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Consultation

RIIO-2 Sector Methodology Annex (Gas Transmission)

Publication date	18 December 2018	**Contact:**	RIIO Team
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Response deadline	14 March 2019	**Tel:**	0207 901 7378
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We are consulting on the application of the RIIO-2 Framework for National Grid Gas Transmission (NGGT). This document sets out our proposals in several areas including the proposed outputs that NGGT would need to deliver over the price control period, the associated incentive mechanisms, and our proposals for managing uncertainty. NGGT's stakeholder engagement will be vital to develop well-justified Business Plans and this document also highlights key areas that should be focused on.

This document is an Annex to the RIIO-2 Sector Methodology consultation and should be read alongside it.

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

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1. Document structure

This document is intended to be read alongside the RIIO-2 Sector Methodology document to gain the full context and detail on each of the topic areas. To aid readers we have set out the structure of this document and how its content fits within the suite of RIIO-2 publications.

Structure of this document and associated documents

1.1 In July 2018 we published the RIIO-2 Framework Decision which sets out our proposed approach to the RIIO-2 price control, and highlighted the main areas of proposed change from the current price control, RIIO-1. This consultation comprises the RIIO-2 Sector Methodology (Core Document) and sector specific annex documents for gas distribution (GD), gas transmission (GT), electricity transmission (ET), and the electricity system operator (ESO). The sector specific documents are intended to be read alongside the Core Document.

The Core Document

1.2 The Core Document also contains sections on the application of RIIO-2 that is common across ET2, GT2, GD2, and the ESO price control, for example, the proposed approach to innovation in RIIO-2, cross-sector uncertainty mechanisms and how network companies should work with their stakeholders to develop bespoke outputs.

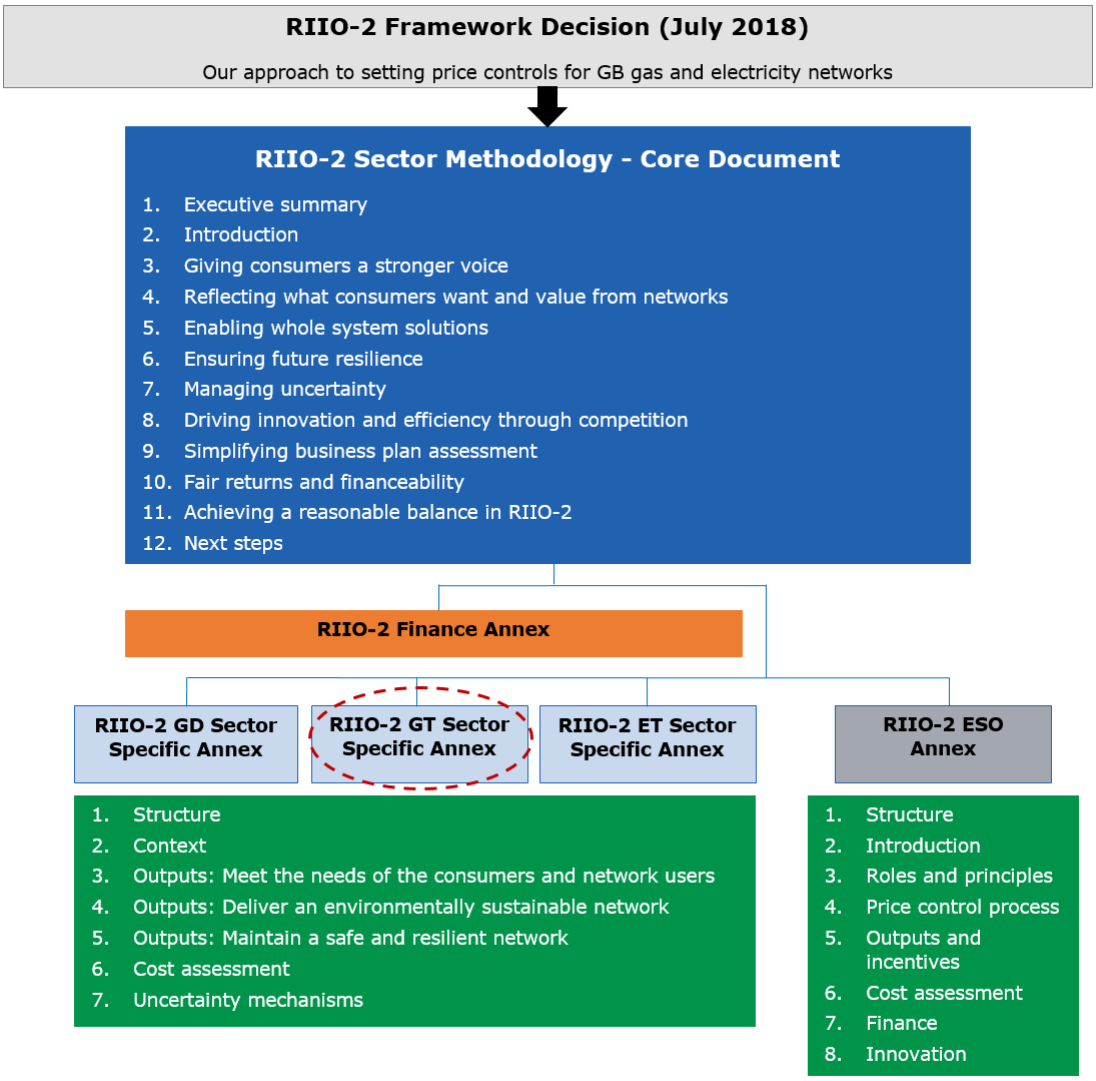
This document

1.3 This document is focused on the application of the RIIO-2 framework, established as part of the Framework Decision to gas transmission issues. It sets out our current views on the aspects of the RIIO-2 price control that National Grid Gas Transmission (NGGT) needs to understand to be able to put together its Business Plans.

1.4 The GT sector specific consultation document is structured as follows:

- Chapter 2 – context - an overview of the sector and the key challenges
- Chapter 3 - proposed outputs that we would expect to be delivered in the first output category: Meet the needs of the consumers and network users
- Chapter 4 - proposed outputs that we would expect to be delivered in the second output category: Deliver an environmentally sustainable network
- Chapter 5 - proposed outputs that we would expect to be delivered in the third output category: Maintain a safe and resilient network
- Chapter 6 - our proposed approach to cost assessment in RIIO-2
- Chapter 7 - our proposed uncertainty mechanisms
- Appendix 1 - Daily physical flow and baseline values for a selection of gas entry points
- Appendix 2 - Maximum day exit flows in relation to peak flows on a zonal basis
- Appendix 3 -includes a full list of all the consultation questions.

Figure 1: RIIO-2 Document Structure



How to respond to this consultation

1.5 We want to hear your views on this consultation. Please send your response to the RIIO2@Ofgem.gov.uk by 14 March 2019.

1.6 Please refer to the Core Document for further detail on how to respond, data and confidentiality, and how to track the progress of the consultation.

2. Context

This section sets out the context in which we will set the next price control for gas transmission. This includes some of the key challenges for the gas transmission sector and the engagement that has taken place so far to inform this document.

What is gas transmission?

2.1 Britain's gas transmission network, the National Transmission System (NTS), is the 7,600 km of high pressure pipeline which transports gas from the entry terminals to gas distribution networks, or directly to power stations and other large industrial users. It is owned and operated by NGGT, which is the sole Gas Transmission Operator (GTO) and Gas System Operator (GSO) in Great Britain. NGGT's duties and obligations are set out in its licence and in legislation.

2.2 NGGT, in its role as the GTO, owns and maintains the network assets. It is responsible for maintaining the integrity of the networks, developing asset replacement schedules and for providing transmission services to the GSO.

2.3 NGGT, in its role as the GSO is responsible for the day-to-day operation of the national transmission system, including balancing supply and demand, maintaining satisfactory system pressures and ensuring gas quality standards are met.

2.4 The gas transmission price control will determine allowances for GTO costs, which include the cost of developing, maintaining and operating a safe and resilient transmission network. The regulatory framework for GSO activities distinguishes between internal and external GSO costs. The gas transmission price control will also determine allowances for internal GSO costs for NGGT. Allowances for internal GSO costs cover costs such as staff and IT that are employed to deliver the GSO functions. Separately, incentives on external GSO costs help minimise system operation costs. There are interactions between the GSO and GTO arrangements which are relevant to setting outputs and incentives.

Why does transmission matter to consumers?

2.5 Gas transmission charges make up around two per cent of the average household energy bill for gas. The gas transmission network has a critical role to play in connecting sources of energy to consumers and may play an important part in the transition to the low carbon economy. The gas transmission network also impacts consumers in other ways, including through its direct emissions.

Challenges for RIIO-2

2.6 The gas landscape has changed considerably over the past 20 years in the UK, through developments in technology, changing business models and changing consumer behaviour. We expect this to continue during RIIO-2. The gas transmission network continues to develop and adapt to new prevailing norms and we expect NGGT's RIIO-2 Business Plans to reflect such changes.

2.7 The changes in the gas landscape have different impacts upon different aspects of NGGT's roles as GTO and GSO.

Challenges for RIIO-2: Gas Transmission Operator (GTO)

2.8 NGGT, in its role as the GTO, is responsible for the transportation of gas through the NTS from supply points to exit offtake points safely, efficiently and reliably.

2.9 The decline in overall levels of gas demand over the last ten years has meant that parts of the network are experiencing lower levels of utilisation at times and these developments are important when making decisions on how best to design and manage the NTS for current and future needs. Lower levels of overall demand mean that some parts are less stressed at times and future needs may not be as high as current ones, which can impact upon NGGT operations; for example, in the planning of new investments, asset replacement, maintenance and how best to utilise the compressor fleet whilst minimising costs but providing the flexibility that consumers expect.

2.10 We recognise that there are a number of future asset management challenges which NGGT will have to take into consideration when building its RIIO-2 Business Plans:

- efficiently manage the NTS to ensure it has the capability to meet the needs of future supply and demand patterns;
- address the risk of stranded assets and higher network charges in the future by responding to falling levels of demand;
- ensure that the NTS is sufficiently flexible to accommodate new and more diverse sources of gas supply;
- efficiently manage the requirements of any current or future legislative and regulatory requirements (this includes the ongoing compressor replacement programme to ensure compliance with environmental legislation which started in RIIO-1); and
- support the transition to the low carbon energy system and decarbonisation of heat.

2.11 We are proposing to put in place clear outputs and deliverables for NGGT in the area of network capability. This includes a requirement to carry out an annual network capability assessment, and a requirement to deliver a target level of network capability. The target network capability would be informed by NGGT's assessment of the future needs of NTS users. This would help ensure that investments in the gas transmission network are driven by clear user requirements.

2.12 We propose to work closely with the environmental regulators in Great Britain to put in place a clear set of Price Control Deliverables for work that NGGT may have to undertake over the RIIO-2 period to comply with compressor emissions legislation. We would also seek to ensure that NGGT is adequately funded for such work so that its statutory environmental obligations can be met in a way that delivers good value for consumers.

2.13 Declining levels of overall gas demand and lower asset utilisation rates in recent years also raises the risk of asset stranding in the future. Under current regulatory assumptions about gas transmission asset lives (45 years), there is a risk that future consumers pay for assets that are no longer required, thereby paying more than their fair share of the costs of those assets. In order to ensure a fair allocation of charges between current and future consumers, we are proposing to

consider whether our current assumptions on regulatory asset lives and depreciation remain appropriate for RIIO-2. Further details of our approach are set out in the Finance Annex.

2.14 We would expect that any change to our assumptions about regulatory asset lives and depreciation is taken into account by NGGT in its investment planning, potentially by applying a higher threshold for its investment decisions. This would ensure that assumptions used to support investment decisions, such as payback periods, are consistent with the period over which consumers are likely to pay for new network assets.

Challenges for RIIO-2: Gas System Operator (GSO)

2.15 NGGT, as the GSO, has the role of managing the day to day operation of the network including balancing supply and demand, maintaining system pressures and ensuring gas quality standards are met. We recognise that there are a number of future operability changes which NGGT will have to take into consideration when building its RIIO-2 Business Plans:

- managing residual balancing of the NTS and meeting contractual pressures in the face of increased variability in demand and supply
- managing the potential increase in diverse and decentralised gas supplies
- managing future 'whole system' interactions between NGGT and distribution operators as well as gas system and electricity system interactions.

2.16 As residual balancer of the GB gas market, NGGT has an obligation to take actions on the network if total gas supply does not equal (or is not close to) total demand on a daily basis at a national level. This is achieved through the management of linepack (NTS gas stock levels) within the system as well as ensuring NTS pressures remain within defined operational and safety limits.

2.17 Over the past few years, changes to within-day supply and demand patterns have had an impact on the actions that NGGT needs to take to efficiently and effectively move gas around the NTS. According to NGGT, this has led to a significant increase in the range between minimum and maximum stock level in the NTS seen within a gas day.

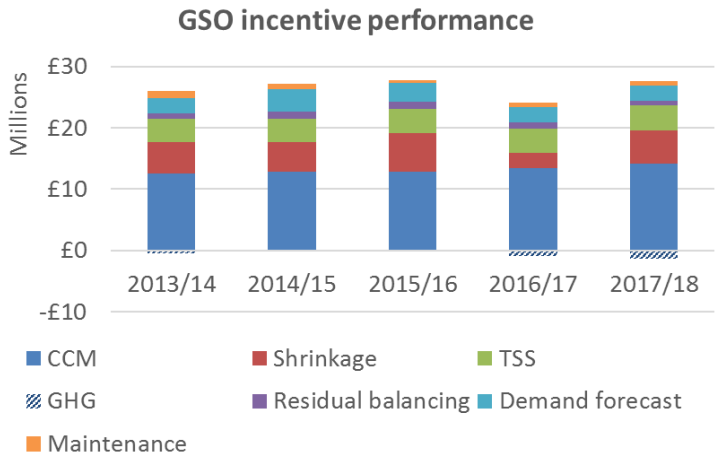
2.18 From the mid-1990s to 2000s, supply of gas to the UK was mainly from the UK Continental Shelf (UKCS). Gas mainly entered the system at entry points in the north and travelled southward. From the mid-2000s onwards, supply patterns have changed with a significant reduction in supply from the UKCS and investments made since 2005 have accommodated the changes in flows. Changes in supply have also affected the way in which network assets are utilised to move gas around the system.

2.19 For the RIIO-2 price control, we want to ensure that NGGT is challenged to build on its current levels of performance and make further improvements. Our analysis of GSO incentive performance during the first five years of RIIO-1 indicates that the GSO has outperformed its incentive targets, adding around 1% to the overall Return on Regulated Equity (RoRE).

2.20 Going forward, we want to ensure that GSO incentive targets and rewards are set at a level that delivers good value to consumers and other NTS users, and goes beyond 'business as usual'. We want to ensure incentives are in proportion to the challenges the GSO faces and the benefits it can deliver for consumers.

2.21 Figure 2 shows the GSO's performance against each of the incentives during the first five years of RIIO-1.

Figure 2: GSO incentive performance



CCM (Constraint Cost Management), TSS (Transportation Support Services), GHG (Greenhouse Gas)

2.22 From April 2019, the Electricity System Operator (ESO) will be a legally separate entity within National Grid group. As a consequence of this separation[1], we are proposing a bespoke price control for the ESO under RIIO-2. This price control will follow the overarching RIIO-2 design principles, but will be tailored to reflect the unique nature of the ESO, and the expected changes in its activities across the price control period. The approach to setting ESO incentives changed in April 2018 with a move away from setting mechanistic ex ante incentives and the introduction of an ex post single 'evaluative incentive'.

2.23 We have considered if we need to change our approach to GSO incentives and revenue control in the light of the recent actual and proposed changes to ESO incentives and revenue setting. We have concluded that the current ex ante approach for GSO incentives is still appropriate, given the gas system is more predictable than the electricity system and it is possible to set realistic and challenging targets for incentives.

