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RIIO Gas Transmission Annual Report

2014-15

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Annual Report

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Who should read this document? Users of the transmission networks, licensees, and providers of finance and consumer groups

Overview:

RIIO-T1 is the first transmission price control, along with its equivalent gas distribution price control (RIIO-GD1), that uses the RIIO (Revenue = Incentives + Innovation + Outputs) price control model. This price control began on 1 April 2013 and runs for eight years, to 2021.

This report reviews the progress National Grid Gas Transmission has made in the first two years, and its forecast for the remainder of the eight-year period, comparing its performance with the outputs it is committed to deliver and the costs it has incurred against allowed revenues.

In addition, the report outlines the performance of the system operator (SO), whose role is to ensure that the gas system remains in balance.

Note: Please note that all financial figures are quoted in 2014-15 prices unless stated otherwise. This includes forecast figures.

Context

We regulate the monopoly and some of the competitive segments of the gas and electricity markets. The competitive segment broadly encompasses the wholesale and retail markets of electricity and gas. The networks that transport the gas and electricity from producers to consumers are largely monopoly businesses, except for where competition is introduced. The regulation of the monopoly network businesses is mainly through periodical price controls. These price controls limit the amount by which costs can rise and stipulate levels of performance, thus ensuring value for money for consumers.

The gas transmission network consists of high-pressure long-distance gas pipelines and compressors, which transport gas from offshore, storage and LNG facilities to local gas distribution networks.

There is one gas transmission owner (TO) in Great Britain: National Grid Gas plc (NGGT), which owns the high pressure gas transportation system across Britain.

In addition to its TO responsibilities, NGGT is the designated gas System Operator (SO). It is responsible for day-to-day system operation, including balancing of the system and constraint management. The price control included allowances for internal costs (staff and IT costs). All external SO cost allowances for system balancing are determined via a separate process.

In December 2012, we published our final proposals document for RIIO-T1. This set out the baseline revenues NGGT could recover and the outputs it would deliver for the eight-year period commencing 1 April 2013. It also contains processes to vary revenues as the needs for the transmission system develop and/or NGGT's performance exceeds or falls short of pre-set targets.

The key changes between the RIIO price control and previous price controls are as follows:

- An emphasis on outputs that companies are expected to deliver to provide a clearer link between value for consumers and costs.
- Incentives are equalised between operating costs and capital expenditure. Companies are therefore monitored on total expenditure (totex) performance.
- A longer period of eight years (rather than five) to give companies more certainty and enable them to focus more on delivering for consumers.
- The introduction of a process to feed TOs' actual performance into revenue calculations annually.

Using the data and supporting information submitted by NGGT, this report reviews how NGGT has performed and is forecasting to perform against the outputs and allowances set. This report reviews NGGT's effectiveness in delivering services cost-efficiently and the benefits it has delivered to consumers and stakeholders.

This and subsequent annual reports will build the picture of NGGT's performance over RIIO-T1. These reports will also highlight to NGGT and other stakeholders where we will be focusing our analysis in future. This should encourage NGGT to

provide better explanations of performance in returns and better information provided to all stakeholders.

Associated documents

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 NGET and NGGT – Cost assessment and uncertainty

RIIO-T1: Final Proposals for NGGT and NGET – Finance

GT1 Price Control Financial Handbook

Reports on NGGT's performance during RIIO

RIIO Transmission Annual Report 2013-14

RIIO-T1 Performance Data

National Grid Gas Transmission Performance Summary

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Executive summary

In July 2015, National Grid Gas Transmission (NGGT) submitted to Ofgem its regulatory reporting packs covering the second year of RIIO-T1 (2014-15). We reviewed these and asked NGGT to clarify certain parts. In RIIO, the focus is on outputs, incentives and innovation as well as total expenditure (totex). Some of the required outputs will not be fully delivered until the end of RIIO-T1 (March 2021) and so this report considers forecast performance across the whole price control as well as actual performance over the first two years of RIIO-T1.

As part of the agreed initiative to make company performance more transparent in RIIO, NGGT published its own annual performance report at the end of September 2015. This report is therefore designed to give our analysis of NGGT's performance (including its performance as gas system operator), rather than re-presenting the numbers that are already in the public domain. We will also highlight areas where we will be focusing our attention in future, in order to encourage NGGT to address our concerns in its future returns.

2014-15 Performance headlines

Customer bill impact

NGGT's maximum allowed TO revenue in 2014-15 was £692.8 million, an increase of some £58 million from the previous year (all in 2014-15 prices). This increase, of just over 9%, was a result of factors including: higher base revenue allowances; pass through costs of conveying gas to independent systems; a network innovation competition incentive payment; and under-recovering revenues from 2013-14. We estimate that the gas transmission costs for an average domestic customer were just under £11 per year (slightly less than 1% of the average domestic dual fuel customer bill).

Financial performance

The financial performance of transmission companies is presented using the return on regulatory equity (RoRE) measure. Based on the latest data and forecasts from NGGT, we estimate that NGGT could exceed the expected return allowed in the RIIO-T1 Final Proposals (of 6.8%) by around 1.2 percentage points. This estimate of RoRE over the eight years of RIIO-T1 depends on forecasts and future delivery of outputs, which is not confirmed at this stage. Whilst this estimate should be seen as the best available at this time, it remains uncertain.

The regulatory asset values (RAV) of NGGT TO and SO are expected to grow over the RIIO-T1 period, reflecting the investment in the system, particularly to meet emission targets and maintain asset health.

Output performance

It is too early to say whether NGGT's expected output delivery will meet all targets set against the six output categories (safety, reliability, availability, customer satisfaction, connections and environmental). We note progress in a number of areas but NGGT needs to do more to ensure it delivers its outputs.

For the reliability and availability outputs we have concerns that NGGT have indicated that some key projects which were proposed in their RIIO-T1 business plans may not go ahead. Also, the requirement to meet the 1-in-20 for Scotland obligation is still to be defined. We will be working with NGGT to improve reporting and understanding of asset health and network output measures (NOMs), which were included to ensure we had leading indicators of network performance in place for RIIO.

For the safety output, we will review a serious gas incident to assess its impact on this output.

We consider that NGGT met their required outputs in the customer satisfaction, connections and environmental areas. For customer satisfaction, NGGT generally performed well in comparison to other transmission operators.

Totex performance

In 2014-15, NGGT has spent 17 per cent less than its baseline allowance. It is forecasting an underspend of eight per cent during the entire RIIO-T1 period.

One of the main reasons for the underspend is key projects being deferred or amended, such as the Avonmouth pipeline project and the Scotland 1-in-20 obligation projects.

We think the underspend could be significantly greater than forecast by NGGT and we will continue to monitor this area during RIIO-T1.

Mid-period review

In November 2015 we consulted on a mid-period review (MPR) of the Avonmouth, pipeline solution, the 1-in-20 obligation for Scotland and compressor projects.We are considering the responses to this consultation and will make our decision in April.

1. Revenue and customer bill impact

Chapter Summary

This chapter explains how expenditure made by NGGT to improve the UK's transmission infrastructure in RIIO-T1 impacts on customer gas bills.

Analysis of Gas Transmission Revenue

1.1. Over RIIO-T1, NGGT expects to spend approximately £2.3 billion[1] of expenditure reflecting the necessary investment to meet emission targets and maintain asset health.

Allowed revenues

1.2. NGGT's licence includes price control conditions, which determine the maximum amount of annual revenue it can earn from maintaining, reinforcing and upgrading the transmission system it is responsible for. The allowed revenues are recovered from charges to the users of the transmission network.

1.3. The maximum allowed revenue that NGGT Transmission Operator (TO) may recover is set by a formula in Special Condition 2A[2] of the NGGT Gas Transporter Licence Special Conditions. The main elements are:

- Transmission base revenue: This includes a baseline derived from the TO's Final Proposal, adjustments reflecting changes in requirements and a sharing mechanism for total expenditure (totex).
- Pass-through costs: Some costs that are both outside the TO's control and difficult to predict can be passed on to the consumer (eg business rates).
- Incentive adjustments: These relate to the TO's performance under mechanisms in the licence.
- Innovation: These are costs associated with the Network Innovation Allowance (NIA) and Network Innovation Competition (NIC)[3].
- Correction factor: A revenue adjustment for under/over-recovery of charges against allowed revenue in previous years.

[1] This represents actual total expenditure (totex) for 2013-14 and 2014-15 plus six years forecast spend for 2015-16 to 2020-21 based upon the TO's latest published figures.
[2] https://epr.ofgem.gov.uk//Content/Documents/National%20Grid%20Gas%20Plc%20-%20Special%20Conditions%20Consolidated%20-%20Current%20Version.pdf.
[3] See chapter 3 for further details on these mechanisms and allowances.

Annual process of setting revenue allowances

1.4. RIIO-T1 includes an Annual Iteration Process (AIP)[4], which calculates the level of change to opening base revenue allowances in light of financial conditions, operational developments, and output levels achieved during the price control period. Revenue changes as a result of TO performance happen after a two-year lag. For example, the allowed revenue modification as a consequence of 2014-15 actual performance will affect allowed revenues for 2016-17.

1.5. Table 1 below shows the value of the opening base revenue allowances set at the time of Final Proposals for 2013-14 and 2014-15 for the TO (row 1) and the updates we have made to these allowances to reflect the TO's actual outturn through the AIP and inflation (rows 2 and 3, respectively). The resulting base transportation revenue is shown in row 4.

1.6. Table 1 also summarises the other individual elements of the allowed revenue formula in the first two years of the price control period (rows 5 to 10). The values in row 11 are the maximum allowed revenue attributable to the TO.

