eight years of RIIO-T1 for NGGT (TO). Table 3.1 shows NGGT's allowed and actual expenditure. The allowance for 2016-17 was £267 million, and actual expenditure was £275 million. Therefore there was an overspend of £8 million or 3%. Chapter 4 and Appendix 1 give more detail on the expenditure against allowances for specific cost categories.

Table 3.1: Pre-tax Totex in 2016-17 (£m)

	NGGT (TO)	NGGT (SO)
Total allowed expenditure	267	94
Actual expenditure	275	92
Overspend (underspend)	8	-2
Sharing Factor	44.36%	44.36%
Allowed expenditure after sharing	271	93

Forecast expenditure

3.5.   Table 3.2 shows NGGT's performance for the first four years of RIIO-T1 and its forecast performance for the full eight years of RIIO-T1.

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[6] Controllable costs only, excludes uncontrollable costs (eg business rates and licence fees).
[7] Historically capex solutions were preferred, as capitalised costs increased a company's RAV. Under the Totex approach, the same percentage is capitalised whether capex or opex solutions are used. Also, we set the same TIM rate for capex and opex solutions.

Table 3.2: Forecast of final allowed and actual Totex (£m)

	2013-14 to 2016-17				Forecast: 2013-2021			
	Allowance	Actual	Difference		Allowance	Actual	Difference	
NGGT TO	976.0	960.9	-15.2	-2%	2256.3	2551.5	295.3	13%
NGGT SO	414.9	357.9	-57.0	-14%	816.4	748.3	-68.1	-8%

3.6.　To date NGGT (TO) has underspent by £15 million (2%) but forecasts to overspend by £295 million (13%) by the end of RIIO-T1. NGGT (SO) has underspent by £57 million (14%) and forecasts to underspend by £68 million (8%) by the end of RIIO-T1.

Totex incentive mechanism (TIM)

3.7.　NGGT is incentivised to outperform its Totex allowance through the TIM. Under RIIO-T1, companies that submit better forecasts in their price control business plans (ie closer to our view of efficient cost) receive a higher Totex efficiency incentive rate, meaning companies get to keep more of any underspend[8]. Therefore, efficient spending leads to better returns for investors and lower network charges for customers. Equivalently, any overspend is shared between investors and customers. Under the scheme, NGGT is exposed to 44.36% of any under or overspend and the consumer is exposed to the remaining 55.64% (subject to tax).

3.8.　Allowed revenue is the total amount of money that NGGT can collect through gas transmission transportation charges. Actual Totex and rewards and penalties through other incentive mechanisms affect the allowed revenue NGGT can collect.

3.9.　The process of reaching final allowed revenue was explained in detail in last year's annual report[9].

3.10.　Table 3.3 shows the allowed revenue we have determined may be collected during the price control so far. This is exclusive of the reconciliation of the revenue collection correction factor. This is to improve cross-years comparisons of the consumer cost for the services provided. Also provided are details of what comprises allowed revenue in 2018-19. Note that minor constituent parts of the allowed revenue are still subject to uncertainty or are not forecast in advance.

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[8] The efficiency incentive rate is used to calculate the revenue adjustment NGGT receives as a result of overspend or underspend versus its allowed expenditure. It is symmetric and fixed for the duration of the price control period. The higher the efficiency incentive rate, the more of any overspend is borne by NGGT and the more of any underspend it retains.

[9] Appendix 1 of the report explains the allowed revenue process and Appendix 2 provides definitions of financial terms - https://www.ofgem.gov.uk/system/files/docs/2017/02/riio_-gt1_annual_report_2015-16.pdf

Table 3.3: NGGT (TO) allowed revenue (2009-10 prices)[10]

Allowed revenue (to date)	£m
2013/14	534
2014/15	570
2015/16	578
2016/17	623
2017/18	652
2018/19	526

Table 3.4: NGGT (TO) allowed revenue breakdown (2018-19 prices)[11]

Allowed revenue (2018-19)	£m
Opening Base revenue	824
MOD	-132
Non-controllable costs	-11
Incentive Payments	8
Innovation Funding	5
Correction Factors	
Revenue collection	-11
Inflation forecast true-up	-3
Corrected Allowed Revenue	680

Customer bill impact

3.11. Our Supplier Cost Index[12] provides an estimate of the overall cost of domestic energy bills. This includes estimates of the contribution made by NGGT to the overall energy cost. Our methodology uses an average gas demand applied uniformly across all regions and over time[13]. Actual customer bills are sensitive to geographic region, consumption volume and the timing and duration of contracts.