2.24 We have also concluded that for now we do not need to change our approach to setting allowances for the GSO internal costs. Internal costs of the GSO are more stable and predictable than those of the ESO so we do not see a strong need for an approach that is more flexible to take into account big changes in the GSO's activities across the price control period.

2.25 However, we want to ensure that NGGT's Business Plan submissions and annual reporting of costs during the RIIO-2 period draw a clear distinction between GSO and GTO costs. We would expect NGGT to apply robust, transparent and consistent cost allocation approaches to allocate any shared costs between the system operation and transmission operator business.

2.26 We have also considered if different approaches to revenue and incentive setting for the ESO and GSO would cause inconsistencies or behavioural distortions, especially as the ESO and GSO report to the same senior management at National

[1] https://www.ofgem.gov.uk/system/files/docs/2017/08/future_arrangements_for_the_electricity_system_operator_-_response_to_consultation_on_so_separation.pdf

Grid. We think that issues could arise, for example with cost allocation. We will consider how we can mitigate these risks during the RIIO-2 process (for example, through clear cost allocation methodologies). If these risks cannot be mitigated, we may need to reconsider whether different approaches to incentives and/or revenues for the GSO would be more appropriate.

2.27 We are also mindful of the risks from an integrated GTO and GSO, particularly in terms of the scope for potentially harmful distortions to GTO investment planning and asset maintenance decisions. We want to ensure that the GSO manages the NTS in a manner that leads to lower overall system costs, and effectively supports the transition to the low carbon energy system.

2.28 All of this helps establish the context as we move to the next price control. The cross-sector objectives listed in the Core Document are just as applicable to gas transmission as they are to any other sector. In particular, we need to embed the output performance achieved in RIIO-1 and ensure that where incentives have led to a new 'business as usual', we use these to establish new baselines. We also need to keep costs down by ensuring that price control allowances reflect the efficient costs of delivering outputs that consumers want. The price control needs to remain flexible to the uncertain pathway towards the decarbonisation of heat to ensure consumers are protected from unnecessary or stranded costs, but also to ensure consumers can experience the benefits of any policy decisions in a timely and efficient manner.

Innovation

2.29 As part of the RIIO-2 price control we want to ensure NGGT continues to adopt innovative approaches to it operation and maintenance activities, along with wider strategic projects to support the Energy System Transition.

2.30 Our proposed common approach to the outputs and funding for work to bring more innovation into business as usual across the gas transmission, electricity transmission and gas distribution sectors is set out in chapter 8 of the Core Document.

Approach to competition in GT

2.31 In our RIIO-2 Framework Decision, we set out our intention to extend the role of competition where it is appropriate and provides better value for consumers. This included using the criteria for competition applied in onshore Electricity Transmission to identify projects suitable for competition in other sectors.

2.32 We think that large capital projects in gas transmission could benefit from the greater use of competition. The Core Document sets out our analysis of the appropriateness of applying our existing approach in the ET sector to gas transmission.

Making the price control simpler and clearer

2.33 In our RIIO-2 Framework Decision, we set out our ambition to make the next price control simpler and clearer for network companies, stakeholders and consumers.

2.34 In developing the methodology for the next gas transmission price control, we have reviewed the way in which the current price control has worked. We have

identified a number of areas for potential improvement, and have proposed changes to these areas. These include:

- Setting clearer outputs and Price Control Deliverables (PCDs) so that NGGT has greater clarity on what it needs to deliver for consumers during the RIIO-2 period
- Simplifying the incentive arrangements and uncertainty mechanisms by removing those that add little value for consumers.

GTQ1. Do you have any feedback on our proposals for simplifying the RIIO-2 gas transmission price control package, or suggestions for further simplification?

Stakeholder engagement

2.35 Engaging with our stakeholders is a crucial step in our development of the RIIO-2 price control. We have been running cross-sector events, forums and seminars to get input from stakeholders alongside our formal consultation process.

2.36 To-date, we have convened a GT-specific Policy Working Group[2] (PWG) as a means of identifying and developing policy on issues affecting the gas transmission price control, as well as those that are cross-cutting.

2.37 We have also convened a GT-specific Cost Assessment Working Group[3] (CAWG), focusing on the development of the tools for assessing the costs within NGGT's Business Plans as well as the development of the Business Plan Data Template.

2.38 While we have engaged extensively with the GT-specific Working Groups, this consultation document is our first opportunity to seek views from the wider stakeholder community. Within this context, this document sets out a number of potential outputs for consideration in RIIO-GT2.

2.39 As stated in our RIIO-2 Framework decision, we will continue to use outputs and incentives to drive improvements that consumers value.

GTQ2. Do you have any views on the extent to which the potential outputs discussed in this document:

- achieve the appropriate balance and focus on the areas that are of value to consumers and should be included as part of a RIIO-GT2 outputs package;
- align with our overarching outputs framework as described in the Core Document;
- we also welcome views on whether there are any alternative outputs and/ or mechanisms not identified here which we should be considering.

[2] https://www.ofgem.gov.uk/publications-and-updates/riio-gt2-working-groups
[3] https://www.ofgem.gov.uk/publications-and-updates/riio-gt2-working-groups

2.40 We also set out specific questions for each potential output area in the remainder of this document.

Next Steps

2.41 Responses to this consultation will help inform our decision on an appropriate package of outputs and incentives for RIIO-GT2, including whether to include some or all of the potential outputs and incentives discussed in this document.

2.42 We will be continuing the development of the Business Plan Data Templates and cost assessment tools during the RIIO-2 Sector Specific Methodology consultation period. Details of this process can be found in the Cost Assessment Chapter.

2.43 Further details on upcoming meetings will be available on our website in due course. We invite stakeholders wishing to get involved to contact us at RIIO2@ofgem.gov.uk.

3. Outputs: Meet the needs of consumers and network users

The package of outputs and incentives we are proposing for RIIO-2 is intended to improve the service received by consumers and network users. This chapter should be read in conjunction with the RIIO-2 Sector Methodology (Core Document), in particular, Chapter 4 on outputs.

Chapter 3 questions

GTQ3. What are your views on the overall outputs package considered for this output category?

GTQ4. For each potential output considered (where relevant):

a) Is it of benefit to consumers, and why?

b) How, and at what level should we set targets? (eg should these be relative/absolute).

c) What are your views on the design of the incentive? (eg reward/penalty/size of allowance).

d) Where we set out options, what are your views on them and please explain whether there are further options we should consider.

GTQ5. What other outputs should we be considering, if any?

GTQ6. What are your views on the RIIO-1 outputs that we propose to remove?

In addition to the above, where relevant, please the see output specific questions below.

All questions, including additional output specific questions, are set out in Appendix 3.

Introduction

3.1 NGGT must deliver a high quality and reliable service to all network users and customers. Our proposals for this output category are set out below in Table 1.

3.2 Although meeting the needs of consumers and network users is a specific output category, our proposals across the other output categories will also support this objective, along with the wider RIIO-2 framework.

3.3 This chapter should be read alongside chapter 4 of the Core Document, which describes:

- The rationale for having an output category to 'Meet the needs of consumers and network users'.
- The broad RIIO-2 approach to specific outputs (eg types and the approach to developing company ('bespoke') outputs).

Summary of RIIO-GT2 proposed outputs or options for outputs

Table 1: Summary of proposed outputs or options for RIIO-GT2

Output name	Output type*	Company driven target**	Comparison to RIIO-1
Stakeholder engagement incentive	ODI(F) or ODI(R)	Yes (if ODI is retained)	Revised RIIO-1 output or no output
Customer satisfaction	ODI(F) or ODI(R)	Yes (if ODI is retained)	Revised RIIO-1 output or no output
Quality of demand forecast — day ahead & 2-5 day schemes (D1/D2-5)	ODI(F)	Yes	Revised RIIO-1 output
Maintenance—use of days & changes schemes	ODI(F) or ODI(R)	Yes	Revised RIIO-1 output
Connections	LO	Yes	Revised RIIO-1 output
Entry and Exit Capacity Constraint Management (CCM)	ODI (F)	Yes	Revised RIIO-1 output
Residual Balancing	ODI(F)	Yes	Revised RIIO-1 output
Emergency response and enquiry service	LO	No	Revised RIIO-1 output

* ODI(R/F) = Output Delivery Incentive (Reputational/Financial), PCD= Price Control Deliverable, LO=Licence Obligations

** Company driven target signifies an output where we expect to see extensive company-led engagement (including with their Customer Engagement Group (CEG)) to justify a stretching performance target.

Stakeholder Satisfaction Output

3.4 The Stakeholder Satisfaction Output (SSO) was introduced in RIIO-1 and was designed to encourage NGGT to become more outwardly focused in its business practices and to be more responsive to changing stakeholder and customer needs. In RIIO-1, NGGT's performance against the SSO was assessed and incentivised through two schemes - one based on an assessment of the quality of stakeholder engagement (the Stakeholder Engagement Incentive or SEI) and the other based on the results of customer and stakeholder satisfaction surveys.

3.5 Both elements of the SSO are financially incentivised in RIIO-1, with the value of the customer and stakeholder surveys element worth up to +/-1 per cent of NGGT's base revenue, and the upside-only SEI component worth up to +0.5 per cent of NGGT's base revenue.

3.6 We are considering options for modifying the SSO. During our working group sessions, we identified a number of key considerations that need to be taken into account, should the SSO be retained. In particular:

- In designing a potential RIIO-2 output, we will identify anything that should be considered business as usual and therefore should not be financially incentivised;
- There is a risk of overlap between the SSO and other potential incentives: In RIIO-2 we will endeavour to remove any overlaps between the SSO, if retained, and other incentives.

3.7 While the incentives based on stakeholder and customer satisfaction surveys have driven improvements in service quality, there is an element of 'survey fatigue' with the stakeholder surveys.

3.8 This section sets out our proposals for stakeholder engagement and customer satisfaction in RIIO-2. These proposals seek to reflect the performance improvements achieved during RIIO-1 and embed these into business as usual.

Stakeholder Engagement Incentive

Purpose	To encourage NGGT to be outward-facing and responsive to the needs of its stakeholders.
Proposed approach	We are considering using the business plan incentive to encourage stakeholder engagement to be an integral part of NGGT's business plan. We are also considering whether an ODI beyond the business plan incentive is necessary for stakeholder engagement. We are consulting on three options for the ODI: no ODI, a reputational ODI, or a financial ODI.

Background

3.9 In RIIO-1, we introduced the Stakeholder Engagement Incentive (SEI). It was introduced to encourage NGGT to engage proactively with a wide range of stakeholders on an ongoing basis to anticipate their needs and deliver a consumer-focused, socially responsible and sustainable energy service. The SEI was designed to drive behavioural change by financially rewarding those network companies that undertake high quality engagement activities and use the outputs from this process to inform how they plan and run their business on an ongoing basis. We use a panel of independent experts to help determine each company's annual reward.

Table 2: Network company performance under the SEI

	2013-14		2014-15		2015-16		2016-17		2017-18	
	Score	Reward (£m)	Score	Reward (£m)	Score	Reward (£m)	Score	Reward (£m)	Score	Reward (£m)
Cadent	7.15	£5.65	5.90	£3.42	6.90	£5.35	6.90	£5.18	6.00	£3.54
NGN	6.75	£1.09	5.50	£0.61	6.80	£1.18	7.25	£1.32	6.15	£0.85
WWU	6.30	£0.92	7.05	£1.25	6.05	£0.82	6.00	£0.80	5.00	£0.41
SGN	6.05	£2.07	6.40	£2.43	5.75	£1.76	7.00	£3.16	6.25	£2.34
SPETL	4.90	£0.26	5.50	£0.48	6.25	£0.75	6.25	£0.68	6.40	£0.78
NGET	5.75	£2.76	6.00	£3.50	6.25	£3.81	7.00	£5.05	5.10	£1.78
NGGT	5.75	£1.10	6.25	£1.49	6.15	£1.48	6.50	£1.80	4.25	£0.21
SHETL	5.40	£0.25	6.00	£0.44	6.00	£0.68	5.40	£0.48	3.25	£0.00

3.10 As the scores in Table 2 show, company performance under the SEI has been positive overall.[4] So far in RIIO-1, stakeholder engagement has become increasingly embedded in the businesses, with the majority of network companies demonstrating that a commitment to engagement runs through all levels of the organisation. A culture of collaboration continues to develop. We have seen increasing numbers of network companies developing partnerships with third parties to rollout initiatives which respond to the needs of their stakeholders

3.11 There is evidence that some network companies are using outputs from their engagement to inform how they plan and run their businesses on an ongoing

[4] The SEI operates on a continual improvement basis, meaning that companies must demonstrate they have improved from one year to the next in order the same score from the previous year.

basis. The wide range of scores in Table 2 also indicates that, while some companies are improving each year, there is still room for improvement for a number of companies.

Options for consideration for RIIO-2

3.12 In light of the rate and pace of change in the energy industry, network companies will need to be outward-facing and responsive to the needs of their stakeholders in RIIO-2. We think that high quality stakeholder engagement should be a business as usual function for each company. We want a culture of engagement embedded within companies and for it to lead to tangible benefits to consumers.

Business Plan Incentive

3.13 We also expect NGGT to submit a clear strategy and plan for stakeholder engagement during the price control period as part of its Business Plan. This strategy would be informed by its User Group and would describe how NGGT will incorporate best practice from RIIO-1 into their activities. It could also list the specific activities, deliverables, and targets that NGGT is aiming for.

3.14 Stakeholder engagement will be critical to developing a good Business Plan and as part of the Business Plan incentive we plan to take account of the quality of engagement in developing the plan. Please see chapter 9 of the Core Document for further details about the Business Plan incentive.

Potential ODIs

3.15 We have also considered whether any additional incentive for stakeholder engagement is required during the control period itself. We are consulting on three options:

- **Option 1: No ODI for stakeholder engagement.** Under this option, we would not have an SEI in RIIO-2;
- **Option 2: Reputational incentive.** Under this option, we would report annually on companies' performance on stakeholder engagement; and
- **Option 3: Financial incentive.** Under this option, we would reward or penalise NGGT for its performance on stakeholder engagement.

3.16 Removing the incentive would recognise that it is in NGGT's own interest to have strong stakeholder engagement because it facilitates better outcomes for both them and their customers. The main drawback of financial and reputational incentives for stakeholder engagement is that it can be challenging to evaluate objectively and, for financial incentives, it can be difficult to place a financial value on the benefit to consumers.

3.17 Stakeholder engagement must be central to NGGT's network operations, but it is not clear that it needs a separate incentive in RIIO-2. We also note that the key role of NGGT and its impacts are captured by other proposed RIIO-2 mechanisms (eg the connections output) and do not want its focus to be distracted away from these.

GTQ7. We welcome views from stakeholders on the above options.

Design of a reputational or financial incentive

3.18 To effectively operate a reputational or financial incentive, we think it would be important for NGGT to propose clear commitments up front that it would be evaluated against.[5] These could include Key Performance Indicators (KPIs), deliverables, or stretching targets.

3.19 Under a reputational incentive, we would report on performance against NGGT's commitments through our annual report. Under a financial incentive, we could apply a discretionary reward or penalty at the end of the price control period. This would penalise NGGT if it has not met its commitments, and reward it for performance beyond commitments. We could consider the use of relative rewards and penalties in order to create a degree of competition between companies across both electricity and gas transmission.

3.20 We could also consider an ongoing role for NGGT's TO User Group in helping to assess its performance under a reputational or financial incentive.

GTQ8. Do you think it would be possible to establish clear and appropriate KPIs and deliverables in this area?

Satisfaction Surveys

Purpose	The incentive based on satisfaction surveys helps to drive improvements in the quality of customer service.
Proposed approach	We are considering to retain the Customer Satisfaction Survey with two options. One is to include the customer survey as an element within the overall stakeholder engagement measures whereby performance on this would contribute to the overall assessment of the quality of stakeholder engagement. The second option is a separate incentive scheme that is focused on customer satisfaction but with more challenging targets that delivers tangible improvements to service quality.