Table 1: Breakdown of NGGT TO allowed revenues for 2013-14 and 2014-15

	£m, 2014-15 prices	*NGGT TO*	
		2013-14	**2014-15**
1	Opening Base Revenue Allowance	640.8	645.8
2	MOD determined in AIP	0.0	9.1
3	True-up for actual inflation	0.0	-0.2
4	**Base Transportation Owner Revenue (1+2+3)**	**640.8**	**654.8**
5	Pass Through Items	-8.0	19.8
6	Output Incentive Payments	0.0	0.0
7	Network Innovation Competition	0.0	15.1
8	Network Innovation Allowance	2.8	3.6
9	PARCA Revenue Adjustment[5]	0.0	0.0
10	Correction Factor	0.8	0.0
11	**Maximum Allowed Revenue (4+5+6+7+8+9-10)**	**634.8**	**693.3**

1.7. The MOD value of £9.1 million (row 2) represents a modification to the opening base revenue allowance for 2014-15. The main drivers for the MOD are in relation to legacy price control adjustments (logged up and security cost revenue

[4] Further details on the workings of the AIP can be found in the GT1 Price Control Financial Handbook: https://www.ofgem.gov.uk/sites/default/files/docs/2014/11/gt1_handbook_-_v1.3_final_without_mark_up_0.pdf

[5] A PARCA (Planning and Advanced Reservation of Capacity Agreement) revenue adjustment is made when a PARCA is terminated (e.g. because planning permission has been refused or before a planning submission is made).

adjustments, and capital incentive scheme adjustments) and adjustments relating to change in the cost of debt.

1.8. The Network Innovation Competition element in Table 1 above (row 7) refers to the funding of innovative low carbon or environmental projects. Network Innovation Competition allowed costs are all passed to customers through the transmission revenue irrespective of which licensees win a bid.

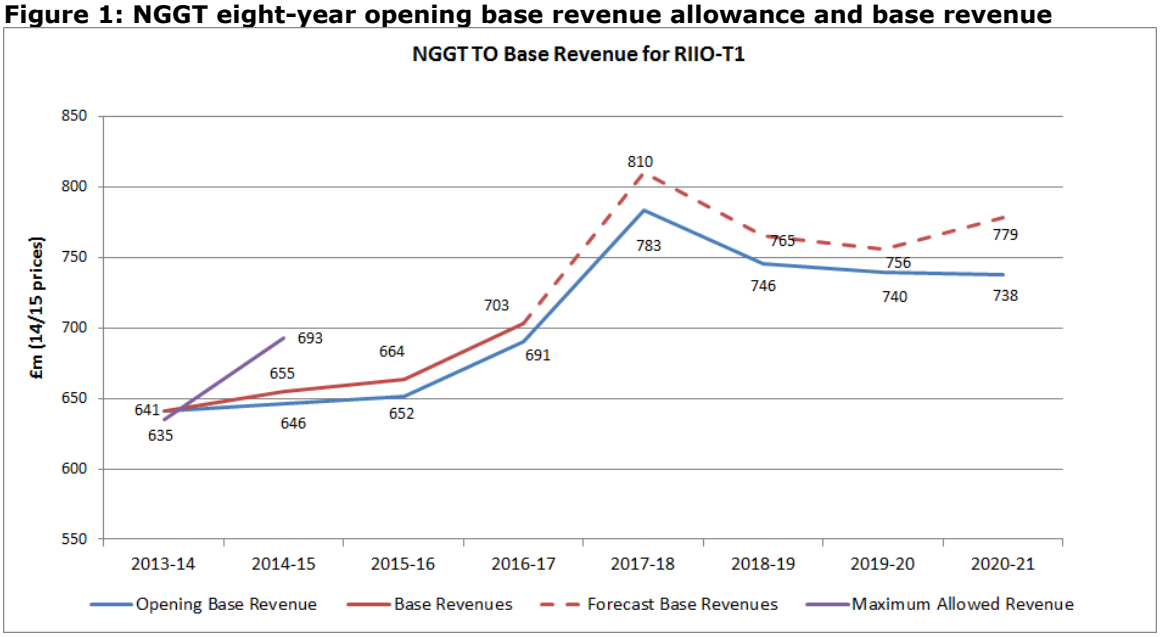
1.9. Pass through items in 2013-14 and 2014-15 (row 5) are for the independent system adjustment, which compares the costs of conveying gas to independent systems, and the determined independent systems allowance. In 2013-14, the independent system costs paid by NGGT were less than the allowance set in the licence of £7.9 million (09-10 prices), hence the negative pass through cost. In 2014-15, the independent system costs paid were substantially higher than in the previous year and the set allowance. This was as a result of the terms of NGGT's licence changing, which in 2014-15 allowed them to collect revenue on behalf of another Transmission Owner.

1.10. Output incentive payments above (row 6) are comprised of the Stakeholder Satisfaction Output and Permit Arrangements. The value of zero in year 2 (2014-15) reflects the two-year lag introduced in RIIO, whereby incentive revenues 'earned' due to actual performance in the first two years of RIIO-T1 will be collected as allowed revenues only in years 3 and 4 respectively.

1.11. Figure 1 below shows the trend in opening base revenue allowances (set at the time of Final Proposals) against actual and forecast adjusted base revenues (based on the TO's forecast allowed expenditure[6]) for the remainder of the price control period. As shown in Table 1, the main difference between opening base revenues and transmission base revenues is the MOD value determined in the AIP.

[6] Base revenues for 2017-18 onwards have been adjusted for the impact of uncertainty mechanisms based upon the TO's forecasts of the level of outputs that they consider will be required by their customers across the RIIO-T1 price control period.

Figure 1: NGGT eight-year opening base revenue allowance and base revenue



1.12. As shown in Figure 1, transportation base revenues are greater than opening base revenues. This is largely as a result of positive MOD values (both actual and forecast). In 2015-16, the value of MOD (in 2014-15 prices) is £11.8 million. This increase over opening base revenue is largely the result of the triennial pension revaluation increasing the established pension deficit term, which is partially offset by decreases from the cost of debt and totex underspends. For 2016-17 the value of MOD is £12.4 million (in 2014-15 prices). In this year, in broad terms, increases from the established pension deficit term and the effects of the Authority's determination of cost allowances for enhanced security costs, are only partially offset by decreases from the cost of debt and totex underspends. Under the Totex Incentive Mechanism (TIM) NGGT retains 44.36% of underspends in the first two years of RIIO-T1 and passes on a percentage to consumers, subject to a tax adjustment, through revenue reductions in 2015-16 and 2016-17 respectively.

1.13. Maximum allowed revenue (MAR) represents the allowed revenue for a given regulatory year. The licensee uses the MAR to set its Transmission Network Charges. Figure 1 above shows that MAR has increased by 9.1% in 2014-15 compared to the previous year. The main drivers for the change are pass through costs, network innovation competition funding, and MOD.

Customer bill impact

1.14. NGGT recover allowed revenue, for upgrading, maintaining and operating the gas transmission system, through a range of gas transmission charges. The details of the (new) method we use to calculate bill impact is described in the Appendix.

1.15. This year, using the new methodology, we estimate that gas transmission network costs in an average domestic customer's bill were just under £11. This represents slightly less than 1% of the average domestic dual fuel customer bill

estimated as £1,190[7]. The gas transmission network costs in the average domestic customer's bill increased slightly in 2014-15, by around 3% (in real terms) from 2013-14.

[7] Data table – large suppliers: domestic dual fuel bill breakdown over time; last updated in 2014.

2. Outputs

Chapter Summary

This chapter examines the second year performance and forecast performance of NGGT in meeting its output commitments and incentive targets over the RIIO-T1 period.

Overall output targets and performance

2.1. As part of RIIO-T1, we set outputs which NGGT has committed to deliver over the price control period. The following six outputs form the cornerstone of the RIIO price control framework[8]:

- safety
- reliability
- availability
- customer satisfaction
- connections
- environmental

2.2. In most cases it is impossible to measure the outputs with a single metric. We identified outputs or measures that are measurable, as shown in Table 2 below. If NGGT achieves the measures satisfactorily, we consider it will have achieved the primary outputs. After the end of the second year of RIIO, there are areas where issues have transpired in terms of how NGGT is delivering its outputs. We are still exploring these, and not drawing firm conclusions from NGGT's performance just yet.

2.3. These issues relate to the reliability and availability outputs, as these were supported by specific projects which were the basis for the funding NGGT is receiving. This chapter summarises how NGGT is performing against the RIIO outputs. Chapter 4 has more detail on outputs that are linked with network capex, eg load-related capex and NOMs.

[8] Further detail of the outputs framework in RIIO-T1 is available at https://www.ofgem.gov.uk/sites/default/files/docs/2012/12/2_riiot1_fp_outputsincentives_dec12.pdf

Gas outputs, measures and incentives performance

Table 2: Gas outputs and measures

Safety	- Compliance with legal safety requirements - NOMs
Reliability and availability	- System reliability - Additional capacity - Constraint management - NOMs - Baseline capacity for each entry and exit point (as set out in the licence)
Customer satisfaction	- Customer satisfaction survey - Stakeholder engagement
Connections	- Connections process established through UNC373
Environmental	- Business carbon footprint[9]

Safety

2.4. NGGT must comply with its legal safety requirements in order to achieve its safety output. These requirements are monitored by the Health and Safety Executive (HSE). NGGT reported one serious safety incident which occurred during 2014-15: an uncontrolled release of gas at high pressure[10]. The HSE has investigated the incident and has confirmed it will not take enforcement action. We will also review the incident to establish how NGGT met its safety output.

Reliability and availability

System reliability

2.5. There is no specific target regarding system reliability. However, we expect NGGT to meet its 1-in-20 obligations. This means that a 1-in-20 highest winter peak demand for gas can be delivered.

2.6. Further to this, in order to align the delivery of outputs with load-related allowances, in our RIIO-T1 Initial Proposals[11] we stated: "Load-related investment relates to the Reliability and Availability output. Given NGGT's proposal for load

[9] Scope 1 and 2 emissions only. Further detail is in the Environmental section in this chapter.
[10] The incident took place at the Aberdeen compressor station on 23 May 2014 and resulted in the loss of 80 tonnes of natural gas. The HSE investigated the incident. NGGT also undertook its own investigation of the incident.
[11] RIIO-T1 IPs, para. 7.48: (https://www.ofgem.gov.uk/sites/default/files/docs/2012/07/riio-t1-nggt-and-nget-cost-assessment-and-uncertainty_0.pdf)

related expenditure, we consider that the specific projects should be set as specific outputs".