3.12. Our latest bill estimates using this methodology are reported in Figure 3.2 and in Table 3.5. We estimate that the typical GB domestic customer will pay £9 in 2018-19 for gas transmission costs. Charges differ considerably depending on the region in which a customer resides. For a typical customer 2018-19 charges are expected to range from £4 in Scotland to £15 in Wales and West of England (see Table 3.5).

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[10] In order to more clearly see historical trends, the figures in this table do not include the revenue correction factor. For 2018-19, we have assumed NIA funding at 0.7% of base revenue, but have not reflected any potential NIC funding.

[11] The figures in this table do include the revenue collection correction factor and are in 2018-19 price terms. We have assumed NIA funding at 0.7% of base revenue, but have not reflected any potential NIC funding.

[12] We used the November 2017 Supplier Cost Index model: https://www.ofgem.gov.uk/electricity/retail-market/retail-market-monitoring/understanding-trends-energy-prices

[13] Using median domestic consumption behaviour (volume and timing of use) for a 12-month fixed price contract

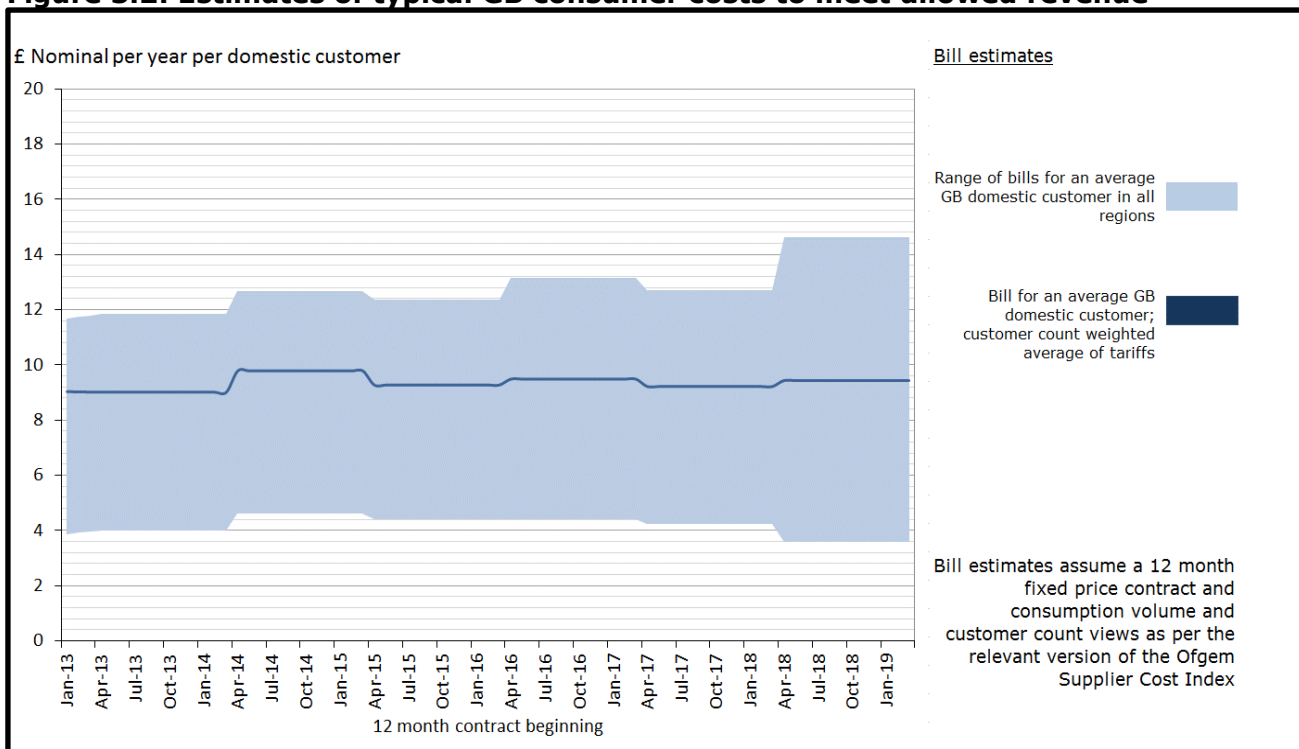**Figure 3.2: Estimates of typical GB consumer costs to meet allowed revenue**