Background

3.21 In RIIO-1, the survey-based element of the SSO includes a financial reward and penalty mechanism and requires NGGT to seek customer and stakeholder feedback on its performance through surveys. NGGT is allowed to set its own questions for the surveys as it sees appropriate, provided that it includes one key question that rates overall levels of satisfaction with the service. A metric derived from responses to this key question is used to measure performance and determine the size of the incentive reward/penalty

3.22 The incentive is worth up to +/- 1% of annual allowed revenues in rewards or penalties. Performance is measured by customers and stakeholders rating their level of satisfaction out of ten, with baseline targets for RIIO-1 set at 6.9/10 for customer satisfaction and 7.4/10 for stakeholder satisfaction, reflecting NGGT's

[5] NGGT's baseline allowance should enable it to deliver its stakeholder engagement strategy, including the adoption of best practice. We do not propose to provide additional funding for engagement activities. If NGGT requests specific funding then it must justify this by demonstrating that the activity would not be otherwise supported, and that it is likely to result in a measurable benefit to consumers.

recent performance. The incentive is currently weighted 70:30 in favour of customer satisfaction.

3.23 Table 3: Customer Satisfaction and Table 4: Stakeholder Satisfaction show that NGGT has managed to consistently outperform the targets for both customer and stakeholder satisfaction, with average ratings of 7.585 for customer satisfaction and 7.877 for stakeholder satisfaction, resulting in rewards totalling £12.4m to date in RIIO-1.

Table 3: Customer Satisfaction

	2013/14	2014/15	2015/16	2016/17	2017/18
Baseline Target / 10	6.9	6.9	6.9	6.9	6.9
Performance / 10	7.153	7.593	7.552	8.027	7.598
Reward (£m)	0.7	2.0	2.0	3.5	2.5

Table 4: Stakeholder Satisfaction

	2013/14	2014/15	2015/16	2016/17	2017/18
Baseline Target / 10	7.4	7.4	7.4	7.4	7.4
Performance / 10	7.792	7.944	8.02	7.982	7.962
Reward (£m)	N/A*	N/A*	N/A*	0.8	0.9

*No financial rewards payable for first three years of price control

3.24 Some stakeholders have told us that they wish to see the incentive continued in RIIO-2 as it encourages NGGT to engage with stakeholders and deliver a good quality service to customers. However, some stakeholders also expressed concerns about 'survey fatigue' and questioned the efficacy of evaluating performance on one key question rating overall satisfaction rather than on a number of questions relating to specific aspects of performance. Stakeholders have also suggested satisfaction levels may be driven by other aspects of NGGT's performance that are already incentivised through other output mechanisms.

3.25 Due to the nature of this output we believe there may be interactions with other policy areas. Naturally, we expect any output that improves the experiences of stakeholders will have a positive impact on stakeholder satisfaction scores.

Proposed Approach

3.26 In addition to the stakeholder engagement measures set out above, we are considering whether to retain within the RIIO-2 package an incentive aimed at encouraging NGGT to provide a better quality of service to its customers.

3.27 The electricity and gas transmission companies provide services to a range of users including suppliers, gas shippers, distribution network operators, generators and large demand customers. We want NGGT to provide a consistently high quality of service to these users, and think that there may be a role for an incentive to encourage NGGT to improve its service quality.

3.28 We are proposing changes to the survey component of the SSO to focus only on NGGT's customers. We summarise our proposals in the table below.

Table 5: Customer Satisfaction Survey Proposals

Proposals for a GT Customer Satisfaction Survey	
Survey Focus	We are proposing to move away from a wider stakeholder and customer survey-based incentive, to an incentive based on a customer survey targeted at those customers that NGGT interacts with as part of its activities i.e. through the Connections process or through capacity auctions.
Survey content	We are proposing to retain a single primary survey question, consistent across all sectors. We note that this approach would also enable NGGT to tailor the remainder of the survey to the needs of their customers.
Survey score baselines	We propose to set baseline score targets using NGGT's actual performance on the customer-focused element of the current SSO. This would ensure that NGGT builds on its current level of customer satisfaction scores, and is incentivised to deliver improvements against these scores.
Customers surveyed	We propose that NGGT engage with its User Group to identify the range of customers that could be surveyed, so that opinion across a range of customer types and NGGT's customer-facing activities can be captured.

3.29 We are considering two options for this incentive:

- **Option 1**: Include the customer survey as an element within the overall stakeholder engagement measures set out previously. Under this option, delivering better service quality to NGGT customers would form part of the overall stakeholder engagement strategy, and performance on this would contribute to the overall assessment of the quality of stakeholder engagement.
- **Option 2**: A separate incentive scheme that is focused on customer satisfaction. This would build on the existing customer satisfaction survey element of the SSO, but with more challenging targets that delivers tangible improvements to service quality.

3.30 Under option 2, the customer satisfaction incentive could be reputational or financial. A financial incentive could operate across both electricity and gas transmission with a single reward/penalty pot that all TOs would compete for.

3.31 We welcome proposals for this scheme from stakeholders and from NGGT in its Business Plan, with clear deliverables and metrics against which performance could be measured. We also welcome views on the size of the reward/penalty and the criteria that might be used to set rewards/penalties if a financial incentive is proposed.

3.32 We think that the NGGT User Group can play an important role in this process, and expect NGGT to engage with its User Group in developing its approach towards customer satisfaction.

GTQ9. We welcome views from stakeholders on the above options.

Quality of demand forecasts

Purpose	To encourage NGGT to make improvements to the accuracy of its gas demand forecasts.
Proposed approach	Symmetrical **financial ODI** with incentive targets based upon forecast errors for the day ahead, two and five days demand forecasts.

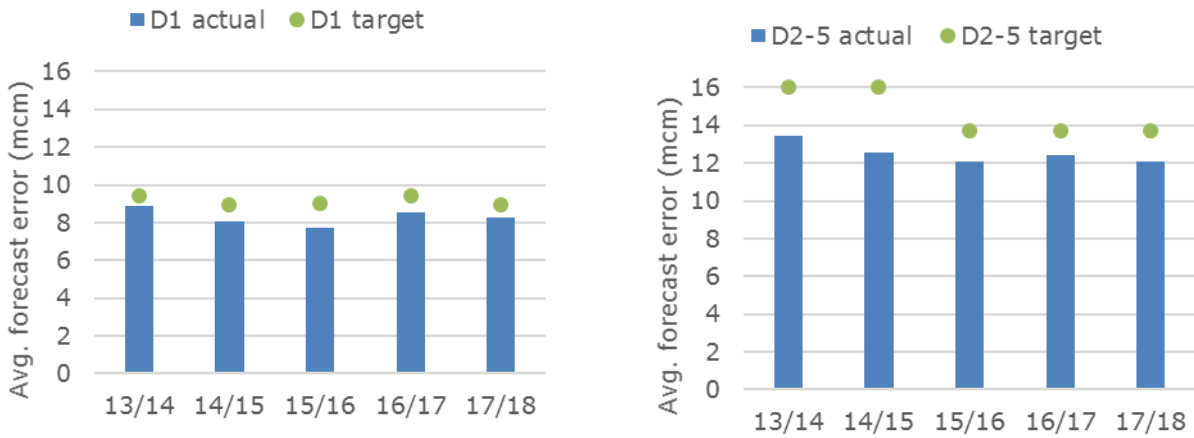
Background

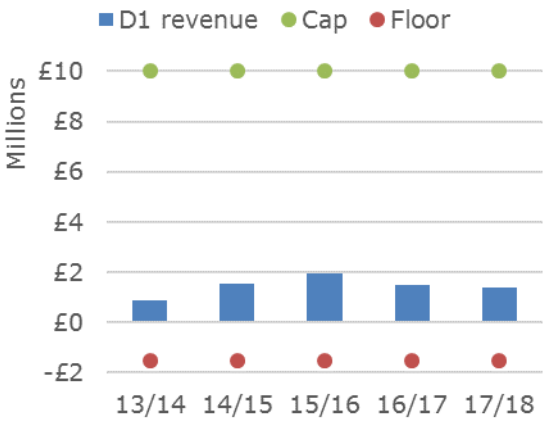
3.33 NGGT produces forecasts of gas demand to help users of the gas transmission system (shippers, power generators, distribution networks etc.) make efficient physical and commercial decisions to put gas on and take gas off the NTS. NGGT forecasts demand on a day-ahead basis and is currently subject to an incentive based upon the accuracy of this forecast ('D1 demand forecasting incentive'). NGGT also publishes demand forecasts each day from two to five days ahead of the day ('D2 to D5 demand forecasting incentive'), and has an incentive based on the accuracy of these forecasts too.

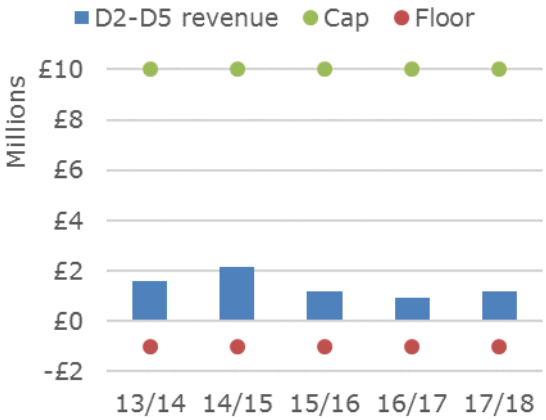
3.34 At the start of the RIIO-1 price control, targets for both schemes were based on NGGT's then recent performance, with the intention that NGGT's performance would improve. The D2 to D5 scheme target was reset in 2015/16 after performance improved markedly.

3.35 To date, NGGT has outperformed both D1 and D2 to D5 targets during RIIO-1, earning approximately £15m (in 2017/18 prices) between 2013/14 and 2017/18 across both schemes, or around £3m each year (see Figure 3).

Figure 3: Quality of demand forecast incentive: performance (top) and revenue (bottom)—D1 (left); D2-D5 (right).







Proposed approach

3.36 For the RIIO-2 period, we propose to put in place an output for NGGT to make reasonable efforts to produce accurate D-1 and D-2 to D-5 demand forecasts.

3.37 We propose to retain the Quality of Demand Forecasts incentive as an Output Delivery Incentive (ODI) as we believe there are good arguments for retaining this incentive.

3.38 There is some evidence that stakeholders value NGG's forecasts, and want to see the accuracy of these forecasts improve over time. NGGT has reported feedback from consultations on its 2017/18 SO incentive plan implying that some smaller shippers and trading companies rely on NGGT's forecasts, while some larger companies use them to validate their own in-house forecasts.[6] Some respondents also expressed an interest in additional forecasts such as a month-ahead forecast.

3.39 We are mindful that not all NTS users may attach value to NGGT's demand forecasts, partly because some users produce their own forecasts or procure them from third parties. We need to carefully consider whether it would be appropriate for end-consumers to pay for a service that may only be valued by some NTS users. We welcome the views of stakeholders on the value of NGGT's forecasting service and the value from improved accuracy of those forecasts, including whether the scope of the incentive should be widened to cover other forecasts or data products. We would also like stakeholders' views on whether and how funding improvements in these forecasts can deliver value for end consumers.

3.40 While NGGT has performed well against its targets so far, we do not think that the current scheme is challenging enough to encourage NGGT to make further improvements in its forecasting accuracy. For the RIIO-2 period, we do not think it would be appropriate for NGGT to continue to earn incentive rewards for maintaining its current level of performance.

3.41 We want the scheme to encourage NGGT to make ongoing improvements, and if we were to retain the scheme, this would include more challenging targets that reflect this ambition. We expect NGGT to put forward its proposals for revised targets as part of its Business Plan submission, which we would consider carefully before setting our targets. At a minimum, we would expect NGGT to set targets

[6] https://www.nationalgrid.com/sites/default/files/documents/Consultation%20on%20Shallow%20Incentive%20Proposal%20-%20Conclusions%20Report.pdf

that build on its current level of performance, and reflect an ambition to improve its service further.

GTQ10. Does NGGT's forecasts of demand provide a service that is valued by consumers and network users? Please explain why.

GTQ11. Should gas consumers pay for NGGT to produce accurate demand forecasts? What is the value for consumers from increased accuracy?

Maintenance—Use of Days and Changes schemes

Purpose	To incentivise efficient planning of network maintenance that impacts at direct exit point connections from the NTS
Proposed approach	We propose to retain modified versions of the Use of Days scheme and Changes schemes, we propose to implement a penalty-only arrangement with more ambitious and challenging targets that reflects the improved performance that NGGT has delivered over the RIIO-1 period.

Background

3.42 In order to ensure the ongoing reliability of the NTS, NGGT is required to periodically undertake maintenance of the pipeline system. Customers at direct exit connections from the NTS may receive a reduced level of service during maintenance to allow work to go ahead. Where maintenance requires an outage, or reduction in the flexibility available at one or more direct exit connections, NGGT may 'call' one or more 'Maintenance Days' in accordance with the Uniform Network Code.

3.43 We want to encourage the efficient planning and execution of network maintenance. To minimise the impact of maintenance work, NGGT should plan its maintenance activities to align with periods which minimise disruption to customer operations. This can benefit direct offtake customers by reducing disruption to their operations.

3.44 The RIIO-1 price control includes a Maintenance Incentive that is split into two scheme components incentivising:

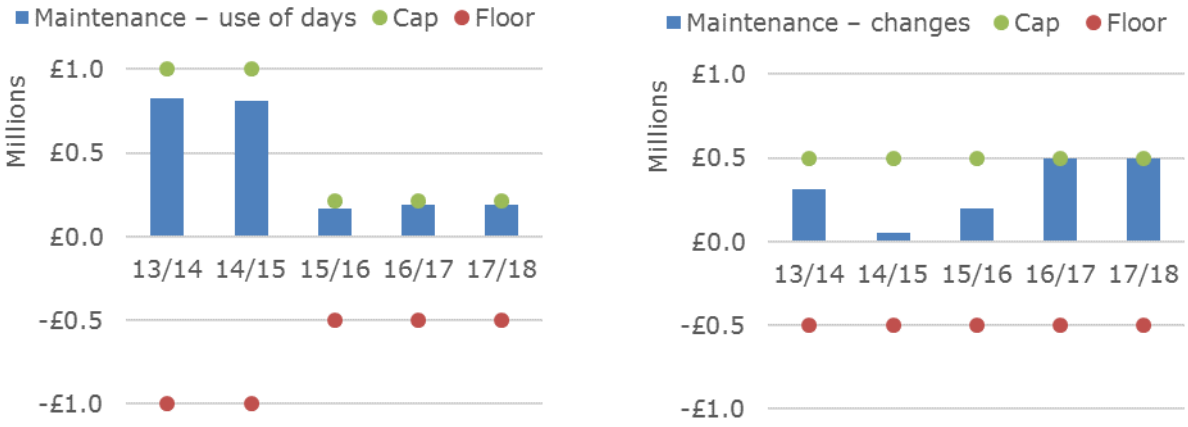
- Minimisation of the use of Maintenance Days ('Use of Days Scheme') to perform Remote Valve Operations maintenance; and
- Minimisation of changes ('Changes Scheme') initiated by NGGT to the agreed maintenance plan.

3.45 Under the Use of Days Scheme, NGGT has an annual target for the number of Maintenance Days it uses to undertake Remote Valve Operations. The 'use of days' scheme was revised by us following the 2014 'shallow review', to reduce the value associated with using maintenance days. If the actual number of Maintenance Days used is less than its target, NGGT receives a tiered payment between £15,000 and £25,000 each day up to a scheme cap of £0.215m. If the actual number of Maintenance Days used exceeds the target, NGGT incurs a penalty of £20,000 per day up to £0.5m (for 25 days or more above target).

3.46 Under the Changes Scheme the target number of Maintenance Days or Advice Notice Days subject to change initiated by NGGT (excluding changes made by NGGT pursuant to customers' request) is equal to 7.25% of the total number of Maintenance plan days within the year. If the actual number of days changed is more or less than the target then a reward/penalty of £50,000 per change below/above the target is accrued up to a scheme cap of +/- £0.5m per annum.