2.7. As will be discussed in Chapter 4, NGGT has deferred indefinitely the investments in relation to the 1-in-20 for Scotland[12]. Also, NGGT will not be proceeding with the investment to install the Avonmouth pipelines[13]. However, in its RIIO-T1 business plan NGGT indicated explicitly that the capex involved in building and upgrading physical assets was the only reliable way to manage the reliability and availability of the National Transmission System (NTS).

2.8. We will be working with NGGT to understand the discrepancy in NGGT's approach and ability to define the output requirements in a consistent manner.

2.9. Furthermore, we recently published our consultation on the Mid Period Review for the RIIO-T1 period[14]. In it, we asked for stakeholders' views on doing a review of the requirement and associated outputs that were aimed at delivering the Reliability and Availability Outputs. We will publish our decision on this in April 2016.

2.10. Additionally, we want to better understand how the lasting quality of the network reliability relates also to the NOMs methodology.[15] Please refer to Chapter 4 for more information.

Additional capacity

2.11. No new triggers for extra network capacity at entry points were received during the second year of RIIO-T1. At exit, a small demand was met entirely through the process of substitution where capacity at a neighbouring point can be used.

Constraint management

2.12. The gas constraint management incentive on NGGT encourages the company to be efficient in managing buyback costs (costs through retrieving capacity previously sold to shippers) net of related revenues, eg from gas shippers who use more than the gas they contracted for. Although significant buyback can be costly, NGGT's performance in 2014-15 follows recent years where the net costs were relatively small.

[12] The 1-in-20 for Scotland projects involved upgrading the capability of assets such as compressor stations, through reverse flow modifications. NGGT stated they will be working with stakeholders in the next few months to understand the requirements to deliver the 1-in-20 obligation. Please refer to Chapter 4 of our report for more information.
[13] The Avonmouth pipelines involved installation of two new pipelines. Please refer to Chapter 4 of our report for more information.
[14] Please refer to https://www.ofgem.gov.uk/publications-and-updates/consultation-potential-riio-t1-and-gd1-mid-period-review-0
[15] The NOMs methodology is a tool for monitoring and assessing the asset health condition and the risk criticality of secondary assets within the NTS. Hence, both the Safety and Reliability outputs relate to the NOMs methodology.

2.13. Therefore, we consider that NGGT is meeting the availability targets. These are set as baseline capacity for each entry and exit point within its transmission licence.

2.14. Refer to the Reliability section of this chapter above to see how NGGT is delivering the outputs associated with the load-related allowances.

Customer satisfaction

2.15. NGGT performed reasonably well in both customer and stakeholder surveys in 2014-15. It outperformed the electricity transmission companies but is still behind the high-performing gas distribution companies. However, NGGT showed a continued improvement on the previous year in both areas.

Table 3: Customer survey results[16]

Company	Customer survey score 2013-14	Customer survey score 2014-15
NGGT	7.2	7.6
NGET	7.4	7.4
SHE	N/A	N/A
SPT	N/A	N/A
Gas distribution network company average	8.6	8.75

Table 4: Stakeholder survey results

Company	Stakeholder survey score 2013-14	Stakeholder survey score 2014-15
NGGT	7.8	7.9
NGET	7.5	7.7
SHE	6.5	7.7
SPT	7.4	7.1
Gas distribution network company average	N/A	N/A

2.16. NGGT made a submission for our stakeholder engagement discretionary reward. This is a financial reward for high quality outcomes resulting from stakeholder engagement. This reward is designed to lock in the improvements in how the TOs worked with their stakeholders to understand their needs and priorities.

2.17. NGGT scored 6.25 out of 10, showing good improvement on the previous year. This score led to a financial reward of £1.49 million. This was the strongest TO performance and is in line with the average score for the gas distribution companies.

[16] GDN scores relate to domestic users whereas NGGT scores relate to shippers.

There is more detail in our decision letter on this year's stakeholder engagement discretionary reward[17].

Table 5: Stakeholder engagement results

Company	Stakeholder engagement score 2013-14	Stakeholder engagement score 2014-15
NGGT	5.75	6.25
NGET	5.75	6
SHE	5.4	6
SPT	4.9	5.5
Gas distribution network company average	6.56	6.21

Connections

2.18. The primary output in this area is the delivery of the process set out in UNC 373.

2.19. For the applications received in 2014-15, NGGT issued six full connection offers within timescales established by UNC 373 out of eight applications for connections to the NTS. The remaining two applications were withdrawn.

2.20. In addition to this, NGGT has developed and implemented its Planning and Advance Reservation of Capacity Agreement (PARCA) solution to remove barriers facing companies wanting to connect to the NTS.

Environmental

Business Carbon Footprint

2.21. There are no financial incentives linked to this output. NGGT must report annually on the transmission network business carbon footprint (BCF) and we expect interested stakeholders to monitor its performance. The BCF measure includes:

- Scope 1 emissions directly related to the day-to-day business activities of network business.
- Scope 2 emissions which arise from operating the network, including the CO2 emissions from losses of electricity or shrinkage of gas that occur as a result of transporting energy on the network.
- Scope 3 emissions due to third party contractors carrying out business activities on behalf of the network.

[17] https://www.ofgem.gov.uk/sites/default/files/docs/2015/09/stakeholder_engagement_14-15_decision_letter_tos_1.pdf

2.22. In 2014-15 NGGT reported to us the following:

Table 6: BCF (Scopes 1-3) in terms of tonnes of carbon dioxide equivalent (tCO_2e)

NGGT	2013-14	2014-15	Change
Total	350,192	296,219	-15.4%

2.23. NGGT significantly reduced its business carbon footprint, by 15.4% from 2013-14 to 2014-15. This was largely down to a reduction in emissions from shrinkage gas, (both that used as fuel for gas turbine drive compressors and as fugitive emissions[18] through leakage and gas lost through venting).

Table 7: NGGT greenhouse gas (GHG) emissions from shrinkage (tCO2e)[19]

GHG Emissions from Shrinkage (tCO2e)	2013/14	2014/15	Change
Fugitive Emissions	56,345	48,005	-14.8%
Combustion Fuel Usage	262,346	209,158	-20.3%

2.24. Shrinkage gas as a proportion of throughput (as measured by demand at Local Distribution Zone offtakes, interconnector exports and NTS direct connections) has reduced by 20.8%. This is explained by the reduction in compressor hours by 22%.

Table 8: NGGT shrinkage as proportion of throughput

Flows (GWh)	2013/14	2014/15	Change
Total entry flows	883,985	892,740	1.0%
Offtakes not including Storage	786,782	833,155	5.9%
Shrinkage	4,201	3,524	-16.1%
Shrinkage as % of Offtakes	0.53%	0.42%	-20.8%

[18] Emissions that are not physically controlled but result from the intentional or unintentional releases of GHGs.
[19] Combustion fuel usage figures are for natural gas only.

3. Innovation

Chapter Summary

This chapter presents an overview of NGGT's expenditure on the various innovation incentives in RIIO-T1

3.1. As part of the RIIO-GD1 and RIIO-T1 price controls, we introduced the Network Innovation Allowance (NIA)[20] and the gas Network Innovation Competition (NIC).[21] Both of these aim to encourage new technologies, operating arrangements and commercial arrangements.

Network Innovation Allowance

3.2. The NIA[22] is a "use it or lose it" allowance which seeks to fund smaller innovation projects. If successful, these projects should: reduce safety risks and improve reliability of the network; reduce the environmental impacts of the network; facilitate new connections; develop new commercial frameworks; strategically develop licensees' networks; improve system operability, and enhance working processes. These initiatives must potentially deliver financial benefits to customers to be eligible for funding. During RIIO-T1, NGGT may spend annually up to 0.7% of base revenue of which 90% is recoverable from consumers.

3.3. In the first year of RIIO-T1, NGGT implemented 52 NIA projects. In 2014-15, NGGT has continued with, and implemented new projects across areas such as: safety; environment; reliability; system operability; commercial, and strategy. Forty-seven NIA projects were undertaken by NGGT in 2014-15, with NGGT's spend on individual projects ranging from £0.2 million to £1.2 million. In total NGGT spent £4 million on NIA projects in 2014-15.

3.4. Examples of NIA projects include:

- the Stress Concentration Tomography Pipeline Inspection System: a tool being developed by NGGT which uses non-invasive surface survey technology for pipeline inspection
- Building Information Modelling, which aims to create 3D models of assets with Virtual Reality walk-throughs to apply to construction projects
- Hot Tap Buried Sample Probe: installing new gas analysers across the NTS to replace obsolete analysers

[20] https://www.ofgem.gov.uk/network-regulation-riio-model/network-innovation/gas-network-innovation-allowance
[21] https://www.ofgem.gov.uk/network-regulation-riio-model/network-innovation/gas-network-innovation-competition
[22] https://www.ofgem.gov.uk/network-regulation-riio-model/network-innovation/gas-network-innovation-allowance

- research to improve the quantification of leakage from the NTS. £175,000 of NGGT's NIA allowance was allocated to its NIC preparation bid.

3.5. Details of individual projects are on National Grid's NIA Project Portfolio website.[23]

3.6. All NIA projects are registered on the Energy Networks Association Smarter Networks Portal.[24] For monitoring, licensees are required to publish an update on the progress of NIA projects each year. For any projects that have been completed in the previous six months, NGGT must also publish a close-down report.

Network Innovation Competition

3.7. The NIC[25] encourages network licensees (distribution and transmission) to innovate in the design, build, development and operation of their networks. The proposed benefits of such projects include the ultimate lowering of costs for the consumer and GB's move to a low carbon economy. The NIC provides up to £18 million of funding to a small number of large-scale innovation projects as part of the annual competition.

3.8. NGGT successfully submitted and undertook one NIC project in 2014-15. This project was allocated £5.7 million to be funded through the 2015-16 term. £300,000 was spent on this project in 2014-15.