Table 3.5: Regional estimates of typical GB consumer cost to meet allowed revenue (£m nominal prices per domestic customer)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
GB customer count weighted average	9	10	9	9	9	9
Region						
Cadent - East of England	8	9	8	8	7	7
Cadent - London	9	10	9	9	9	8
Cadent - North West	11	12	12	13	13	12
Cadent - West Midlands	10	10	10	10	10	10
Northern Gas Networks	6	7	6	6	6	5
Scotia Gas Networks - Scotland	4	5	4	4	4	4
Scotia Gas Networks - Southern	12	13	12	13	13	13
Wales and West Utilities	11	11	10	10	10	15

Return on Regulatory Equity (RoRE)

3.13. We assess the overall financial performance of network companies using a measure called RoRE. Our RoRE should be compared to the cost of equity allowed at the start of the price control. NGGT was allowed a cost of equity of 6.8%. Based on current forecasts, NGGT's RoRE is 7.5%.

Figure 3.3: Simplified RoRE to show key drivers of industry performance
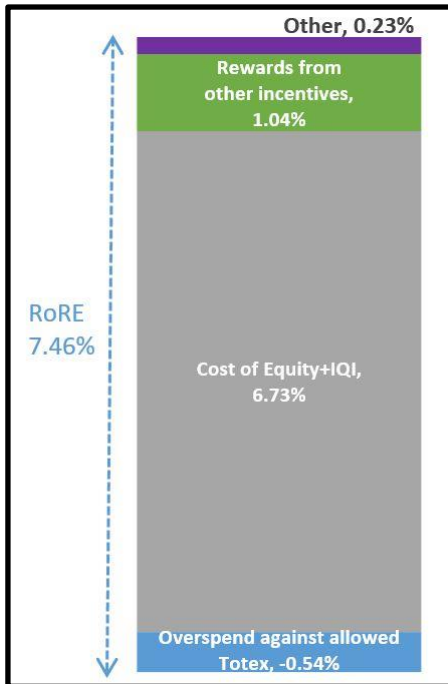
3.14. Figure 3.3 shows that NGGT's returns are mainly driven by its incentive performance in its SO role and its Totex overspend in its TO role. Our numbers include the impact of the MPR.

3.15. Three of the current SO incentives are set until 2018 and are being reviewed. As the outcome of this review is currently unknown, and without prejudicing our decision, we have assumed incentive rewards will remain stable at pre-review levels for the latter years.

3.16. There are a number of factors which are not reflected in our RoRE calculations, but which may impact the return realised by shareholders. We have not included the potential end-of-period clawbacks for under delivery on network output measures (NOMs). The methodologies for these are still under development. The current RoRE calculation assumes delivery of all RIIO-T1 outputs. Our RoRE analysis also excludes companies' actual debt costs relative to our regulatory assumptions, innovation funding, legacy assumptions from prior control periods and unfunded pension deficits. We may include some of these items in the future as we continue to develop our RoRE methodology.

3.17. Finally, we apply an arithmetic mean to calculate our 8-year average RoRE, rather than applying a geometric mean or weighted mean. While other averaging methodologies may better represent a long-term investment in a single company, our approach is consistent with how we informed our judgement on return on

equity. For our RIIO-T1 cost of capital decisions, we used the Capital Asset Pricing Model (CAPM) framework, which expresses the cost of capital as the amount needed to attract investment from a diversified investor that invests every year. The arithmetic average more accurately reflects this, and we are not considering a project return from a long-term investment in one particular company.