3.47 NGGT has been able to outperform both maintenance incentive targets in every year of RIIO-1 so far, adding c.£0.8m (in 2017/18 prices) each year to allowed revenue across the first five years of the control period (see Figure 4).

Figure 4: Maintenance incentive revenue - use of days (left) and changes (right)



Proposed approach

3.48 We propose to put in place an output to encourage NGGT to take reasonable steps to minimise its use of maintenance days and changes to those days. We also propose to retain an ODI on this activity to drive forward greater levels of service.

3.49 We think that NGGT's performance against this incentive is a positive development for NTS users, particularly those users that rely on accurate and reliable information on maintenance outages to plan their operations. The feedback from those stakeholders with whom we have engaged on this issue is that that there has been a significant improvement in the service level on maintenance outages. During the first five years of RIIO-1, NGGT did not make a single change to agreed maintenance plans. We welcome the certainty that this has provided to users of the NTS. Across both schemes, NGGT has earned incentive rewards that are at or near the cap set for these schemes.

3.50 We believe that the incentive has been successful in driving the kind of behaviour that users want, and we think that NGGT's recent performance has become 'business as usual'. For RIIO-2 we want to ensure that NGGT builds on this good performance and continues to deliver a high quality service in this area.

3.51 For RIIO-2, we propose to retain modified versions of the two schemes. For both the Use of Days scheme and Changes schemes, we propose to implement a penalty-only arrangement with more ambitious and challenging targets that reflects the improved performance that NGGT has delivered over the RIIO-1

period. This means that NGGT would not get a reward for using fewer days or making fewer changes to those days than the respective targets, but it would incur penalties for breaching the targets. We think a penalty-only scheme would be simpler and more reflective of the fact that there is limited room for NGGT to improve upon its already good performance.

3.52 We would expect NGGT to propose challenging targets for both schemes that are in line with its current good performance. Unless there are good reasons not to, we propose to use the same penalty rates and floors as in the current arrangements.

3.53 We are mindful that most new connections are designed so that remote valve operations can be carried out without disruptions to supply. In light of this, we welcome stakeholders' views on whether this incentive is needed. We are also considering the option of removing the financial incentive and instead putting in place a reputational incentive, however, we are aware of the risk the service level could deteriorate if there are no financial penalties. We welcome stakeholder views on this proposal.

Connections

Purpose	To incentivise NGGT make connection offers in a timely manner.
Proposed Approach	We propose to retain an output relating to connections as a formal licence condition. Specifically, the output would be for NGGT to comply with the requirements of the UNC in relation to connections as set out in Paragraph 13 of "Section V - General" of the TPD

Background

3.54 As part of the current RIIO-1 price control, we set an output for NGGT to deliver the connections process as set out in UNC Modification 373, which we approved in 2012. UNC modification 373 has been incorporated into the UNC as Paragraph 13 of Section V of the Transportation Principal Document (TPD).

3.55 NGGT must comply with any request for connection that falls within the Gas Act 1986, and the output requires NGGT to follow the process set out in UNC modification 373, so that 'the connections offer process is governed by clear, transparent arrangements that ensure that all parties are treated equally by NGGT and that user requests are managed by NGGT within a fixed timeframe'.

3.56 UNC modification 373 stipulates that NGGT must produce initial and full connection offers within two and nine months respectively, that users have three months to accept these offers, and that NGGT must charge a fixed fee for an initial connection offer. It also requires that NGGT publish technical connection specifications and standards, network exit and entry agreements, storage agreements, advance reservation of capacity agreements, and quarterly details of the number of applications submitted, and the number of initial and full connection offers made by NGGT.

3.57 We think that the output has been successful in driving the desired behaviour. NGGT's compliance with the connections output has been good, with only one

connection offer being made marginally outside of the specified timeframe, with the prior agreement of the customer.

3.58 Stakeholders who have commented on this area have emphasised the importance of being able to connect to the NTS in a timely and efficient manner and wish to see the UNC 373 timeframes continue to be adhered to in the future.

Proposed Approach

3.59 For RIIO-2, we propose to retain an output relating to connections as a formal licence condition. Specifically, the output would be for NGGT to comply with the requirements of the UNC in relation to connections as set out in Paragraph 13 of "Section V - General" of the TPD, including any modifications to those requirements that may be made from time to time under the UNC governance processes.

3.60 We intend to monitor NGGT's performance against this output by reviewing the information published by NGGT on a quarterly basis in line with its obligations under the UNC.

3.61 We would be willing to consider any additional outputs or incentives relating to connections and access to new types of gas, provided it can be demonstrated that these provide additional value to consumers.

Entry and Exit Capacity Constraint Management (CCM)

Summary of output	To incentivise an efficient overall cost of Gas System Operator (GSO) constraint management actions through efficient system operation and optimisation of strategies, and encourage balanced risk versus reward decisions in the release of additional capacity.
Proposed approach	We are proposing to put in place a symmetrical **financial ODI** with a net target cost of for entry and exit operational constraint management

Background

3.62 It is vital that NGGT takes the most cost efficient course of action when managing constraints on the NTS using both commercial tools available, and where necessary, making network investments where needed. NGGT is expected to efficiently balance the level of risk of constraints against the cost of network investments in terms of what actions are undertaken to manage constraints.

3.63 The current regulatory and commercial framework oblige NGGT to release obligated levels of capacity significantly in excess of peak demand at both entry and exit points on the network. Flows of gas at these levels of capacity cannot occur simultaneously, so NGGT takes a view of the combinations of supply and demand patterns likely to occur and makes an assessment of the most efficient solution to meet customer capacity needs, which includes considering the commercial tools and asset options available to them. In the instances where NGGT believes it cannot accommodate shippers' flow requirements associated with booked capacity, it can undertake constraint management actions in accordance with the Uniform Network Code and System Management Principles Statement. These actions fall into two groups:

- Operational constraint management – actions taken by NGGT to manage day-to-day issues on the network, such as maintenance outages or unavailability of compression.

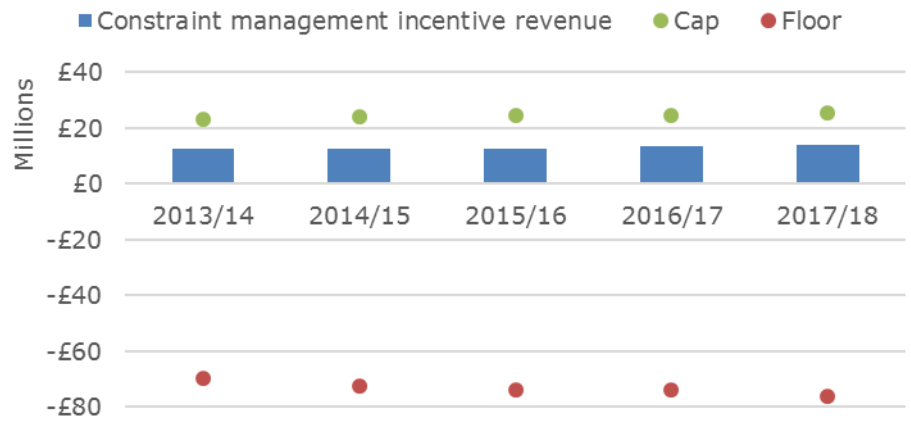
- Investment constraint management – actions taken by NGGT to manage longer term issues associated with the provision of additional capacity on the network, such as where physical reinforcement is not delivered to the party requesting additional capacity, within the contracted timescales.

3.64 Incentive performance is driven by the difference between the net constraint management costs over a year (i.e. constraint management costs minus revenues from the sale of certain capacity products) and a target value.

3.65 All costs and revenues associated with the scheme are passed through to shippers through Capacity Neutrality and other charges. NGGT receives an incentive revenue or penalty according to whether actual net costs are higher or lower than the incentive target. This revenue or penalty feeds through to NGGT's charges.

3.66 NGGT's performance against the CCM incentive has added £69 million (in 2017/18 prices) to its allowed revenue over the first five years of RIIO-1, or approximately £14m per annum—as shown in Figure 5.

Figure 5: Capacity constraint management incentive revenue



3.67 We have received feedback through our stakeholder working groups[7] to help assess the appropriateness of the existing incentive. Feedback from those stakeholders participating in the working groups suggests that:

- stakeholders see this as a vital service which NGGT provides
- The mechanism is not transparent enough to determine whether the decision to use an operational management tool compared to an investment tool was in the best interest of consumers
- it is not clear if the calibration of the incentive is appropriate.

Proposed approach

3.68 We propose to put in place an output for NGGT to manage the NTS so that constraint management costs are efficiently incurred, taking account of the physical capability of the NTS and the cost of building new capacity.

3.69 We consider that the CCM incentive still provides a strong incentive to efficiently manage the costs of constraints. We therefore propose that the CCM incentive should be retained.

[7] https://www.ofgem.gov.uk/publications-and-updates/riio-gt2-working-groups

3.70 We are mindful that the current target was set at the start of RIIO-1 to manage the risk that NGGT may incur low-probability/high-impact constraint management costs, such that rewards in a typical year would be offset by larger penalties during atypical years. However, the buyback costs were last incurred in 2006/07 and given current flow patterns and capacity demands at entry points, we are concerned that the CCM targets during the RIIO-1 period may not have appropriately reflected the actual risks of constraint management action.

3.71 As part of our proposed Network Capability output for RIIO-2, we are proposing to require NGGT to review the physical capability of the NTS and the forecast flows at each entry and exit point. Following this review, we are proposing to require NGGT to consider whether the current levels of baseline obligated entry and exit capacities are set at appropriate levels, taking account of the expected costs of network investment and the risks of incurring constraint management costs. If the obligated baseline capacity at any entry or exit point was to be found to be inappropriately high, we would expect NGGT to propose downward revisions to this capacity.

3.72 For the purposes of the CCM incentive target for the RIIO-2 period, we expect NGGT to put forward appropriate targets that take account the results of its review of baseline obligated capacities, and the impact of any changes on the risk and expected costs of constraint management action. We would expect the targets to be strongly informed by actual performance against this incentive during the TPCR4 and RIIO-1 price control periods, and expected maximum flows through each entry and exit point, rather than the obligated levels of capacity. Where obligated levels of capacity materially exceed the forecast maximum flow, we would expect NGGT to demonstrate that any differences remaining after NGGT's review would not impose unreasonably high costs on consumers through the CCM.

Residual Balancing

Purpose	To incentivise the daily balancing of supply and demand whilst minimising the impact of any actions on market prices.
Proposed approach	We are proposing to put in place a symmetrical **financial ODI** with a target on the price spread for residual balancing and a target volume difference between the starting and closing NTS linepack over a Gas Day. However, we are also seeking feedback on whether the linepack incentive should be retained.

Background

3.73 NGGT is required to maintain system balance and to operate within safe operational limits. However, because NGGT has some choice regarding how it fulfils these requirements, we have previously set financial incentives to encourage NGGT to do this in the way that causes least disruption to the gas market.

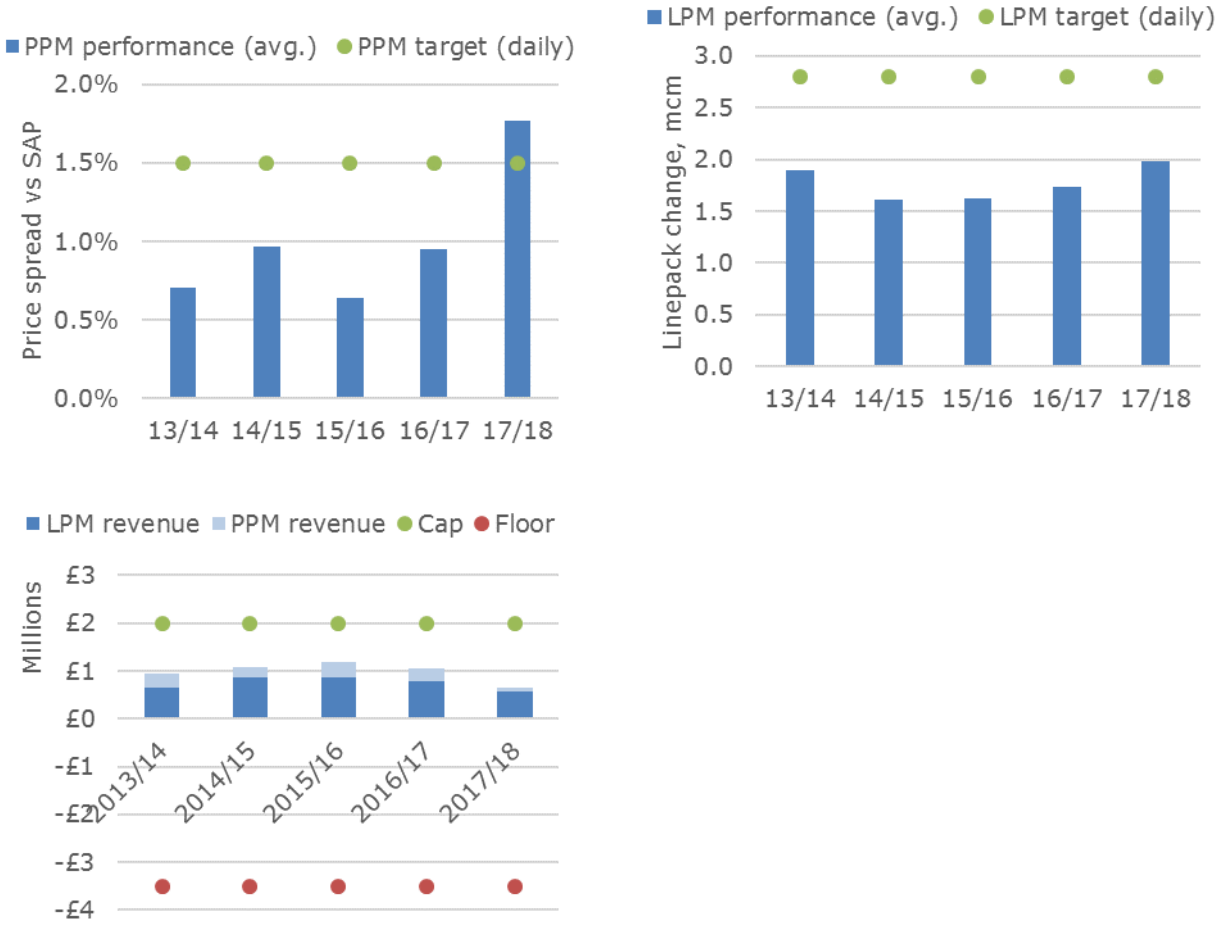
3.74 The incentive contains two elements: the Price Performance Measure (PPM) and the Linepack Performance Measure (LPM), both of which were set for eight years commencing April 2013 for RIIO-1.

3.75 The PPM element incentivises NGGT to execute any residual balancing trades at prices that are in a small range compared to the System Average Price (SAP) for the day. Where NGGT takes balancing actions that exceed the default (buy or sell) prices, its actions will set the price at which out of balance shippers are 'cashed out'— potentially disrupting incentives on shippers to balance their portfolios.

3.76 The LPM element incentivises NGGT to minimise any changes between starting and closing NTS linepack over a gas day (i.e. to achieve a balance between the supply and demand on the gas day). This is intended to ensure that any system imbalances are resolved on the relevant day, so that the costs of resolving any imbalances fall on those responsible for the imbalance.

3.77 Figure 6 demonstrates that NGGT has been able to consistently outperform its target during RIIO-1— earning around £5m (17/18 prices) over the first five years of RIIO-1 to date, or around £1m (17/18 prices) per year. Incentive revenue is assessed on a daily basis, with asymmetry between upside and downside risks—so NGGT can under-perform on average in a given year without necessarily incurring penalties.

Figure 6: Residual balancing incentive performance (top) - PPM (left), LPM (right), revenue (bottom)



Proposed approach

3.78 We propose to put in place an output for NGGT to take reasonable steps to minimise any disruption to the gas market when undertaking residual balancing actions.