3.9. Project GRAID (Gas Robotic Agile Inspection Device) will develop a robotic platform able to enter buried pipework at high-pressure installations currently unable to be reached by Pipeline Inspection Gauges (PIGs). The robotic platform will let the condition of complex pipeworks be inspected remotely, avoiding the need for intricate excavations. It provides a non-invasive, cost-effective, and less labour-intensive alternative to PIGs.

3.10. It is expected Project GRAID will allow NGGT to save almost £60 million and generate carbon savings of more than 2,000 tonnes over the next 20 years. This will result in a cost-saving for the consumer, as well as facilitating GB's move toward a low-carbon economy.

3.11. NIC projects are subject to comprehensive monitoring, and are required to submit reports to Ofgem every six months detailing their progress. These reports are based on a common template which sets out the information NGGT is required to include, such as progress against deliverables, budgeting, and learning over the period.

[23] http://www2.nationalgrid.com/UK/Our-company/Innovation/Gas-transmission-innovation/NIA-Projects/
[24] http://www.smarternetworks.org
[25] https://www.ofgem.gov.uk/network-regulation-riio-model/network-innovation/gas-network-innovation-competition

4. TO costs

Chapter Summary

This chapter evaluates RIIO-T1 actual and forecast expenditure against the costs allowed in the RIIO-T1 settlement, taking into account actual and forecast workloads. It looks at the various cost categories and activities which make up total expenditure (totex). It also explains how we incorporate uncertain costs.

Total expenditure performance and forecasts

4.1. As part of RIIO-T1, we set a total expenditure allowance (totex) to enable NGGT to deliver its outputs. NGGT is incentivised to outperform its totex allowance as part of the totex incentive mechanism (TIM). Any outperformance is shared with the customer. For RIIO-T1, 44.36%[26] of any outperformance is retained by the company and the remainder, subject to a tax adjustment, is returned to customers through reduced allowed revenues. Any underperformance (overspend) against allowed totex is similarly shared with the customer.

4.2. NGGT's reported annual totex is used to determine future revenue with any out/underperformance adjusted after a two-year lag. This should ultimately affect consumers' gas bills, but relies on NGGT's customers, the gas shippers, passing this on.

4.3. Throughout RIIO-T1 we will monitor NGGT's actual totex and will compare this with allowances set and its annual forecast. NGGT will have to explain any variances as part of its annual reporting. When looking at NGGT's annual performance, it is essential to put this in the context that outputs should be delivered over the full eight-year price control period.

4.4. A fundamental change between the previous price control and the RIIO framework is that NGGT is now free to deliver outputs based on total whole life costs without being constrained to using either operating expenditure (opex) or capital expenditure (capex). This lets NGGT select the best solutions and optimises costs and benefits.

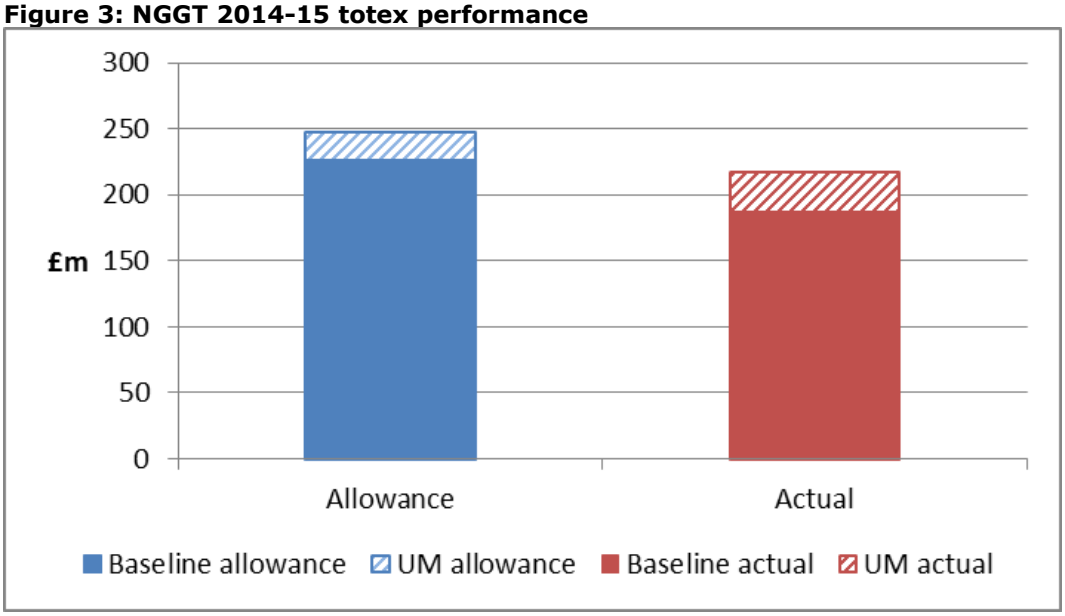
4.5. We will still monitor performance against capex and opex allowances to help us understand overall totex performance. For capex, we discuss load-related expenditure (increasing the size or reinforcing the network to accommodate new connections) and non-load-related expenditure (maintaining the existing network). This chapter provides greater detail than may be expected in the RIIO price control

[26] Please refer to our RIIO-T1 Final Proposals
https://www.ofgem.gov.uk/sites/default/files/docs/2012/12/1_riiot1_fp_overview_dec12_0.pdf

model. The reasons are: there is no benchmarking between companies as in electricity and gas distribution, NGGT has forecast underspends against allowances, the allowances in some areas relate to single multimillion-pound projects, and, we believe some of the changes in forecast will affect how NGGT might or might not achieve its outputs.

2014-15 performance

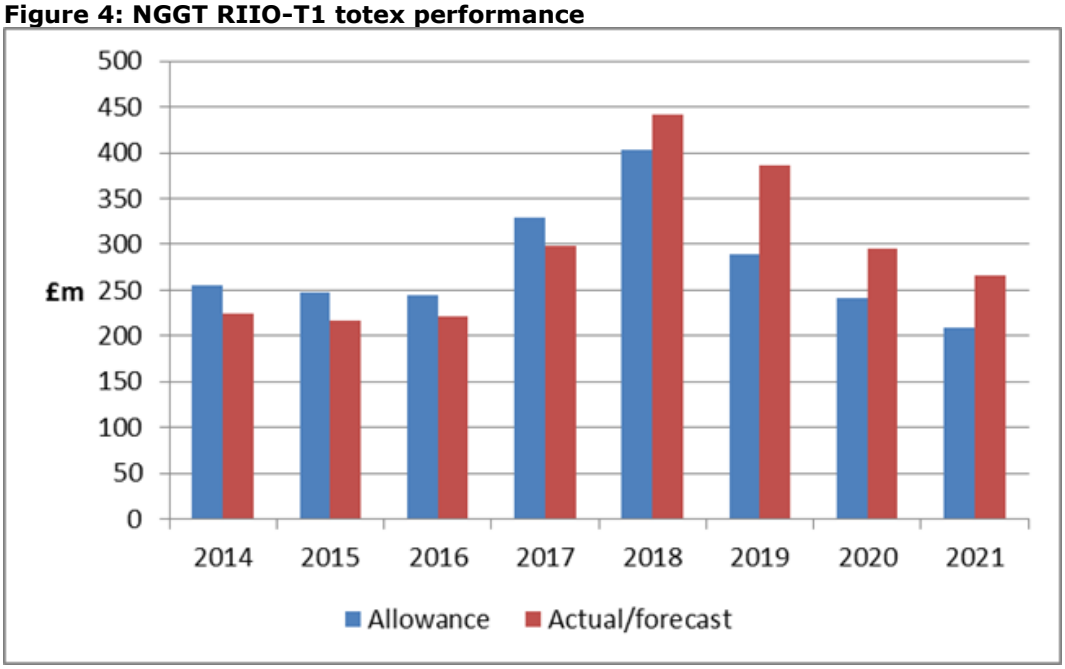
Figure 3: NGGT 2014-15 totex performance



4.6. Figure 3 shows that NGGT has spent 14% below its allowance for 2014-15 including £30.2 million on projects related to uncertainty mechanisms (UMs). These are discussed in the capex section below.

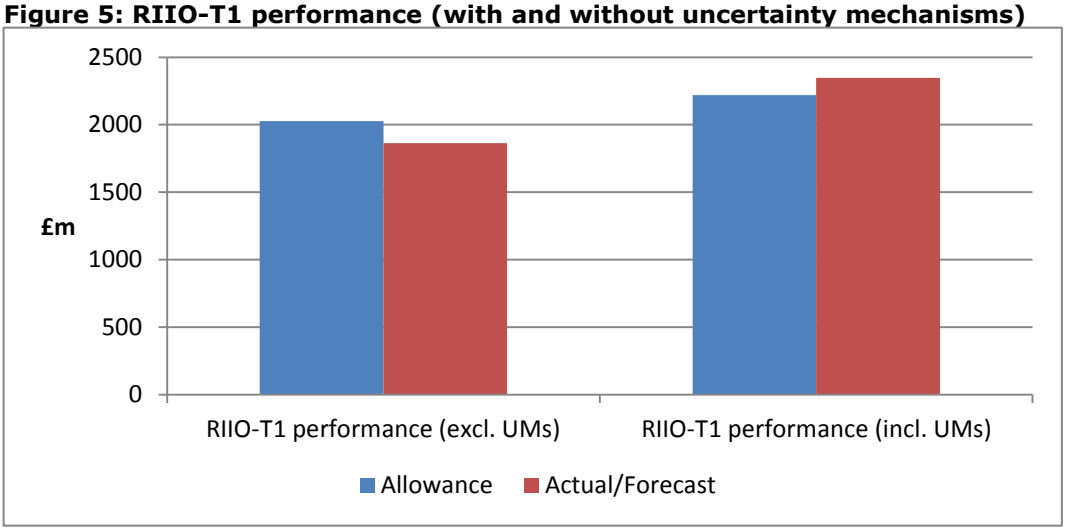
Forecast performance during RIIO-T1

Figure 4: NGGT RIIO-T1 totex performance



4.7. Figure 4 above shows the forecast RIIO-T1 totex performance compared with their allowance. For the 'actual' figures, the first two years are reported figures and the remaining years are the latest forecast.