Figure 3.4: Forecast eight-year average RoRE
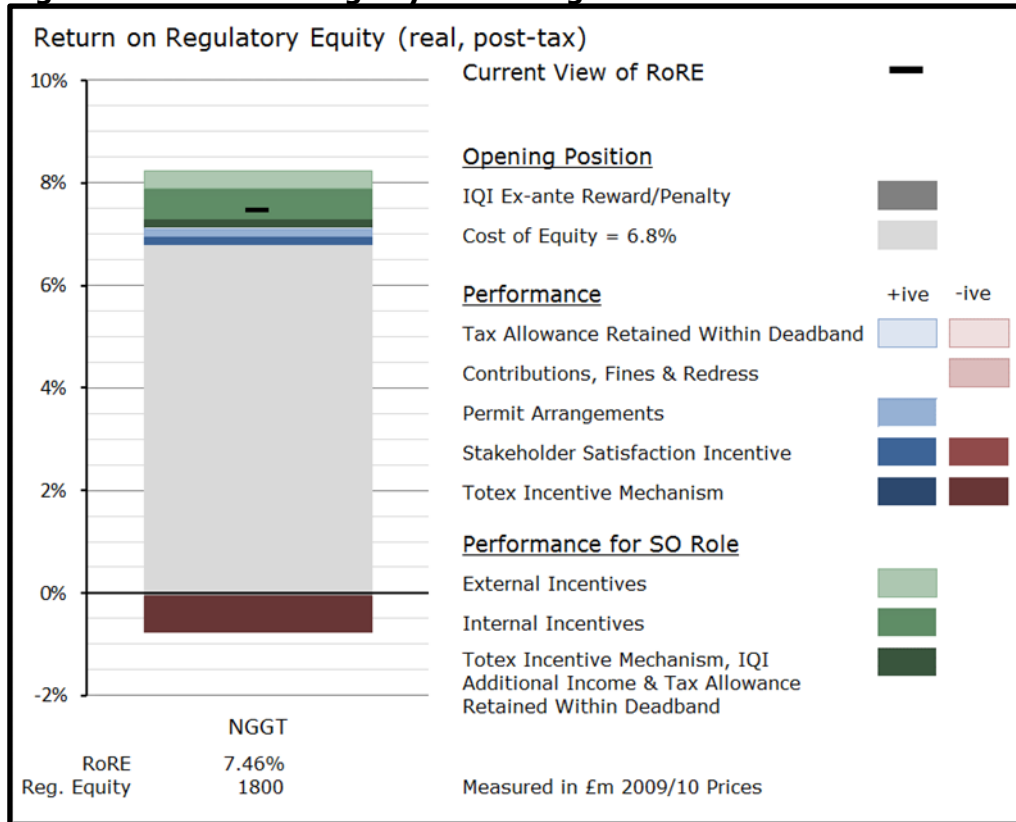
4. Totex performance drivers

Chapter purpose
This chapter outlines Ofgem's view on the reasons behind NGGT's Totex performance. It provides comment on the drivers behind this performance.

Overview

4.1.   NGGT is incentivised to achieve its outputs using efficient expenditure. Where it underspends against its allowances it retains a share, but where it overspends it must bear a portion of the overspend too. NGGT is the only company from the RIIO-T1 and RIIO-GD1 price controls to forecast an overspend. This is a concern for us, as consumers may face higher costs over the eight years of RIIO-T1.

4.2.   In other sectors, we have tried to explain whether the performance of companies is due to one of three factors: efficiency in delivery, provision in the price control settlement (assumptions made within the RIIO-T1 settlement that have varied against the actual position), or external factors such as weather or economic conditions. We haven't taken this approach for gas transmission as NGGT is forecasting an overspend. Instead, our report focuses on the drivers of the overspend. If NGGT does overspend against its allowances we want to ensure that this is the right thing for consumers and that its costs in doing so are efficient.

4.3.   During 2016-17 we made significant reductions to NGGT's allowances in our MPR and Fleetwood[14] decisions in areas where network investment was no longer required. As NGGT has incurred little cost in these areas, the removal of these allowances is not the reason for its overspend.