3.79 We propose to maintain the current incentives on residual balancing as an Output Delivery Incentive (ODI), which places a target on the price spread for residual balancing and a target volume difference between the starting and closing daily linepack.

3.80 While agreeing with the principle underlying these incentives, which is to minimise the impact of NGGT's residual balancing actions on the gas market, and to ensure that those responsible for the system being out of balance are exposed to appropriate costs, some stakeholders have told us that the LPM element of the incentive may not be driving the most efficient behaviour from NGGT. In particular, they have told us that it may not be desirable to provide an incentive for NGGT to return linepack at the end of the gas day to the level it was at the start of the gas day. This could lead to perverse outcomes if there is a genuine need for linepack to evolve over time.

3.81 Moreover, some stakeholders have told us that the UNC and Health and Safety legislation act as further constraints on linepack, and that there may not be a need for a separate financial incentive.

3.82 Our initial view is that both elements of the Residual Balancing Incentive perform a useful function, which is to limit the disruption to the gas market from NGGT's balancing actions. However, these benefits need to be weighed against the concerns set out above, particularly the loss of flexibility on linepack. On balance, we currently think that it would appropriate to retain this incentive for the RIIO-2 period. We welcome stakeholders' views on whether the linepack element should be retained.

3.83 If we were to retain this incentive, the targets against which NGGT's performance would be measured should be reviewed in light of its performance during the current RIIO-1 price control. Subject to consultation responses, we currently intend to set much tougher targets drawing on the evidence from recent performance. This would ensure that NGGT would be incentivised to maintain and improve upon its performance in this area.

3.84 However, we welcome stakeholder views on whether this incentive delivers value for consumers or if there are other outputs we should consider.

Emergency response and enquiry service

Purpose	To ensure customers have a reliable emergency response and enquiry phone line service in the event of an emergency.
Proposed approach	To amend the licence requirements to make it clear that the emergency response phone line should always be operational to receive calls.

Background

3.85 All gas networks have a jointly established single emergency telephone service for customers to report gas leaks. The service must be continuously manned, fully available to all persons, and free of charge. In addition, all reports and enquiries to the line must be processed promptly and efficiently. The service is managed by Cadent, with the other GDNs and NGGT (which is also covered by the service) contributing their share of the overall funding.

Proposed approach

3.86 We propose to amend the NGGTs' licence to make it clear that the emergency response phone line should always be operational to receive calls. As it stands, Standard Special Condition A8 (Emergency Services and Enquiry Service Obligations) does not include a specific requirement to ensure that this is the case.

3.87 Given the volume of calls received by the emergency number, and the urgency of responding to these, we think it is important that the service has sufficient resilience to guarantee constant availability. The Electricity Distribution Licence includes an obligation to ensure this happens and we propose to align the gas sectors with this requirement.[8]

[8] Standard Condition 8 (Safety and Security of Supplies Enquiry Service), paragraph 3, of the Electricity Distribution Licence states that the service must be "available to receive and process telephone reports and enquiries at all times on every day of each year".

4. Outputs: Deliver an environmentally sustainable network

A high level objective of the RIIO price control framework is for network owners to mitigate the impact of their networks on the environment and to support the transition to a low-carbon energy future. This section sets out our proposed outputs and price control measures for NGGT in RIIO-2 to deliver an environmentally sustainable network and fully contribute to the transition to a low carbon energy system. This section should also be read in conjunction with the Core Document, in particular, Chapter 4 on outputs and Chapter 5 on whole systems.

Chapter 4 questions

GTQ12. What are your views on the overall outputs package considered for this output category?

a) For each potential output considered (where relevant):

b) Is it of benefit to consumers, and why?

c) How, and at what level should we set targets? (eg should these be relative/absolute).

d) What are your views on the design of the incentive? (eg reward/penalty/size of allowance).

GTQ13. Where we set out options, what are your views on them and please explain whether there are further options we should consider.

GTQ14. What other outputs should we be considering, if any?

GTQ15. What are your views on the RIIO-1 outputs that we propose to remove?

In addition to the above, where relevant, please the see output specific questions below.

All questions, including additional output specific questions, are set out in Appendix 3.

Introduction

4.1 The electricity and gas networks make up the system that brings energy to UK homes and businesses. However, energy networks and the related business activities can also be harmful to the environment.

4.2 In our Framework Decision, we stated that "network companies must play a stronger role in minimising their environmental impact and facilitating the decarbonisation of the energy system", and that "RIIO-2 has to endeavour to mitigate the impact of networks on the environment". We welcome views on the extent to which other environmental impacts should be addressed within the price control framework.

4.3 Network infrastructure typically has a long asset life. It is important that NGGT's decisions about network investment take appropriate account of the environmental impacts, as these will persist for many decades to come. Over RIIO-2, we want to see NGGT continue to build on the work that it has already done in this area, and make further progress towards achieving the environmental objectives set out in our Framework Decision.

4.4 We are now consulting on the set of outputs and other price control measures that we propose to put in place for the RIIO-2 price control to support the delivery of these objectives. These are summarised below:

- **Compressor emissions**: The operation of gas turbine-driven compressors on NGGT's network releases a significant amount of GHGs (carbon monoxide and nitrous oxides). NGGT is under statutory obligations to reduce these emissions. While NGGT's compliance with environmental legislation is enforced by the environmental regulators (i.e. the Environment Agency (in England), the Scottish Environment Protection Agency and Natural Resources Wales), we propose to ensure that NGGT is adequately funded for emissions reduction projects and that NGGT is held to account for the delivery of these projects through the use of Price Control Deliverables.
- **GHG emissions (venting)**: Gas is released (vented) when compressor units on the transmission system are de-pressurised, which they might need to be from time to time for the efficient operation of the transmission system. The release of gas contributes to GHG emissions. We are proposing to retain a GHG emissions (venting) incentive mechanism that would apply to NGGT in its role as the gas system operator. This proposed mechanism would set ambitious targets for NGGT to meet and includes financial penalties if emissions exceed those targets.
- **NTS shrinkage**: Shrinkage on the transmission system refers to the difference between the amount of gas injected into the transmission system and the amount of gas taken out by users of the system (including operators of distribution networks). This includes 'own use' gas (i.e. gas used as fuel for NGGT's compressors) and gas lost from the network through leaks. We are proposing to retain a shrinkage incentive mechanism that would apply to NGGT in its role as the gas system operator, and encourages NGGT to reduce the amount of shrinkage on the NTS.
- **Business carbon footprint (BCF) reporting**: As part of the RIIO-1 price control, we required NGGT to report annually on its business carbon footprint, which is the total GHG impact of its business activities, including those related to energy used for business purposes. This allows Ofgem, customers and stakeholders to monitor NGGT's performance in this area. There are no financial rewards or penalties attached this requirement. We are considering whether to retain this reporting requirement as part of the RIIO-2 price control.

GTQ16. We welcome views on whether further regulatory mechanisms are needed to drive NGGT to be more proactive in reducing its impact on the environment and contributing to the transition to the low carbon energy system.

4.5 In particular, we are open to receiving proposals for bespoke outputs from NGGT and other stakeholders for specific outputs and incentives that would support the delivery of environmental objectives. Our evaluation of these bespoke outputs would be as per the criteria outlined in chapter 4 of the Core Document.

Summary of RIIO-GT2 proposed outputs

Table 6: Proposed outputs to support the delivery of an environmentally sustainable network for RIIO-GT2

Output name	Output type*	Company driven target**	Comparison to RIIO-1
Compressor emissions	PCD	No	New output
GHG emissions (Venting)	ODI(F)	No	Revised RIIO-1 output
NTS shrinkage	ODI(F)	No	Revised RIIO-1 output
BCF reporting (potential output)	ODI(R)	Yes	Revised RIIO-1 output
Low carbon energy systems and decarbonisation of heat (potential output)	ODI/LO/PCD	Yes	New output
Bespoke outputs (companies should consider for potential inclusion in their Business Plan; though not just limited to these areas)			
Specific output and incentives that will support the delivery of environmental objectives	For companies to consider	Yes	new output

* ODI(R/F) = Output Delivery Incentive (Reputational/Financial), PCD= Price Control Deliverable, LO=Licence Obligations

** Company driven target signifies an output where we expect to see extensive company-led engagement (including with their Customer Engagement Group (CEG)) to justify a stretching performance target. This could lead to performance targets varying by company

Compressor Emissions (IED and MCP Directives)

Purpose	To ensure that NGGT complies with its statutory obligations on compressor emissions by delivering a programme of works agreed with the environmental regulators.
Proposed approach	We propose to create PCDs for specific solutions identified by NGGT in its Compressor Emissions Compliance Strategy document. We are also proposing an Uncertainty Mechanism (price control reopener) to allow for changes to solutions and allowances.

Background

4.6 Under EU requirements, industrial combustion plants within the European Union must meet air pollution standards for harmful emissions such as Nitrous Oxides (NOx) and Carbon Monoxide (CO). These requirements have been consolidated into the Industrial Emissions Directive (IED) and integrated into UK law along with the Medium Combustion Plant (MCP) directive[9,10], setting Emission Limit Values (ELV) for combustion plants based upon their rated thermal capacity.

4.7 NGGT currently has a number of gas fired compressors running on Limited Lifetime Derogation (LLD) or Emergency Use Derogation (EUD) under the Large Combustion Plant (LCP) element of the IED. These are plants with a thermal capacity greater than 50MW are not permitted to operate for more than either 17,500 hours in total from 1 January 2016 – 31 December 2023 for sites under LLD, or 500 hours per annum for sites under EUD.

[9] https://www.sepa.org.uk/regulations/pollution-prevention-and-control/medium-combustion-plant/
[10] https://consult.environment-agency.gov.uk/psc/mcp-and-sg-regulations/

4.8 NGGT also operates a number of smaller (greater than 1MW but less than 50MW thermal rating) gas compressors which must meet requirements of the MCP directive by 1 January 2030, after which they may have to cease operation or restrict their operating hours in a similar manner to EUD.

4.9 NGGT is carrying out a programme of work during the current price control period as part of its IED compliance strategy, for which funding has been provided as part of the RIIO-1 price control package.

4.10 Following our Mid-Period Review of the RIIO-1 price control and our assessment of NGGT's submissions under the RIIO-1 price control re-opener mechanism, we identified significant gaps in the current arrangements. In particular, the lack of sufficient clarity on NGGT's outputs and deliverables created significant challenges in holding NGGT to account for outputs and investments that have been funded as part of the price control. Going forward for the RIIO-2 price control, we propose to put mechanisms in place that would bring greater clarity on outputs and deliverables that we would expect NGGT to deliver, and would give us the means to hold NGGT to account for delivery against its commitments.

4.11 NGGT is likely to have to undertake significant works during both RIIO-2 and the subsequent price control to ensure that its compressor fleet is compliant with the IED and MCP. We want to ensure that NGGT's investment plans are backed by a clear demonstration of the need for investment, and evidence that its proposed solutions deliver against its statutory obligations in a manner that offers good value for consumers.

Proposed Approach

4.12 As part of the process for setting compressor emissions allowances and deliverables for the RIIO-2 price control, we propose to work closely with the Environmental Regulators (ERs) in Great Britain.

4.13 Following initial discussions with the ERs, we are proposing to require NGGT to develop a Compressor Emissions Compliance Strategy (CECS) document. The CECS should set out NGGT's long-term strategy for meeting the requirements of the IED and MCP Directives, as transposed into UK legislation. The CECS should be submitted along with NGGT's Business Plan for the RIIO-2 price control, and it should cover all network investment required during the RIIO-2 price control period (April 2021 to March 2026), and beyond to the MCP compliance deadline in 2030.

4.14 We propose to work with the ERs to jointly develop guidance for NGGT on the expected contents of the CECS, which we are aiming to publish in March/April 2019. At a minimum, we would expect the CECS document to include all of the information required to demonstrate to the satisfaction of the ERs and Ofgem that NGGT's planned investments are necessary to comply with relevant legislation and represents the most efficient way of delivering that compliance.

4.15 Our current view is that the CECS document should set out specific solutions that NGGT plans to deliver for each compressor site. NGGT's Business Plan submission should provide details of the cost of delivering these solutions on a site-by-site basis, including reasonable costs that may be incurred during the RIIO-2 period on solutions that would only be fully delivered on or after 1 April 2026.

4.16 We propose that following our review of the CECS and the Business Plan, we would create PCDs based on NGGT's proposed solutions at each site. These PCDs

may include meeting appropriate milestones for solutions that would be completed after April 2026. We would provide appropriate funding for the delivery of these site-specific PCDs as part of NGGT's baseline allowances for the RIIO-2 price control.

4.17 We propose to hold NGGT accountable for the successful delivery of these PCDs. If PCDs are not delivered by the end of the RIIO-2 period, we would claw back any funding provided for PCDs that are not delivered.

4.18 We recognise that the CECS would be a long-term plan, and it may not be possible to determine the most efficient solution at each site with certainty at the time of Business Plan submission. There is considerable uncertainty about the requirements of the NTS, and it is possible that more efficient solutions are identified after the Business Plan is submitted and an initial set of PCDs have been set.

4.19 To deal with this uncertainty, we propose to include a price control re-opener, which is an uncertainty mechanism, to allow NGGT or Ofgem to propose and for Ofgem to make changes to compressor emissions PCDs and associated allowances during the RIIO-2 price control period. Our current view is that there would be a single window for proposing changes under this re-opener, and this would be in year 2 of the RIIO-2 period (i.e. 2022-23), with any changes taking effect from year 3 of the period.

4.20 We are mindful of the need for ongoing innovation in identifying the most efficient ways of complying with relevant compressor emissions legislation. We want to ensure that our approach for the RIIO-2 price control strikes the right balance between incentives for innovation and good value for consumers. We believe that our proposed approach provides NGGT with an incentive to find innovative ways of delivering the agreed PCDs, as NGGT would receive a share of any cost savings achieved through the Totex sharing factor. Moreover, our proposed re-opener mechanism provides NGGT with the opportunity to come forward with proposals to amend the PCDs if better solutions are identified.

4.21 However, we recognise that our proposed approach may not allow NGGT to meet its price control obligations by delivering different solutions to the ones set as PCDs. More importantly, it does not allow NGGT to benefit financially from any savings achieved by switching to a materially different solution to the one set as the PCD after the price control period has started.

4.22 Our initial view is that the upfront uncertainty about the most efficient solution at each site makes it inappropriate for us to apply price control incentives to drive efficiencies that may be realised by switching solutions. We do not believe that NGGT should receive a financial reward (or penalty) for switching solutions if that is driven by factors outside of its control (such as uncertainty and changes to gas flows, demand and supply) and not attributable to genuine innovation.

4.23 We recognise that the uncertainty about future demand/supply means that it may not be appropriate for NGGT to carry out a complete assessment of all available options for all RIIO-2 sites at the time of its Business Plan submission. However, we would be relying on NGGT's Business Plan to set PCDs based on the solutions proposed in it. This means that, in some cases, the most efficient solution would only become apparent after we set out PCDs.

4.24 In such cases, we think NGGT should deliver the most efficient solution, and if that is different to the original PCD, it should apply for the PCD and associated funding

to be changed (potentially with retrospective effect) through the re-opener mechanism. This would ensure that consumers only pay for solutions that are actually delivered.

4.25 We believe our approach offers NGGT some protection against cost over-runs. It is possible that forecast compressor run hours are higher than initially expected, and that may mean that a more expensive solution is required. Our approach allows NGGT to apply through the re-opener process to change the relevant PCDs and associated allowances.