Figure 5: RIIO-T1 performance (with and without uncertainty mechanisms)



4.8. Figure 5 shows that NGGT is forecasting costs (including uncertainty mechanisms) of £2348 million compared to its allowance of £2218 million during RIIO-T1. However, NGGT's forecast figures were provided before our decision on uncertain costs (for enhanced physical security and emissions costs). If we just compare the baseline allowances against forecast costs, NGGT is forecasting an underspend of £164 million against an allowance of £2028 million.

4.9. However, information received in this year's submission reaffirms our view (as stated in our 2013-14 annual report) that NGGT will underspend totex allowances by approximately £400 million at the end of the price control. Our view is based on the information provided by NGGT on load-related capex allowances, such as the Avonmouth pipelines and the flexibility expenditure. Similarly, NGGT's approach in delivering non-load-related projects, such as the compressors' emissions projects and continued underspend in asset health support our previous views. We will continue to monitor NGGT's spend in these areas and update our forecast through the rest of the price control.

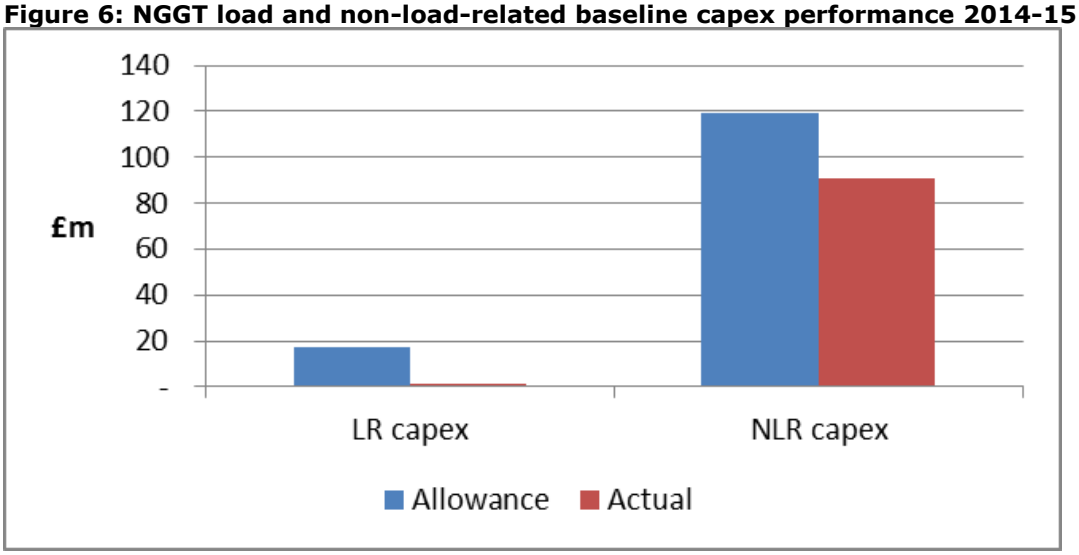
4.10. We comment further on these projects below.

Network baseline capital expenditure (capex) and forecasts[27]

4.11. This section looks at the baseline allowances compared to actual and forecast figures. Unless otherwise indicated, it does not include the allowances for the uncertain costs applied for during the 2015 reopener window.

4.12. NGGT received £1241 million for baseline load-related and non-load-related capex during RIIO-T1. The actual spend in the 2014-15 year has been £92 million against funding of £136 million. Figure 6 below shows NGGT's overall capex delivery compared against allowances for the 2014-15 year.

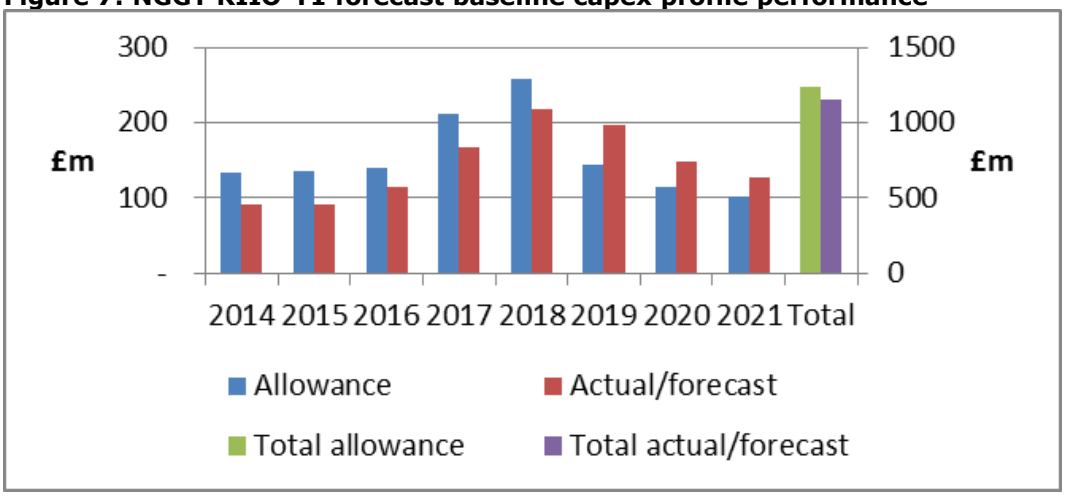
Figure 6: NGGT load and non-load-related baseline capex performance 2014-15



4.13. Figure 7 below shows the forecast profile of baseline capital expenditure during RIIO-T1. This figure is updated from the 2013-14 annual report, as it takes into consideration the actual expenditure during the 2014-15 year. NGGT is expecting to underspend its RIIO-T1 capex allowances by approximately £85 million.

[27] Load related and non load related only. Excludes non-operational capex.

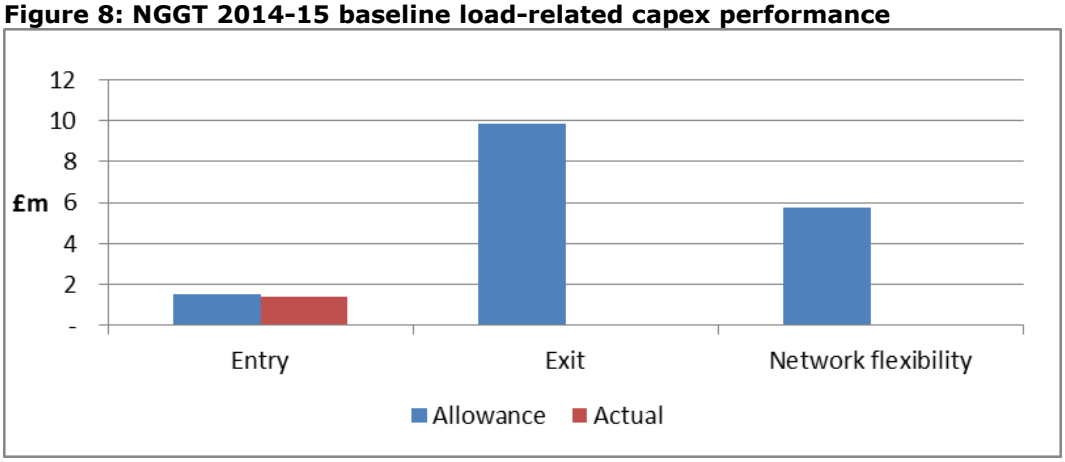
Figure 7: NGGT RIIO-T1 forecast baseline capex profile performance[28]



NGGT load-related capex

4.14. Figure 8 below shows the comparison between allowances and actual spend for load related capex for 2014-15.

Figure 8: NGGT 2014-15 baseline load-related capex performance



4.15. NGGT was funded primarily to deliver the following projects:

- Network capability to maintain the 1-in-20 obligation in Scotland. This involved projects at strategic locations within the national transmission system (NTS), such as reverse flow modifications at compressor sites. These projects were aimed at reversing flows of natural gas towards Scotland in order to replace declining volumes of UK Continental Shelf (UKCS) gas in case of 1-in-20 demand scenarios

[28] NGGT's forecast capex against RIIO allowances excludes revenue drivers, uncertainty mechanisms and non-operational capex.

- Two 900mm pipelines ('pipeline solution') as a replacement of the Avonmouth Liquefied Natural Gas (LNG) storage facility, which was expected to be decommissioned in 2018. This solution was the one proposed by NGGT in its RIIO-T1 business plan as the most appropriate one through its optioneering. To avoid risks relating to security of supply, we provided funding for the two pipelines.

4.16. Further to the information provided in its 2013-14 submission, NGGT has indicated that:

- The projects for the 1-in-20 obligation in Scotland have been deferred. It is not clear whether NGGT will deliver the asset solutions that were provided in its RIIO business plan[29]. NGGT has stated that it is using the latest supply and demand information to define the current network capability and the options available. Also, it will work with its customers and stakeholders to develop innovative ways to increase the current capability of the network before further refining asset solutions

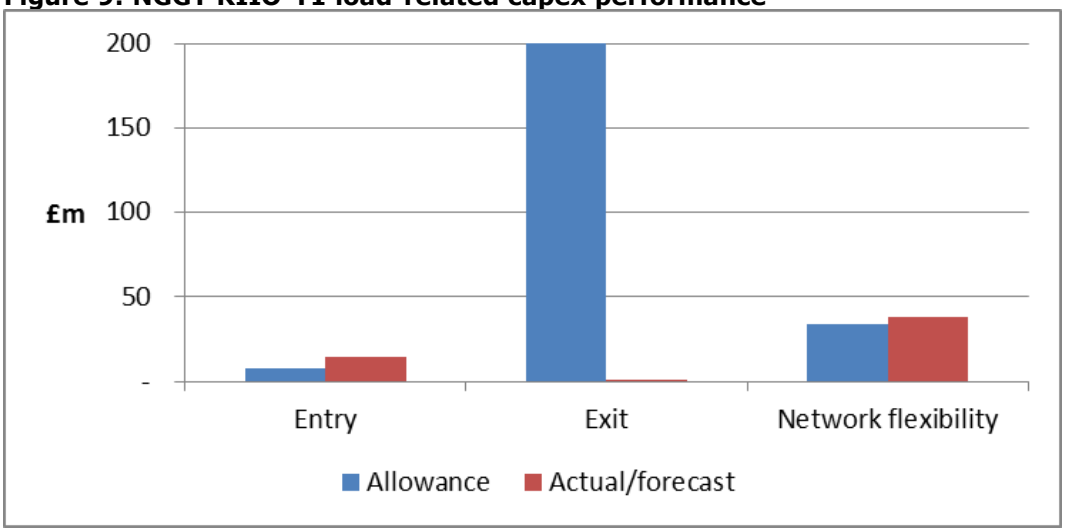
- NGGT reassessed the requirements of the transmission system following the decommissioning of the Avonmouth LNG storage facility through its Network Development Process (NDP). Also, NGGT consulted with the HSE on the impact of the planned close of Avonmouth on the NTS. This involved undertaking a risk assessment study to assess the risks of removing Avonmouth. As the risks were identified to be as low as reasonably practicable, NGGT has decided to not build the two new pipelines.