Totex performance (TO)

4.4.   NGGT (TO) forecasts to spend £2,552 million against an allowance of £2,256 million during RIIO-T1; an overspend of £295 million (13%). To date, it is underspending its forecast allowances by £15 million.

4.5.   Most of the forecast overspend is driven by spend related to improving the condition of the network. NGGT has stated the actual network condition is worse than previously modelled. Consequently, it has increased spending (above allowances) in areas such as asset replacement, non-operational capex and operating costs.

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[14] https://www.ofgem.gov.uk/publications-and-updates/decision-fleetwood-entry-point-gas-transmission

4.6.   In addition to this, NGGT is also forecasting significant costs of £444 million to ensure its compressor fleet complies with the relevant emissions legislation, with over £340 million costs between now and the end of RIIO-T1.

4.7.   However, with circa £400 million of non load related costs forecast for the last two years of RIIO-T1, the deferral or cancellation of some projects may result in NGGT achieving an underspend against allowances rather than the significant overspend currently forecast. We will monitor this area carefully over the remaining years of RIIO-T1.

Asset health

4.8.   NGGT has increased the workload for its asset health programmes leading to forecast costs of £660 million (£85 million above allowances). Work has been prioritised to improve asset health at some key gas transmission sites as well as improving the health of certain asset types across the network.

4.9.   In relation to this, NGGT has also increased spending on:

- asset management and reporting systems
- headcount and procurement

4.10. We have concerns about the level of overspend anticipated on asset health. It is not clear why the network condition is worse than previously thought. However, we recognise the importance of asset health and are encouraged by NGGT's response to correct this issue. We will continue to monitor this area to ensure that costs are efficient.

Compressor emissions

4.11. NGGT is currently forecasting to spend £429 million on ensuring its fleet of compressors is compliant with the relevant emissions legislation. This is compared to its forecast allowance of £552 million. These figures take into account a proposed allowance reduction for which we expect NGGT to apply for at the 2018 reopener.

4.12. NGGT is achieving cost savings by measures such as installing smaller compressor units, installing catalysts (rather than building new units), or utilising derogations which allow it to run certain non-compliant units for a limited number of hours per year.

4.13. However, as noted in previous annual reports, NGGT has also incurred significant costs in relation to compressor projects that were funded under the previous price control (TPCR4).

4.14. In the 2018 reopener window, we expect NGGT to apply for a reduction to its compressor emissions allowance[15]. We will assess the costs NGGT has incurred in relation to its allowance to determine if these are efficient and may adjust allowances accordingly.

Totex performance (SO)

4.15. NGGT forecasts to spend £748 million against an allowance of £816 million – an underspend of £68 million (8%). This includes NGGT's forecast reopener allowances for cyber security and data centre costs.

4.16. The underspend is mainly driven by lower forecast costs on telemetry and its Gemini[16] strategy where NGGT proposes to refresh the system rather than replacing it.

Real price effects (RPEs)

4.17. When setting the Totex allowances for the price control we acknowledged that several key input costs may not necessarily change in line with the Retail Price Index (RPI) measure of economy-wide inflation. The difference between RPI and inflation on inputs specific to NGGT is known as RPEs. To account for this differential, we provided an ex ante allowance based on RPE forecasts.

4.18. We have now updated the indices used in the price control, replacing four years of forecast indices with actuals, and retaining the forecasts as per the price control for the remaining four years to understand the impact on allowed Totex. To date, we estimate that eight-year Totex allowances would have been £205 million lower (for both NGGT TO and SO) had we used indexation for RPEs as opposed to setting ex ante RPE allowances.

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[15] We allowed £269 million in relation to uncertain compressor emissions projects. This does not include the projects specified at Aylesbury, Peterborough and Huntingdon that were funded separately.
[16] The system used for NTS capacity and gas nominations and gas energy balancing.

Appendix 1 – Supplementary data file

The below link contains the data for all tables and graphs shown within this annual report.

https://www.ofgem.gov.uk/publications-and-updates/riio-gas-transmission-annual-report-2016-17