4.26 We are open to considering proposals from NGGT and stakeholders on how these PCDs are to be specified in NGGT's licence. Our overarching aim is to protect the interests of consumers by ensuring that NGGT delivers on its statutory obligations in the most efficient manner, and consumers receive good value for the price control funding provided. Subject to this, we recognise that there are different ways in which PCDs may be specified. Two examples are provided below:

- **Option 1**: PCDs may be specified as specific asset solutions, eg. two new 15.3MW gas turbine compressor units at site X, or one existing 30MW gas unit at site Y fitted with Selective Catalytic Reduction (SCR) technology.
- **Option 2**: PCDs may be specified by reference to specific asset solutions (as in Option 1) but with an explicit option to deliver a different solution that provides equivalent long term network capability, eg a long term bi-directional flow capability at site X of 50 mcm/day or higher.

4.27 Under option 2, when assessing whether the different solution meets the requirement of the PCD, we would also consider the likely impact of the change on long-term costs to consumers. For instance, we would not consider a solution to be equivalent if it is likely to require higher costs in the future without countervailing benefits, or earlier replacement of assets.

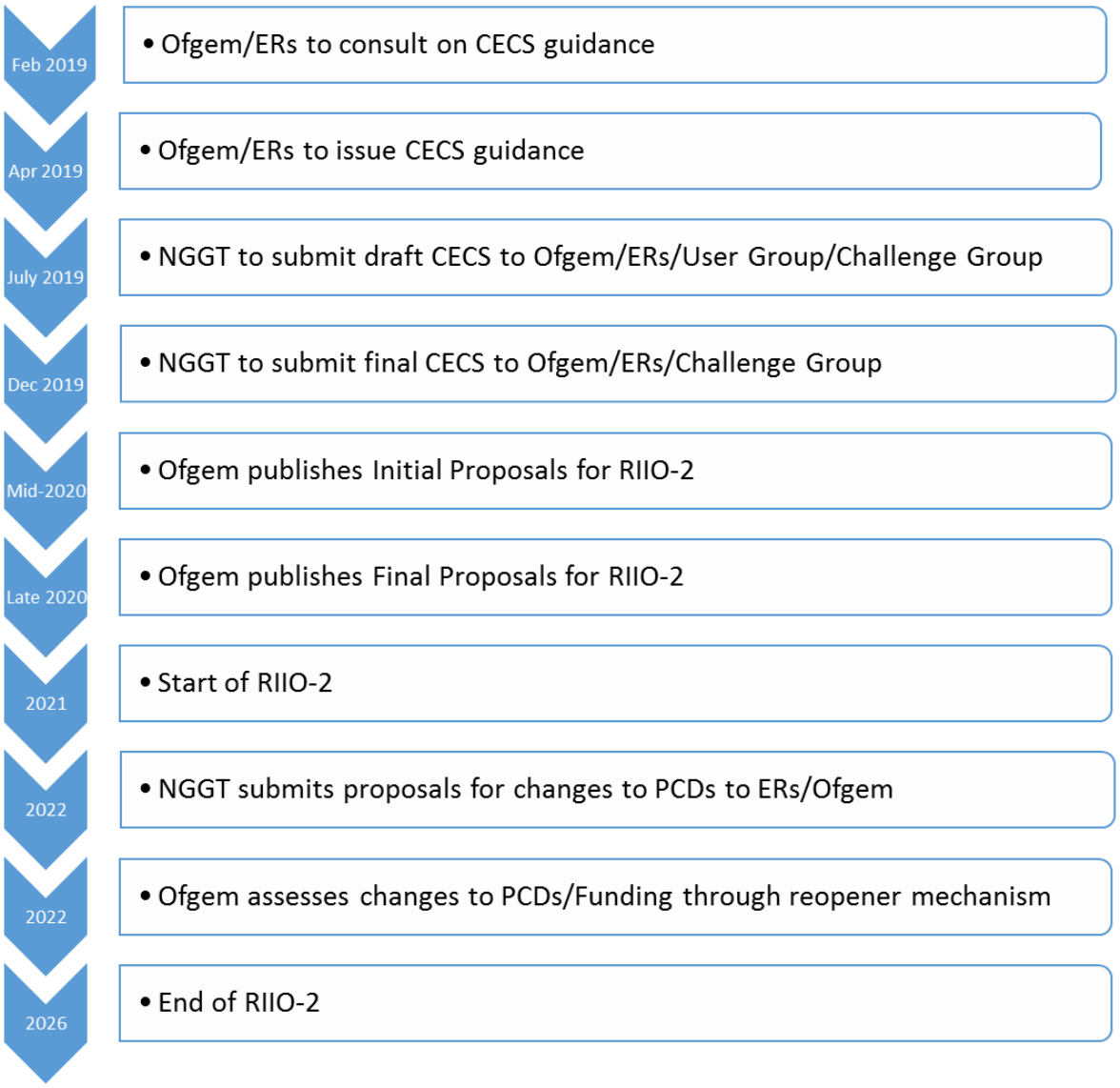
4.28 We are considering two approaches for assessing compliance against PCDs under option 2:

- **Option 2A**: We would accept any solution that provides equivalent long term network capability; and,
- **Option 2B**: We would accept any solution that provides equivalent long term network capability as long as the change of solution is demonstrated by NGGT to be driven by genuine innovation.

4.29 Option 2 offers more flexibility than option 1 by focusing on the network outcome. However, we would want to ensure that the solution delivered by NGGT provides long-term network capability that is equivalent to the solution funded by consumers, and does not lead to higher expenditure in the future. We recognise that it could be challenging to verify in practice due to differences between potential solutions in technical asset lives, replacement schedules and operating costs.

4.30 We welcome stakeholders' views on our proposed approach to compressor emissions work and on the different options for specifying PCDs and assessing compliance against those PCDs. In the meantime, we intend to work closely with the ERs in the coming months to develop our guidance document so that NGGT can submit a well-developed plan for compressor emissions compliance as part of its Business Plan. Our proposed timetable is set out below.

Figure 7: Proposed timetable for work to support compressor emissions output



Greenhouse Gas (GHG) Emissions

Purpose	To encourage NGGT to consider environmental impacts when making decisions about venting from NTS compressors.
Proposed Approach	We are proposing a down-side only Financial ODI with a target proposed by NGGT and agreed by its User Group.

Background

4.31 The GHG emissions incentive was introduced in RIIO-1 to incentivise consideration of the environment when venting from NTS compressors, which control pressure on the NTS to move gas from sources of supply to areas of demand. The incentive aims to benefit consumers (and others) by contributing to the GBs carbon reduction commitments.

4.32 The scheme incentivises NGGT to take the cost of GHG emissions into account when deciding whether to depressurise compressor units (venting the gas within them) or to keep units on standby. Keeping units on standby incurs costs associated with ancillary electrical equipment (vent fans, oil pumps etc.) and a level of emissions through the shaft seal. The incentive applies to both gas and electrically driven compressors.

4.33 The GHG incentive was set for an initial three years commencing April 2013 and renewed without modification after shallow reviews in 2014 and 2017.

4.34 The incentive compares actual venting quantities against a target level, which is currently set at 2,897 tonnes of carbon from natural gas annually. For every tonne vented above this target, NGGT is subject to a penalty of approximately £1,455. This is equivalent to £100,000 for every 69 tonnes vented above the target.

4.35 The incentive is asymmetric and downside-only, meaning NGGT does not receive any financial reward for target outperformance. NGGT has incurred approximately £3m of penalties (17/18) during the first five years of RIIO-1, or around £0.65m (17/18) per annum (Figure 8 and Figure 9)

Figure 8: GHG/venting incentive performance

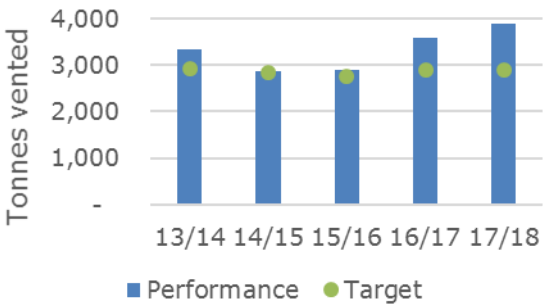
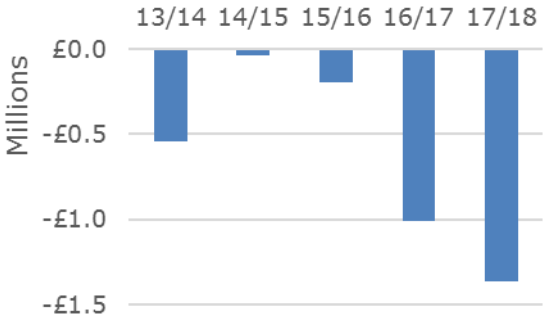


Figure 9: GHG/venting incentive revenues



4.36 Stakeholders at working groups queried the extent to which NGGT may have control over the need for venting, and the amount of gas vented, suggesting that this is determined by patterns of gas supply and demand.

4.37 Following stakeholder engagement and analysis of RIIO-1 performance we considered a number of strawman options for the proposed incentive in RIIO-2, as outlined in Table 7

Table 7: strawman options

Option	Description	Pros	Cons
Option 1: Retain current downside-only incentive	* Retain the incentive in the same format as in RIIO-1 with more challenging targets to encourage improvements	* Simple to understand and administer * Would expose NGGT to environmental costs of venting	* Difficult to determine what the emission target should be, and there is a risk that the target is set at inappropriate levels
Option 2: Make incentive symmetrical with financial rewards available	* Retain the incentive but introduce a financial reward for out-performing emission target	* May encourage further emission reduction than a downside-only approach	* Would potentially increase costs to consumers * Difficult to determine what emission target should be, and there is a risk of unjustified rewards to NGGT if the target is set too high
Option 3: Make incentive reputational only	* Remove financial penalties and rewards and rely on reputational aspect alone to encourage emission reduction	* Would be simple to understand and administer	* May result in increased emissions * Lack of competition in GT sector to make reputational incentives effective
Option 4: Remove incentive	* Remove the scheme completely and add emissions from venting to the overall GHG emission targets including BCF	* Would reduce the complexity of the price control by removing an incentive scheme * All emissions considered as part of environmental action plan	* Difficult to disaggregate effects of different emission reduction schemes * May result in increased emissions from venting

Proposed Approach

4.38 We are proposing to introduce an output for NGGT to manage the NTS so that the amount of gas vented from compressors is at an efficient level taking account of the environmental impact of venting and the cost of operating the NTS.

4.39 For RIIO-2 we considered four options as set out in the table above. Our initial view is that Option 1 – retaining the current downside-only incentive - offers the best value for consumers, while still encouraging NGGT to consider the impact on the environment when making decisions about compressor venting.

4.40 We therefore propose to maintain the GHG emissions from venting incentive in RIIO-2 as a downside-only ODI, with emissions targets to be proposed by NGGT that reflect an efficient level of GHG venting, with targets to be justified to their own User Group as well as the independent Challenge Group.

4.41 If implemented in this form, we would expect the targets proposed by NGGT to build on its current levels of performance against this incentive, with a strong element of challenge built in. We would want to see NGGT's performance on venting to improve on an ongoing basis, and we would expect the targets to reflect this ambition.

4.42 We recognise the point made by stakeholders that NGGT may have limited influence on venting decisions, as these are largely driven by flow patterns on the NTS. While this may be true, we think that NGGT has some control on how it chooses to respond to those flow patterns, and maintaining an incentive on NGGT encourages NGGT to consider the environmental impact of its decisions. We are open to considering options for reducing the 'strength' of the incentive, i.e. by reducing the penalty per tonne of carbon vented, to more appropriately reflect the extent to which NGGT can influence the amount vented.

4.43 We considered whether to make the incentive scheme 'symmetrical', ie with an upside reward for performance that is better than the target. However, we are currently not convinced that offering financial rewards for reductions in venting would be effective or proportionate, particularly if performance is not entirely within NGGT's control. We believe that a downside-only scheme, with a reasonable target based on expected levels of venting provides the most appropriate balance of risk and rewards for NGGT and consumers.

4.44 We also considered making the incentive reputational only, with no financial penalties. However, our current view is that the lack of relevant comparators in the GT sector would mean a reputational only incentive may not be as strong as in other sectors.

4.45 We also looked at removing the incentive completely and treating GHG emissions from venting as part of NGGT's overall GHG emissions and BCF. We welcome views on which approach is considered most efficient in reducing GHG emissions as well as views as to any other approaches to GHG which we may not have considered.

NTS Shrinkage

Purpose	To incentivise the efficient procurement and management of own use energy for the operation of NTS compressor, and energy that cannot be billed
Proposed Approach	We are proposing to retain the current symmetrical Financial ODI with a more challenging target based on greater transparency. We are also considering whether own use fuel should be removed from the scheme and included within the totex baseline allowance.

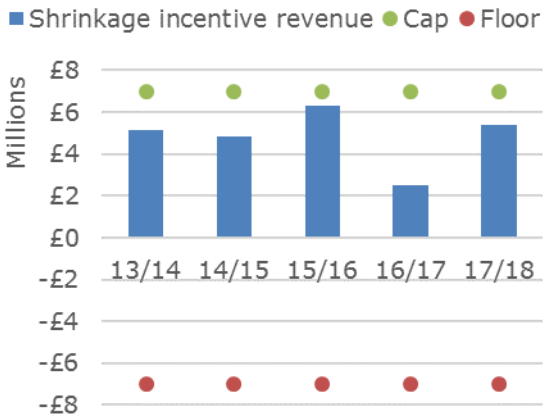
Background

4.46 The NTS Shrinkage incentive is a cost minimisation incentive across all components of shrinkage, with a target principally derived from an energy procurement cost benchmark. The components that comprise NTS Shrinkage are:

- Compressor Fuel Use (CFU): The energy used to run compressors to transport gas through the NTS. For gas-driven compressors this is Own Use Gas. For electrically driven compressors this is Electric Compressor Energy;
- Calorific Value (CV) shrinkage: The energy which cannot be billed due to the provisions of the Gas (Calculation of Thermal Energy) Regulations 1996 (amended in 1997); and
- Unaccounted for Gas (UAG): The quantity of gas which remains after taking into account all measured inputs and outputs from the system, own use gas consumption, CV Shrinkage and the daily change in NTS linepack. This is primarily attributable to leakage from the NTS.

4.47 Figure 10 demonstrates that NGGT has been able to consistently outperform its target during RIIO-1 — earning around £5m (in 2017/18 prices) each year in incentive payments as a result. The target cost of shrinkage is currently set in accordance with the NTS Shrinkage Incentive Methodology Statement.

Figure 10: Shrinkage incentive revenue (including pre-RIIO where known)



Proposed approach

4.48 We propose to introduce an output for NGGT to take reasonable steps to reduce the cost and amount of shrinkage on the NTS. For RIIO-2, we are proposing to retain an incentive as an ODI for NGGT to minimise the cost of shrinkage.

4.49 We have sought views through our stakeholder working groups to help assess whether the existing incentive would still be appropriate. Feedback from those stakeholders participating has suggested that the shrinkage target-setting process is not transparent and may not be producing targets that are challenging enough. The target cost of shrinkage is currently set in accordance with the NTS Shrinkage Incentive Methodology Statement produced by NGGT. The Statement is a short document describing the steps NGGT takes to set its shrinkage target each year. NGGT conducted a review of the NTS Shrinkage Incentive Methodology Statement in 2016, which was subject to consultation and our scrutiny.

4.50 If we were to retain this incentive, we propose to require NGGT to review the NTS Shrinkage Incentive Methodology with a view to making it transparent and to ensure the targets would be challenging and verifiable. We would also consider whether rewards under this incentive are appropriately calibrated, so that the benefits to consumers through reduced shrinkage are achieved at a reasonable cost.

4.51 Irrespective of this, we are also considering whether the 'compressor fuel use' element of the shrinkage incentive should be included within NGGT's baseline Totex allowance.

4.52 We also want to understand the extent to which shrinkage is within the control of the GSO and want to receive stakeholder views on this. We want to understand what actions the GSO can take to manage shrinkage, and examples of where these actions have been taken and the impact that they have had.

GTQ17. Do you think that the 'compressor fuel use' element of the shrinkage incentive should be included within NGGT's baseline Totex allowance? To what extent do you think elements of shrinkage are within the control of National Grid Gas

BCF reporting

Purpose	To encourage NGGT to reduce its overall business carbon footprint
Proposed Approach	We are considering whether the current reporting requirement should be retained.