4.17. As a result, NGGT is underspending on its allowances on the second year of RIIO-T1 as can be seen in Figure 9 above. The two aforementioned projects represent the majority of the load-related allowances.

4.18. In light of the above, NGGT will be underspending compared to its ex ante load-related allowances by approximately £190 million throughout RIIO-T1. Figure 9 below shows the expected underspend compared to the load-related allowances because projects weren't delivered.

[29] Delivery of the asset solutions is dependent on ongoing discussions with stakeholders to discuss interactions between the networks and the impact on the 1-in-20 obligation.

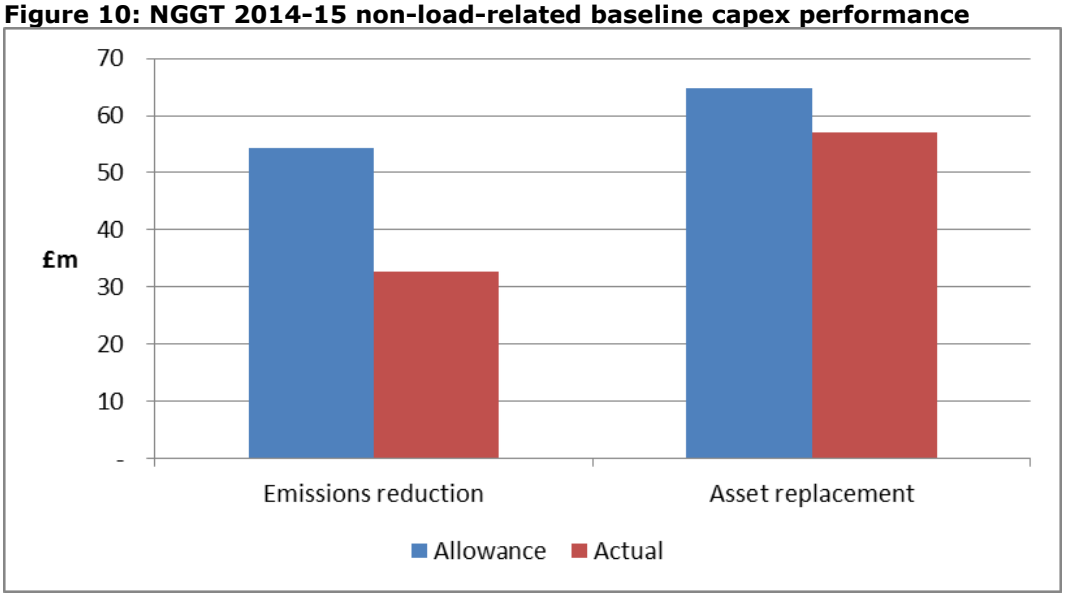
Figure 9: NGGT RIIO-T1 load-related capex performance[30]



NGGT non-load-related capex

4.19. Non load-related capex comprises expenditure from reducing the direct emissions resulting from operating the compressor fleet, and from maintaining or improving asset health (replacing assets at risk of failing) in order to maintain the NTS and enhanced physical security costs (eg improved security measures at NTS sites). Figure 10 below shows the performance for the baseline elements of non load-related capex.

Figure 10: NGGT 2014-15 non-load-related baseline capex performance



[30] Excludes forecast uncertainty mechanism costs (£2.3 million)

Emissions expenditure

4.20. NGGT was primarily funded to deliver the following projects:

- Two new compressor units at Aylesbury compressor station – one gas turbine-driven and one electricity-driven
- Two new electric-driven compressor units at Peterborough and Huntingdon (one at each site).

4.21. As we noted in our annual report for 2013-14, NGGT was spending RIIO-T1 allowances to deliver projects initiated at TPCR4. More specifically, NGGT has indicated that:

- The project at St. Fergus, involving the installation of two new 24MW electric Variable Speed Drive (VSD) has now achieved operational acceptance

- The project at Kirriemuir, involving the installation of one new 35MW electric VSD has now achieved operational acceptance

- The project at Hatton, involving the installation of one new 35MW electric VSD was due to achieve operational acceptance[31] at the time of the submission in July 2015.

4.22. In relation to the projects that were funded through RIIO-T1 allowances, NGGT is progressing with:

- Front End Engineering Design (FEED) study at Peterborough and Huntingdon. The projects will involve installing one new gas turbine-driven compressor at both compressor stations
- Installing oxidation catalysts at the exhaust stacks of the compressor units at Aylesbury. Detailed design work is complete and construction is expected to finish during 2016 for both units.

4.23. We note that NGGT is underspending compared to allowances and the majority of the expenditure in 2014-15 relates to TPCR4 emissions projects. Also, as we noted in our 2013-14 annual report, the allowances set for Peterborough and Huntingdon reflect the unit cost of an electric-driven compressor, which are higher than a gas turbine-driven one.

4.24. Following our decision on the Industrial Emissions Directive (IED) reopener in September 2015[32], the consultation on the Mid Period Review (MPR) and in light of NGGT's approach relating to the compressor works, we will:

[31] The projects at St. Fergus and Kirriemuir achieved operational acceptance during the 2015-16 reporting year. We are expecting further updates from NGGT on the operational acceptance of the project at Hatton.

- Consider further the impact of the introduction of the new compressor units on the operation of the entire fleet, ie the resulting reduction in the operation of other compressor units

- Reassess what funding is required for future emissions compliance projects.

Asset health

4.25. As we noted in our 2013-14 annual report, RIIO-T1 allowances were based on information from historic spending levels and NGGT's justification of its requirements.

4.26. NGGT is focusing its asset health activities on the secondary assets identified as those with the highest priority within the five primary asset categories[33]. However, NGGT is underspending on allowances.

4.27. NGGT is forecasting to spend above its allowances for the remaining six years of RIIO-T1. However, we note that:

- The current level of expenditure is approximately 20% lower than allowances for the first two years of RIIO-T1

- The priority and urgency indicated by NGGT in the business plan in relation to its asset health is inconsistent with how asset health activities are delivered. Such an example is the activities around the Bacton terminal, where NGGT is now starting a needs case review. During RIIO-T1 NGGT indicated that Bacton required urgent intervention and significant levels of expenditure to maintain its asset health.

4.28. Also, NGGT has indicated it is progressing with improving the data it holds for its assets to ensure:

- Optimisation of decisions for asset health; and

- Prioritisation of improvement activities.

4.29. In light of the above, NGGT needs to make significant progress to ensure that the NOMs methodology becomes an accurate and robust tool. This allows the NTS condition to be verified accurately, and set efficient future allowances. Figure 10 above shows the comparison between allowances and actual spend of non-load-related capex in 2014-15.

[32] Our decision on NGGT's application under the RIIO-T1 Compressor Emissions uncertainty mechanism, 30 September 2015
https://www.ofgem.gov.uk/sites/default/files/docs/2015/09/150928_ied_decision_letter_rev._c_2.pdf
[33] The primary asset categories of the NTS are Entry Points, Exit Points, Compressors, Pipelines and Multi-junctions.

Physical security

4.30. NGGT did not receive an allowance for physical security at the start of RIIO because the scope of work was uncertain. An uncertainty mechanism was included within RIIO-T1 whereby NGGT could apply for funding at the reopener window in 2015 and 2018.

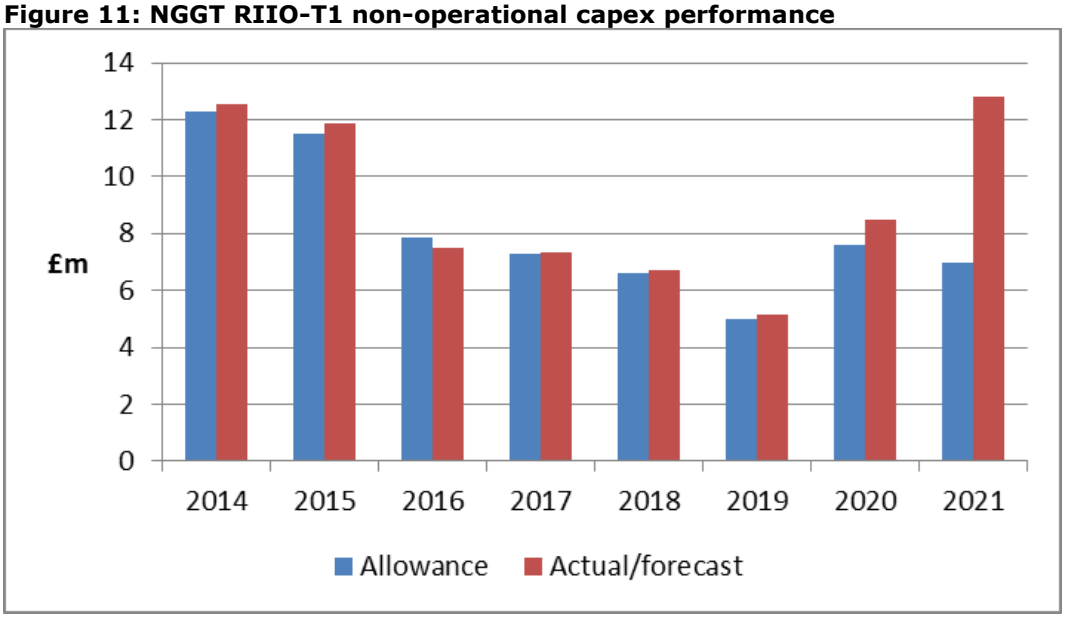
4.31. In September 2015, we published our decision[34] on NGGT's application which stated that we would provide £190.4 million (£161.9 million capex, £28.6 million opex) for this work during RIIO-T1. We have developed a new output which states that all sites included within the programme must comply with DECC's security requirement by the end of RIIO-T1. NGGT spent £23.8 million on capex costs for this project during 2014-15.