Background

4.53 In RIIO-1, the only explicit environmental incentive in the gas transmission (GT) sector is the reporting of NGGT's Business Carbon Footprint (BCF).

4.54 The RIIO-1 BCF incentive is designed to increase transparency of network operators' GHG emissions and to encourage NGGT to monitor and reduce its level

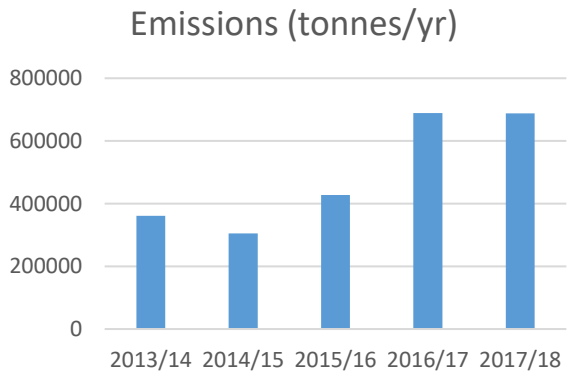
of GHG emissions at a business level throughout the RIIO-1 price control. The measure was introduced to ensure the TOs play their part in meeting the GBs government's climate change target to reduce carbon emissions by 80 per cent by 2050, based on 1990 levels.[11]

4.55 The BCF incentive is reputational only with no financial rewards or penalties attached, and does not form part of NGGT's licence conditions. NGGT is required to report Scope 1 and Scope 2 GHG emissions annually as part of its Regulatory Reporting Pack (RRP). NGGT's business carbon footprint is based on buildings' energy use, operational and business transport, fugitive emissions and fuel combustion.

4.56 The BCF incentive is currently the only environmental incentive that is rolled out across all of the network sectors i.e. electricity transmission, gas distribution and electricity distribution

4.57 NGG's performance during RIIO-1 suggests that the incentive in its current form is not leading to reductions in NGGT's BCF as intended. Despite emissions falling from 360,924 tonnes to 305,363 tonnes in the second year of RIIO-1, they have since risen to 688,534 tonnes in the latest reporting period, representing an increase of over 90% since the start of the price control, as shown in Figure 11. This is primarily due to increases in compressor run hours, which forms the major element of NGGT's BCF.

Figure 11: RIIO-1 BCF incentive performance



4.58 Across sectors, RIIO-2 Policy Working Groups expressed concern that the current BCF reporting provides limited transparency and comparability of company activities and performance. We received feedback that comparability and transparency should be strengthened in RIIO-2 to sharpen the reputational incentive.

Proposed approach

4.59 While we think there is merit in requiring NGGT to be transparent about the impact of its activities on the environment as measured through its BCF, we think the current scheme has weaknesses that have been highlighted to us by stakeholders.

[11] http://www.legislation.gov.uk/ukpga/2008/27/part/1/crossheading/the-target-for-2050

4.60 In particular, we share the concerns of stakeholders that NGGT's reported performance offers limited transparency and comparability, both across time and sectors. Moreover, much of NGGT's BCF arises out of compressor running and venting, both of which are covered by separate outputs and incentive arrangements.

4.61 Going forward, for the RIIO-2 price control, we would be keen to hear stakeholders' views on whether there is value in requiring NGGT to be transparent about the impact of its overall business on the environment. If we were to retain this requirement, we would expect NGGT to propose a transparent, comparable and consistent metric for its BCF as part of its Business Plan. We would also expect NGGT to consult with relevant stakeholders, including the TO User Group and the RIIO Challenge Group, when developing its metric.

4.62 If a transparent, comparable and consistent metric can be developed, we will consider retaining the BCF reporting obligation as an output, with a reputational ODI attached to it.

Low carbon energy systems and decarbonisation of heat

Purpose	To encourage NGGT to make a meaningful contribution towards the transition to a low carbon energy system and support the decarbonisation of heat.
Proposed Approach	We are proposing to use the business plan incentive to encourage NGGT to develop a robust plan to support our objectives in this area.

Background

4.63 One of the objectives of the RIIO-2 framework is that network companies make a full contribution to the low carbon transition. This includes taking responsibility for the direct environmental impacts of their networks as well as playing their role in the energy system transition.

4.64 Earlier in this chapter we set out our proposals to drive NGGT to be more accountable for delivering improving to the direct impacts of its activities on the environment. In this section, we look at the potential measures to encourage NGGT to support the energy sector to decarbonise, as well as to be proactive in overcoming challenges and capitalising on opportunities that benefit consumers.

4.65 In RIIO-1, a key objective is that the price control package enables NGGT to contribute to the GBs environmental and energy targets. Accordingly, a combination of output incentives as well as other parts of the regulatory framework were introduced to drive better performance and also to encourage NGGT to play a full part in meeting the UK's targets.

4.66 We consider that different arrangements may be needed in RIIO-2 to incentivise NGGT to utilise the opportunities presented by new technologies, new ways of operating, new market participants, whole system thinking, and innovative commercial arrangements.

4.67 It is important that the price control arrangements strike the right balance. Financial incentives can be a powerful tool to spur NGGT to bring forward innovative solutions over the course of the price control. However, it is important that financial incentives are designed properly in order that they offer genuine

value for money for consumers. Most importantly, this requires setting appropriate benchmarks or targets, and metrics that can be objectively and transparently applied to measure performance against these targets. Our current view is risks of setting inappropriate targets or metrics outweigh the potential benefits from including a financial incentive in this area.

Proposed approach

4.68 For the RIIO-2 price control, we are proposing to require NGGT to develop a robust plan to support the transition to low carbon energy systems and the decarbonisation of heat. This plan should be submitted to us as part of its Business Plan submission.

4.69 There are a number of ways in which NGGT can play a role in moving to a low carbon energy system. For instance, this may include allowing easier and quicker access to the network for smaller and more distributed gas sources, such as biomethane (biogas) and synthetic natural gas (Bio SNG).

4.70 Separately we want NGGT's investment plans over the RIIO-2 price control period to be proactive in supporting the decarbonisation of heat. There is some uncertainty about future government policy in this area, but we expect NGGT to take account of the different potential pathways for decarbonisation and take proactive steps to support the move towards low carbon heating. This may involve adopting a coordinated whole systems approach with GDNs to support initiatives that may be distribution network-led.

4.71 We propose that NGGT work with its stakeholders and Customer Engagement Group/User Group to develop its plans. We are also proposing to encourage initiatives that involve collaboration with other network owners and, where appropriate, third parties.

4.72 We are not proposing to introduce outputs or PCD in this area. However, we propose to assess the quality of NGGT's plans in this area as part of the overall Business Plan quality incentive. Further details about the Business Plan incentive are available in the Core Document.

GTQ18. Do you have any views on how NGGT's can make a contribution to the transition to a low carbon energy system and support the decarbonisation of heat?

Opportunity to propose bespoke outputs

4.73 We are consulting on whether we should introduce an option for NGGT to develop bespoke outputs and ODIs for delivering on our overarching environmental objectives. If progressed, we propose to assess proposals for a bespoke ODI for additional contribution against the criteria set out in the Core Document.

4.74 In assessing proposals for a bespoke output or ODI, we would look for evidence that the output reflects a service that consumers expect to receive and that is not already being funded or provided. In order to ensure that the price control setting process and its ongoing operation is efficient and manageable, it is important that bespoke outputs are only proposed for key areas of high importance to consumers so the focus on companies remains on the issues that matter most. We ask NGGT

to bear these considerations in mind so that the price control does not become too complex or distracts away from consumers' priorities.

4.75 We are also proposing that any bespoke ODI that is approved for RIIO-2 will only be rewarded upon delivery of the output.

4.76 We propose that NGGT work with its stakeholders and Customer Engagement Group/User Group to consider suitable initiatives. We are also proposing to encourage initiatives that involve collaboration with other network owners and, where appropriate, third parties.

4.77 For the avoidance of doubt, any potential bespoke ODI for additional contribution would only be for new outputs that are not captured by the price control framework. It is not intended for research and development trials, innovation projects or large capital projects which are covered by other parts of the price control.

4.78 We would welcome stakeholders' views on the proposal for NGGT to develop bespoke ODIs with stakeholders for delivering an additional contribution to the low carbon transition. We welcome views on the kind of activities not captured elsewhere that could be captured through such an ODI.

4.79 We also are considering whether proposals submitted for a bespoke additional contribution ODI are included or incorporated in our assessment for the Business Plan incentive score. Well-justified proposals could lead to a higher score and a reward, conversely a poor justification could lead a lower score and a penalty.

GTQ19. Do you think we should consider proposals from NGGT for additional outputs and incentives to support our environmental objectives?

Enabling whole system solutions

4.80 The energy system is changing and is becoming more interlinked. The actions of a network company can impact other network companies in the same or other energy sectors, as well as non-energy sectors such as transport. As these linkages grow, so too does the value of coordination across the whole system. For example, increased coordination between NGGT and gas distribution network operators could help deliver efficiencies in areas such as pressure management and decarbonisation of heat.

4.81 Chapter 5 of the Core Document sets out our proposed approach to enabling greater coordination between network companies so that efficient whole systems solutions can be delivered.

5. Output: Maintain a safe and resilient network

This chapter sets out a range of output measures we are proposing for RIIO-GT2, designed to ensure NGGT efficiently delivers a safe and resilient network that is also responsive to change. Applying the principles of the RIIO-2 Framework, we propose a range of outputs and incentives. This chapter should be read in conjunction with the Core Document, in particular, Chapter 6 on outputs.

Chapter 5 questions

GTQ20. What are your views on the overall outputs package considered for this output category?

GTQ21. For each potential output considered (where relevant):

a) Is it of benefit to consumers, and why?

b) How, and at what level should we set targets? (eg should these be relative/absolute).

c) What are your views on the design of the incentive? (eg reward/penalty/size of allowance).

d) Where we set out options, what are your views on them and please explain whether there are further options we should consider.

GTQ22. What other outputs should we be considering, if any?

GTQ23. What are your views on the RIIO-1 outputs that we propose to remove?

In addition to the above, where relevant, please the see output specific questions below.

All questions, including additional output specific questions, are set out in Appendix 3.

Introduction

5.1 Network companies need to deliver a safe and resilient network that is also efficient and responsive to change. Although maintaining a safe and resilient network is identified as a specific proposed output category for RIIO-GT2, our proposals across the other output categories would also support this goal, along with the wider RIIO-2 framework, and statutory health and safety requirements led by the HSE.

5.2 This chapter should be read in parallel with Chapter 6 of the Core Document which describes:

- The rationale for having an output category to 'Maintain a safe and resilient network'.
- The broad RIIO-2 approach to specific outputs (eg types and the approach to developing company ('bespoke') outputs).

Summary of RIIO-GT2 proposed outputs

Table 8: Proposed outputs to support the delivery of a safe and resilient network for RIIO-GT2

Output name	Output type*	Company driven target**	Comparison to RIIO-1
Asset Resilience	See core document		
Safety	No specific output proposed	No	Retained RIIO-1 requirement
Network Capability Assessment	LO	No	New RIIO-2 output
Network Capability Target	LO	Yes	New RIIO-2 output
Maintain 1:20 demand capability	LO	No	Maintain RIIO-1 output
Network Asset Risk Metrics	PCD/ODI	Yes	Revised RIIO-1 output
Cyber resilience	PCD	Yes	New output
Physical security	PCD	No	New output

* ODI(R/F) = Output Delivery Incentive (Reputational/Financial), PCD= Price Control Deliverable, LO= Licence Obligation

** Company driven target signifies an output where we expect to see extensive company-led engagement (including with their CEG) to justify a stretching performance target. This could lead to performance targets varying by company.

Asset resilience

5.3 We want to ensure that NGGT manages its network so that it provides a safe, secure, reliable and efficient service to network users. As part of this, should take appropriate measures to secure the long-term resilience of its assets and network.

5.4 For the RIIO-2 price control, we are proposing a cross-sector approach to asset resilience that would apply to gas transmission and other sectors. Further details are set out in the Sector Specific Methodology.

Safety

Purpose	To ensure that NGGT complies with applicable health and safety legislation
Proposed Approach	We are proposing to retain the existing obligation to comply with health and safety legislation.

Background

5.5 In RIIO-1, we introduced the safety output which requires NGGT to comply with applicable health and safety legislation. This was done to ensure that NGGT continues to design and operate its network to ensure the safety of the public and employees, in line with its statutory obligations. The Health and Safety Executive (HSE), further to applicable legislation, monitors and enforces performance in this area.

5.6 In RIIO-GT1, we also ensured that long-term safety considerations were captured through deliverables relating to asset risk (asset health, criticality and replacement priorities). More information on these, including proposals for RIIO-GT2 is available in the asset resilience section of the Sector Specific Methodology.

Proposed approach

5.7 We are proposing to retain the current approach under RIIO-GT1, and continue to require NGGT to design and operate its network in a manner that ensures

compliance with relevant health and safety regulations, including the Pipeline Safety Regulations 1996, Pressure Systems Safety Regulations 2000 and Gas Safety (Management) Regulations 1996.

5.8 We propose not to attach a formal price control output or delivery incentive to this requirement as NGGT's performance against its statutory obligations are monitored and enforced by the HSE. Our approach is designed to complement, rather than duplicate, the HSE's role in this area.

5.9 We welcome feedback from stakeholders on our proposed approach to safety.

GTQ24. Do you have views on whether the proposed approach on safety is appropriate for RIIO-GT2?

Network capability

Purpose	To ensure NGGT delivers an NTS that has the physical capability to efficiently meet the current and future needs of NTS users.
Proposed Approach	We propose that NGGT should undertake an assessment of the physical capability of the NTS, and propose targets for physical capability to be delivered by the end of RIIO-2. Where baseline obligated capacities are found to be at inappropriate levels, we may modify NGGT's licence to make appropriate reductions to the baseline obligated capacity levels (entry and exit). We also propose a new licence condition that would require NGGT to deliver a target level of physical capacity on the NTS by the end of the RIIO 2 period and a new licence condition that would requires NGGT to submit an annual report, that describes the physical capacity on the NTS. We are proposing an Uncertainty Mechanism (price control reopener) to allow for changes to the network capability targets and allowances.

Background

5.10 The capability of the NTS is currently defined by reference to a set of baseline Obligated Entry Capacities and Obligated Exit Capacities. NGGT's licence requires it to offer at least the obligated levels of entry and exit capacities for users to book through various mechanisms described in the Uniform Network Code (UNC). Once capacity has been booked through these mechanisms, users have a right to put in (if entry capacity is booked) or take out (if exit capacity is booked) gas up to the amount of booked capacity during the period covered by the booking.

5.11 Collectively, the obligated entry and exit capacities describe the minimum capability of the NTS that NGGT is required to maintain under its licence. The licence, however, does not require NGGT to maintain actual physical capability to the level of these obligated capacities. NGGT is allowed to use various commercial tools at its disposal to manage flows, if for instance, actual physical capability is not available to accommodate the amount of booked capacity or expected flows in or out of the NTS.

5.12 NGGT is funded as part of its periodic price controls for reasonable and efficient costs associated with meeting its capability obligations whether that involves expenditure on physical assets or on commercial tools. Our approach in previous price controls (including the current RIIO-GT1 price control) has been to hold NGGT to account for offering the obligated amounts of entry and exit capacities for sale. We have not so far required NGGT to maintain physical capability to deliver those obligations, instead we have relied on NGGT to efficiently manage its obligations through a combination of investment in physical network assets and expenditure on, or exposure to, commercial tools.

5.13 Whilst we do not believe that it would be efficient for NGGT to maintain sufficient physical capability to meet all of its capacity obligations without resorting to commercial tools, we want to ensure that NGGT manages the trade-off between physical assets and commercial tools efficiently. This would require a careful assessment of the physical capability of the NTS and a forecast of supply and demand at different times and under different scenarios.