4.32. NGGT has received funding to enable all of its sites to meet this output with the exception of a small number of sites (shared sites) which are shared with other network companies. If required, NGGT may apply at the 2018 reopener for funding to enhance the security at these shared sites. We do not expect further applications for any other NGGT sites.

Non-operational capex

4.33. Non-operational capex is expenditure on non-network assets. This mainly includes expenditure on information technology but also includes costs incurred for land and buildings, vehicles, tools and equipment.

Figure 11: NGGT RIIO-T1 non-operational capex performance



[34] https://www.ofgem.gov.uk/sites/default/files/docs/2015/09/physical_security_decision_letter_-_september_2015_0.pdf

4.34. NGGT has spent £11.9 million on non-operational capex during 2014-15 which is marginally above its allowance. Over the course of RIIO-T1 it forecasts it will spend £72 million which is an overspend of £7 million.

4.35. Over half of this year's expenditure is made up of IT costs (£6.7 million). These costs include expenditure on its Transmission Front Office programme which aims to improve the delivery of NGGT's planned maintenance programmes. As part of this programme, NGGT will be replacing its current asset management systems which should lead to improvements in the planning and delivery of projects.

4.36. £3.6 million has also been spent on land and buildings. Notable projects include a new multi-storey car park at NGGT's head office and significant improvements to its Ambergate site.

Operating costs (Opex) and forecasts

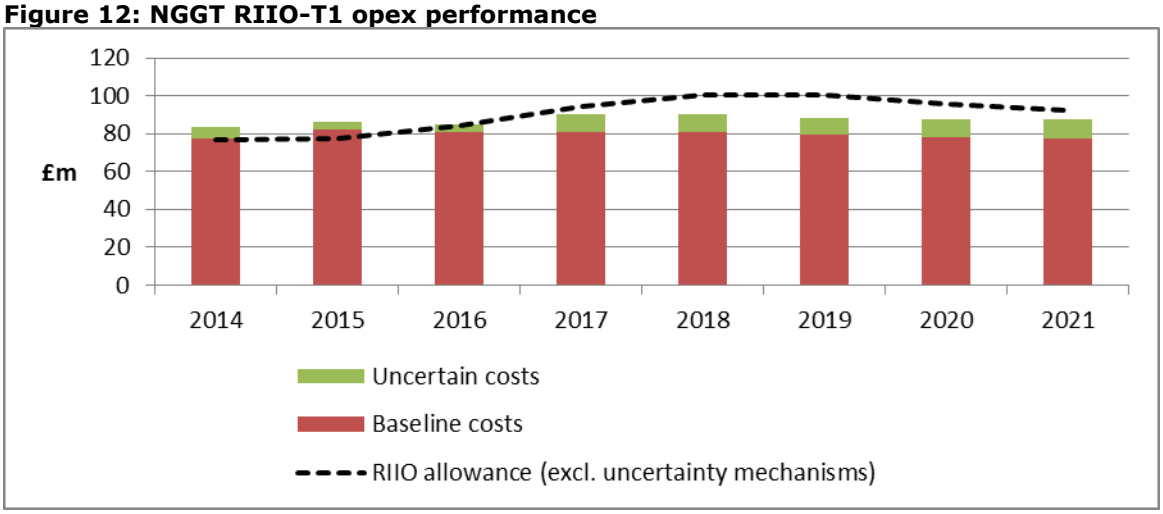
4.37. Operating expenditure (opex) are the costs incurred in the day-to-day operation of the network. Opex can be further split into:

- Direct opex
- Business support costs
- Closely associated indirect costs (CAI)

4.38. 'Direct opex' refers to inspections and maintenance of network assets. 'Business support' refers to costs that support the overall company such as IT, telecoms, property management and insurance. 'CAI' refers to costs which are linked, but not directly related to capex and direct opex activities. CAI includes operational training, engineering management and project management costs.

4.39. The chart below shows the actual costs incurred by NGGT compared to its allowances. The figures for 2013-15 are actual costs, and the figures from 2015 onwards are forecast.

Figure 12: NGGT RIIO-T1 opex performance



4.40. NGGT's baseline opex costs for 2014-15 are £86.4 million compared to its RIIO-T1 allowance of £79.5 million. NGGT's expenditure in this category is mainly due to business change costs incurred in the business support area. During the RIIO-T1 period, NGGT forecast opex costs of £699 million compared to its allowance of £751 million.

Direct opex

4.41. NGGT spent £42.9 million on direct opex in 2014-15 compared to its RIIO allowance of £43.5 million. NGGT has underspent due to the impact of the changes in its UK operating model and initiatives to drive down costs. However, an overspend on its uncertain costs (enhanced physical security) has evened this out so that the actual costs roughly match its allowances.

4.42. NGGT forecast direct opex costs of £355 million over the course of RIIO-T1 against an allowance of £452 million (an underspend of £97 million). NGGT states that approximately £82 million of this underspend is due to Industrial Emissions Directive (IED) compressor opex costs which have now been moved to its capital expenditure plan.

Business support

4.43. NGGT is currently spending more than its allowance on business support and forecasts total RIIO-T1 costs of £201 million against its allowance of £144 million. It states that this is due to business change costs as well as the challenging level of opex allowances which is expected to lead to improved performance and efficiency with regard to opex costs.

Closely associated indirects

4.44. NGGT is currently spending slightly more than its allowance on CAI costs. However, it forecasts an underspend of £12 million against an allowance of £155 million by the end of RIIO-T1.

5. System Operator performance

Chapter Summary

This chapter discusses NGGT's performance as the NTS system operator.

5.1. NGGT is the gas transmission System Operator (SO) responsible for balancing the high pressure gas NTS on a continuous basis across Great Britain. It has responsibility for the residual balancing activities on the NTS and its transportation licence requires it to act in an efficient, economic and co-ordinated manner in performing its role.

5.2. In order to fulfil its role, NGGT buys and sells gas and procures associated services. As SO, NGGT undertakes the physical management of the NTS using compressors and Operating Margin (OM) gas to maintain safe pressure on the system. It also provides information to market participants such as demand forecasts. The costs of these actions are recovered via charges to market participants and are ultimately borne by consumers.

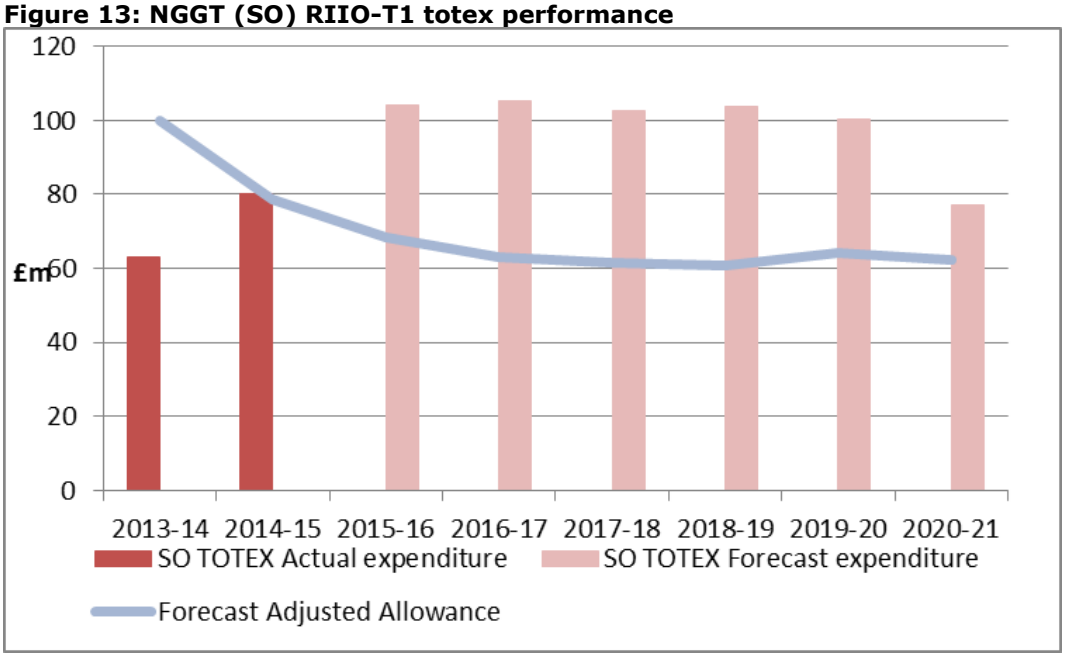
5.3. The Gas SO incentive scheme is designed to motivate NGGT to reduce the costs of operating the network and to promote innovation in the way the system is run. The key objective of the scheme is to place commercial incentives on the SO to manage costs of system operation as efficiently as possible, in order to reduce overall cost to the consumer.

5.4. A new incentive package was introduced on 1 April 2013 with most of the incentives being set for an eight-year period to align with the RIIO-T1 price control.

SO internal costs

5.5. NGGT (SO)'s internal costs are mostly made up of IT and staff costs which enable NGGT (SO) to carry out its various activities. Figure 13 below shows NGGT (SO)'s actual and forecast expenditure over the RIIO-T1 price control period against its adjusted totex allowances.

Figure 13: NGGT (SO) RIIO-T1 totex performance



5.6. NGGT's eight-year SO totex allowance is £559 million, with its forecast totex expenditure being £736.5 million. For the 2014-15 period, NGGT's SO totex expenditure was £80.3 million against an allowance of £78.7 million. NGGT's eight-year SO Capex forecast indicates that NGGT will overspend on its allowances. NGGT's forecast SO capex expenditure across RIIO-T1 is £293.5 million against an allowance of £193.8 million.

5.7. Some of this overspend can be attributed to increased expenditure in the areas of cyber security and market facilitation. It says this increase in spending is dependent on the level of additional investment required to deliver its data centres (£54 million) and cyber security (£4 million) programmes.

5.8. At Final Proposals, we provided over £35 million to National Grid for its data centres programme[35]. We stated that this was to cover necessary refurbishments and upgrades to data centres. We did not consider that National Grid had provided sufficient justification for its preferred solution which included the construction of new data centres.

5.9. NGGT has indicated that its preferred solution is still to construct new data centres and that it may apply at the 2018 reopener window for additional funding. It is currently consulting with the Department of Energy and Climate Change (DECC) to ascertain what levels of cyber security will be necessary, and what this implies for data centres. We will continue to work with National Grid and DECC to understand the requirements in this case.

[35] Split between NGGT (42%), National Grid Electricity Transmission (42%) and National Grid's Gas Distribution Networks (16%). NGGT's share is £15 million.

SO Capital Expenditure

5.10. NGGT spent £32.4 million on SO capex in 2014-15, against an allowance of £32.6 million. Projects of significant cost primarily fell within the area of Operational Control, and include:

- **iGMS Evolution Programme (iEP**), on which £14.3 million was spent in 2014-15 across four separate projects within the operational control category. iEP is a multi-year business change and asset refresh programme designed to deliver a new array of fully supported operational control and reporting analytics systems
- **Gas National Control Centre (GNCC),** on which £3.8 million was spent in 2014-15. This project was completed in 2014-15 and redeveloped the GNCC and NGGT state this initiative has led to improved working practices between their control room and supporting functions, improved productivity and reduced risk of process safety incidents
- **The Telemetry Site Infrastructure Refresh** project ensures the refresh of gas telemetry equipment to align with NGGT's asset refresh policy. NGGT spent £2 million on this project in 2014-15.

6. Financial performance

Chapter Summary

This chapter presents the opening and closing position of the regulatory asset value (RAV) for RIIO-T1 and NGGT's return on regulatory equity (RoRE) performance. It also identifies the contribution of each main element to the total RoRE.

Regulatory Asset Value

6.1. Regulatory Asset Value (RAV) is a financial balance representing the capitalised component of total expenditures on, in the case of NGGT, building, maintaining and operating the network assets used to transmit gas. The opening RAV balance for NGGT for RIIO-T1 is the closing RAV balance from TPCR4. Additions to the RAV during RIIO-T1 are based on the proportion of totex (ie the totex capitalisation rate) that we remunerate over the longer term. The relevant capitalisation rate for each transmission (TO) was set at RIIO-T1 Final Proposals, and for NGGT TO is 64.4%. The closing RAV is calculated as:

- Opening RAV *plus* RAV additions (net of disposals) *minus* RAV depreciation

6.2. The price control allows licensees a return on RAV and return of money invested in the RAV, which comprises:

- A return on the RAV to compensate the risk and opportunity cost borne by shareholders and debt holders who fund the capitalised expenditure (the weighted average cost of capital or WACC).

- An allowance to reflect depreciation over the average useful life of regulated assets. Depreciation allowances are included in allowed revenues and deducted from the RAV.

6.3. For each of NGGT TO and System Operator (SO), Table 9 presents the opening RAV at the start of RIIO-T1, the closing RAV at 31 March 2015, and the forecast RAV at the end of RIIO-T1.

Table 9: RAV movement schedule for 2013-14 to 2014-15 and forecast RAV to the end of RIIO T1

NGGT Regulatory Asset Value (RAV) £m 2014-15 prices	NGGT		
	TO	SO	Total
Opening RAV (before transfers) at 1 April 2013	4,775	63	4,838
Transfers (from non-core RAV)	286	-	286
Opening RAV (after transfers)	5,061	63	5,124
RAV additions (after disposals)	393	61	457
Depreciation	(334)	(29)	(363)
Closing RAV at 31 March 2015	5,121	95	5,219
Forecast RAV at end of RIIO-T1 (31 March 2021)	6,016	132	6,346

6.4. Table 9 shows an increase in the RAV from the start of RIIO-T1 to 31 March 2015, and a forecast further increase through to the end of RIIO-T1, for both NGGT TO and SO. In the case of NGGT TO the increase in RAV from 1 April 2013 to 31 March 2015 is £346m (£5,121m - £4,775m). This increase is driven by two components: first, there are transfers into the core RAV from non-core RAV (see below for details on non-core RAV); and second, RAV additions exceed depreciation. Both these components are forecast to continue to apply in a similar way over the remaining six years of RIIO-T1, resulting in RAV increasing by some £1,241m (£6,016m - £4,775m) over the full duration of RIIO-T1.

6.5. The RAVs presented in Table 9 above are for NGGT's core RAV and exclude non-core RAV. Non-core RAV relates to revenue driver projects.[36] These are held outside of the core RAV to avoid double-counting of tax already allowed in the revenue drivers pre-tax revenues. NGGT TO's non-core RAV at the start and end (forecast) of RIIO-T1 are presented in Table 10. By the end of RIIO-T1 all non-core RAV will have been depreciated or transferred to core RAV (on project specific transfer dates).

Table 10: Starting and (forecast) closing non-core RAV, though RIIO-T1

NGGT TO Non-core RAV £m 2014-15 prices	NGGT TO
Opening RAV at 1 April 2013	651
RAV additions	368
Depreciation	(39)
Transfers to core RAV	(980)
Closing RAV at 31 March 2021	0

Returns on Regulatory Equity (RoRE)

6.6. Regulatory equity represents the proportion of average annual RAV that is funded by shareholders (also known as 'Equity RAV'). This is based on the notional

[36] In the fourth Transmission Price Control Review (TPCR), covering the period from 2007-2012, Ofgem set revenue drivers for NTS gas entry points, anticipated large incremental exit projects, and small incremental projects in the South West zone that when aggregated were large enough to require a revenue driver.

gearing (of 62.5%) set at Final Proposals and which results in equity proportion of 37.5% for NGGT.

6.7. Returns on regulatory equity (RoRE) include the post-tax cost of equity set at RIIO-T1 Final Proposals plus revenue adjustments, eg for actual or forecast outperformance or underperformance against our Final Proposals. RoRE provides a view of what investors could earn over the course of the RIIO-T1 price control period.

6.8. In summary, we calculate the eight-year average RoRE in excess of the baseline cost of equity using the following formula:

$$\frac{\text{Average Deviation from Base line Revenue}}{\text{Average Equity RAV (TO + SO)}}$$

Where "deviation from baseline revenue" is the sum of:

- NGGT's share of underspend (or overspend) on totex for TO and SO activities
- Information Quality Incentive (IQI)[37] income deduction
- Incentive rewards (or penalties) from various outputs.

6.9. An estimate of NGGT's RoRE over the eight years of RIIO-T1 is in Table 11. This estimate is based on actual values for year one (2013-14) and year two (2014-15), and forecasts for the remaining six years of RIIO-T1. Forecast levels of totex are as provided by the company. For other components, the average level of performance from the first two years is assumed to continue for the remaining six years.

Table 11: Eight-year average RoRE forecast for RIIO-T1

	Baseline (post-tax cost of equity)	**IQI additional income / deduction**	**Totex (TO)**	**Output incentives**	**SO**	**Total**	*TPCR4 RoRE achieved (TO)*
NGGT	6.8%	(0.1%)	0.2%	0.2%	0.9%	**8.0%**	*7.4%*

[37] An incentive designed to ensure network companies provide accurate forecasts in their business plans.

6.10. The combined RoRE for NGGT TO and SO is 8.0%, some 1.2% in excess of the post-tax cost of equity. The majority of this difference (0.9%) comes from various earned (and forecast) incentive payments to the SO. The three incentive mechanisms which make the most significant contribution to the forecast 0.9% are in relation to constraint management (0.4%), shrinkage gas (0.2%), and quality of demand forecasting (0.1%).

6.11. RoRE for the TO alone is around 7.1%. This is slightly below the RoRE achieved by NGGT TO in TPCR4, of 7.4%. As shown in Table 11, outperformance on totex increases NGGT TO's RoRE by 0.2% across the eight years. Performance on TO totex is not uniform in each year of the period. In the first five years there is (actual and forecast) outperformance, while in the final three there is forecast underperformance. This suggests a reprofiling of TO totex across RIIO-T1 (see Figure 4).

6.12. The above RoRE values are sensitive to the forecasts used. For example, assuming that NGGT achieves no further incentive payments (or penalties) for the remaining six years of the price control (with exception of meeting its totex forecast) the combined TO and SO RoRE falls to 7.3%. This is the same as was achieved by NGGT TO over the duration of TPCR4.

Appendix – Customer bill impact methodology

1. For this year's Annual Report, we have revisited our customer bill impact methodology. In the previous RIIO Transmission Annual Report 2013-14 we assessed bill impact by applying the percentage movement in revenues (from 2012-13 to 2013-14) to an estimate of the gas transmission component of the average household gas bill in 2012-13. Our bill impact methodology for this year's Report, described below, is based on gas transportation charges for the relevant years.

2. NGGT recovers its allowed revenues through a range of transportation charges, including entry and exit charges. For the purposes of the bill impact methodology, we include exit charges, which are the network costs met directly by suppliers and which we assume are passed on in full to households. We do not, however, include entry charges, which are assumed to be passed through to consumers indirectly, through the wholesale price of gas.

3. The following exit charges are included in our estimates of the gas transmission network cost component of the average customer's bill:

- TO exit commodity charge;
- SO exit commodity charge; and
- TO exit capacity charge.[38]

4. The commodity charges are applied to the average annual consumption by Local Distribution Zone (LDZ) and the capacity charge to the average daily maximum consumption by LDZ. These volumes and capacity were provided by the GDNs and are the same as those used in the RIIO-GD1 Annual Report 2014-15.

[38] These charges are available from the Charging Statements published on the Joint Office of Gas Transporter's website: http://www.gasgovernance.co.uk/.