5.14 We would want to ensure that NGGT's expenditure plans, both on physical assets and on commercial tools, would be informed by this assessment.

5.15 Separately, we would want NGGT to consider whether the current levels of obligated capacity reflect the actual and forecast needs of NTS users. The current levels of obligated capacity were last reviewed in 2007, and there is a risk that the obligated levels of capacity that were set following that review no longer reflect the needs of NTS users. Rolling forward the current levels of obligated capacity without considering whether they remain appropriate could lead to substantial consumer detriment, as discussed further below.

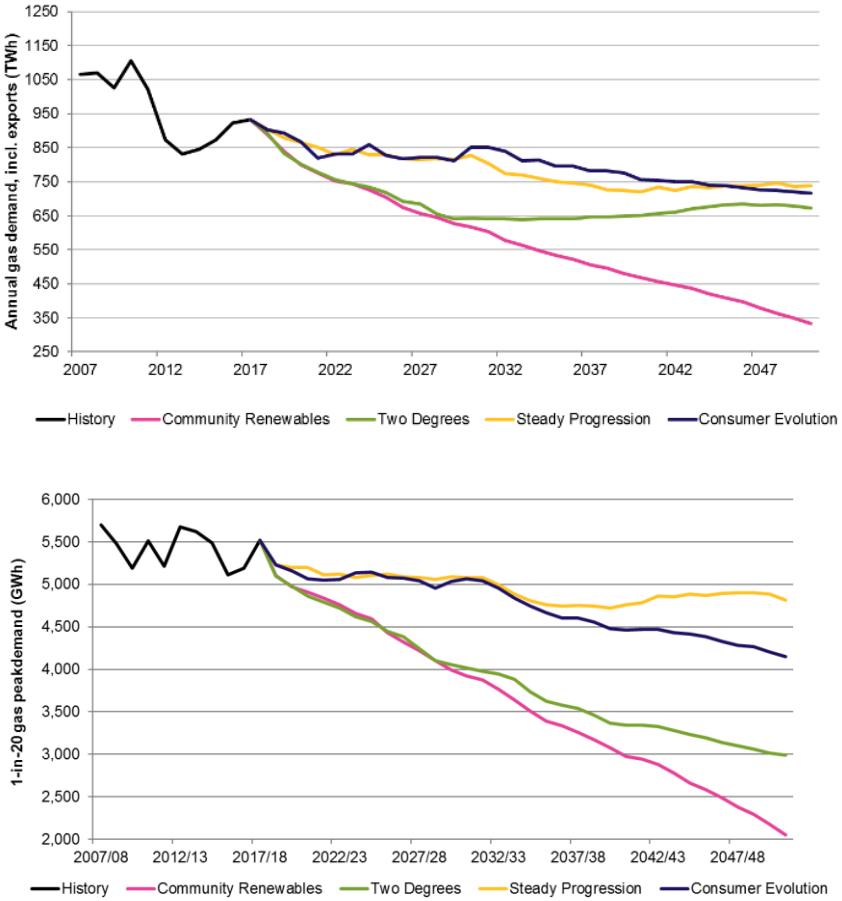
Falling Demand

5.16 In recent years, the amount of gas flowing in the pipelines of the gas transmission network in GB has fallen, and this trend is set to continue. There is abundant spare capacity on the gas transmission network due to lower demand, lower supply of gas and increased imports via interconnectors and shipped LNG.

5.17 When the baselines were last reviewed in 2007, annual gas demand and 1-in-20 peak gas demand were at considerably higher levels than they are now. Annual gas demand is expected to decrease significantly in all scenarios used by NGGT in its Future Energy Scenarios (FES)[12] and while the decrease is not expected to be as significant for the 1-in-20 peak gas demand, most scenarios show differing degrees of decline over different timescales.

[12] http://fes.nationalgrid.com/fes-document/

Figure 12: Annual gas demand and 1-in-20 peak gas demand, Great Britain, 2007-2050

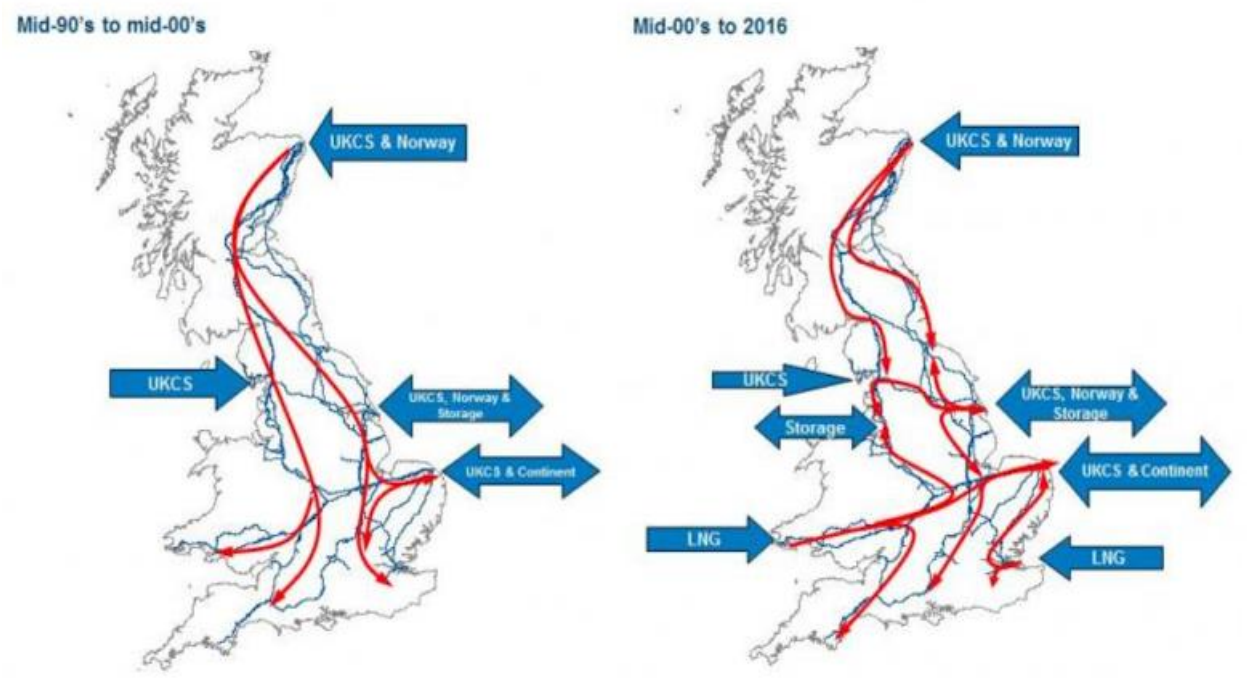


Source: National Grid – 2018 Future Energy Scenarios and National Grid's Ten Year Statements

Changing Gas Supply Flows - past and future

5.18 Not only has the demand for gas fallen in the recent years, gas supply patterns have also changed considerably since the mid -1990s to 2000s, when supply was dominated by the UK Continental Shelf (UKCS). At that time, supply patterns were relatively easy to predict throughout the year as gas mainly entered the system in the north and travelled southward. With the decline of UKCS production, new imports and medium-range storage sites were added to meet demand, dispersing available supply sources and bringing them closer to demand points. In the process, historical baseline capacities on entry and exit may have become obsolete.

Figure 13: Change in gas supply patterns over the past 20 years



Source: National Grid Gas

5.19 In the future, UKCS production is forecast to continue to decline. The Future Energy Scenarios (FES) forecast that (a) imported gas may become more important; and (b) the development of other indigenous sources (shale gas, biomethane and biosubstitute natural gas (bioSNG)) may replace these conventional supplies, bringing additional uncertainty with regard to the extent and location of the need for capacity on the NTS.

Inefficient levels of constraint management targets and costs

5.20 To the extent that there is a gap between the obligated levels of capacity and the physical capability of the NTS (ie if the obligated capacity exceeds physical capability), NTS users are exposed to the risk that commercial tools need to be used to manage the shortfall, and consumers are exposed to the expected and actual costs associated with the use of those tools.

5.21 Although the actual use of commercial tools by NGGT during the current RIIO-GT1 is minimal, there remains a risk that these tools are used – and the annual expected cost during the RIIO-GT1 period according to NGGT is in excess of £20m a year. NGGT recovers the actual cost of using these tools, plus a share of any under or overspends against this forecast. Please see Chapter 3 on Entry and Exit Capacity Management for further details on constraint management tools and the treatment of constraint management costs.

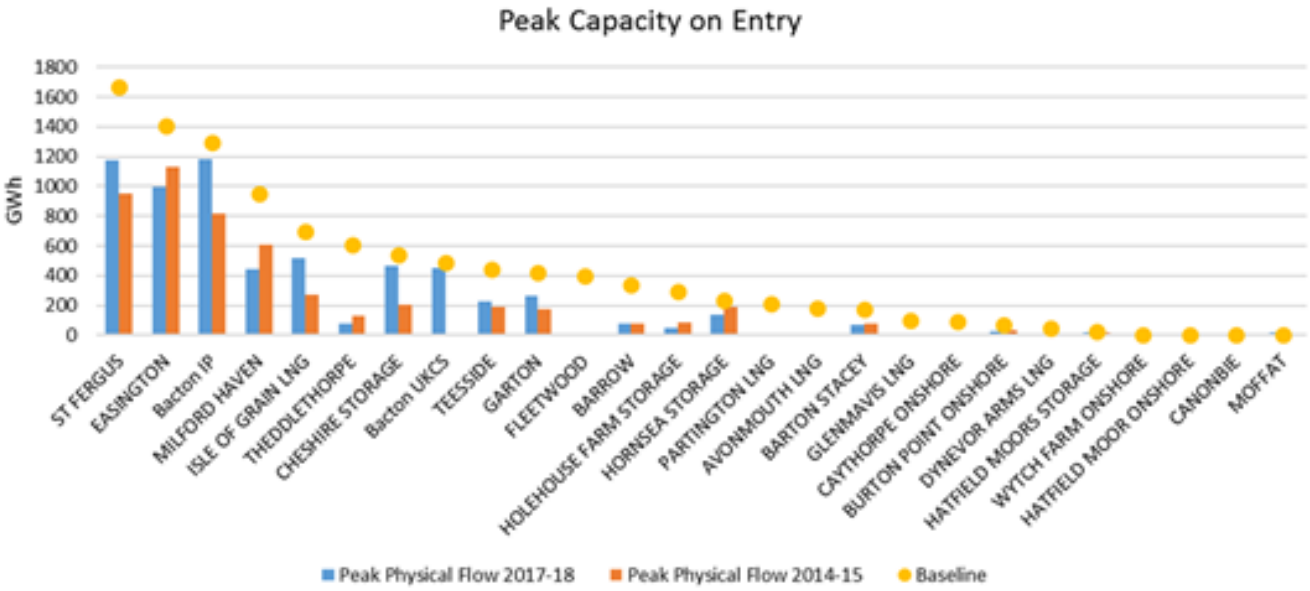
5.22 We want to ensure that the CCM targets are set at an appropriate level. If it were to be set by reference to the current obligated levels of capacity rather than actual or expected maximum flows, there would be a risk that the targets would be set at an inefficiently high level, to the detriment of consumers.

The existing network may not be aligned with future consumer needs

5.23 Whilst capacity needs have changed dramatically and the trends have reversed, the baselines and capacity access regime is still based on the same arrangements which were put in place over ten years ago.

5.24 Figure 14 shows the peak physical flow on entry for the 2017-2018 and 2014-2015 winter months compared to baseline capacity values for every Aggregate System Entry Point (ASEP). With a few exceptions (eg Bacton IP, Bacton UKCS, Easington), baseline entry capacity values are considerably higher than the actual peak capacity flow in those two years.

Figure 14: Peak and baseline capacity per entry point, Winter months 2014-2015 and 2017-2018

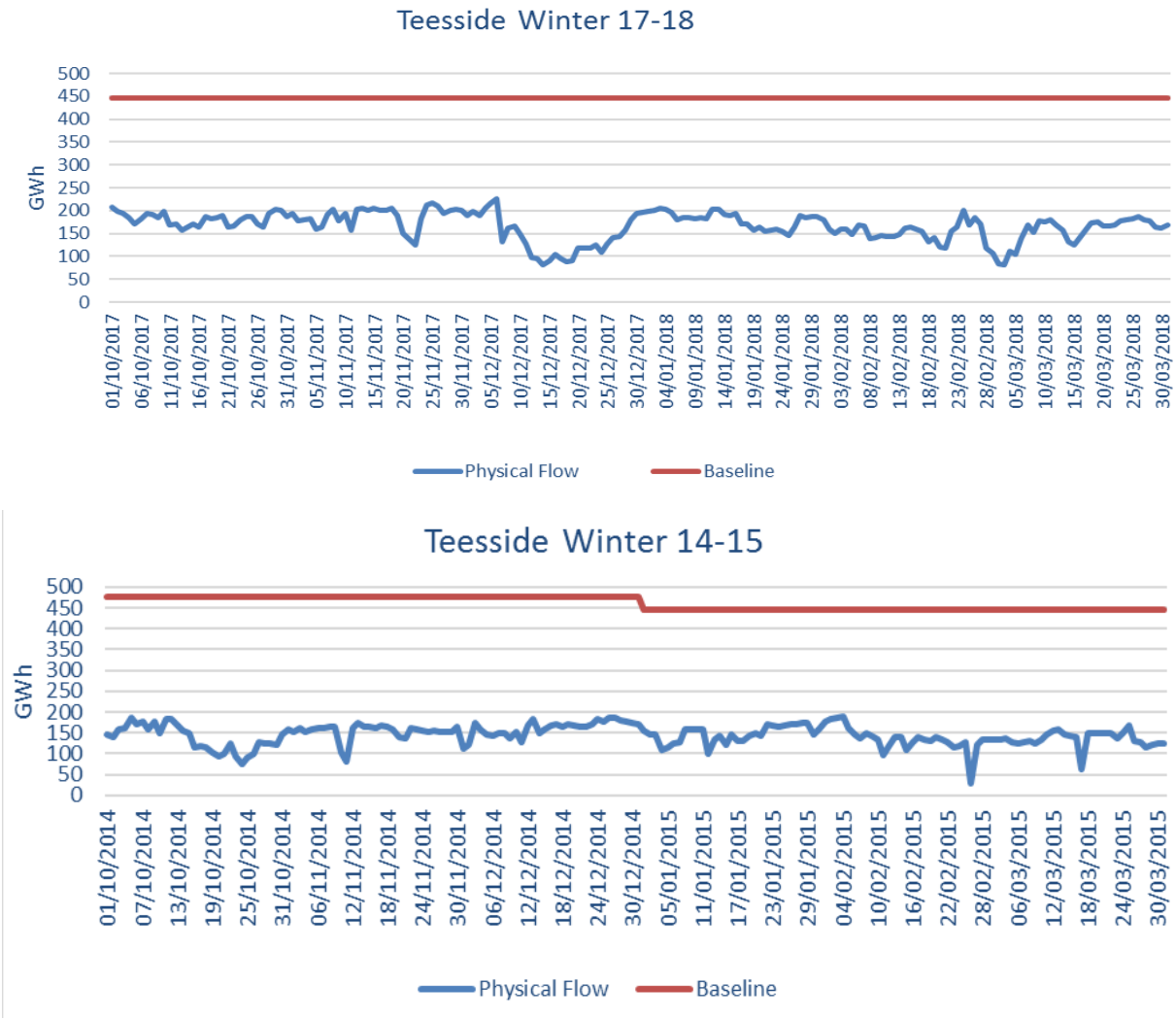


Source: NGGT, on the basis of publicly available sources

Notes: The data has not been validated. The obligated levels are as of October 2018. They take into account confirmed substitution and historic incremental signals. As such, they may differ from the values in the licence.

5.25 Daily data illustrates that for a majority of entry points, baseline capacity values significantly exceed daily entry physical flow. For example, at Teesside in Winter 2017-2018, daily capacity was on average half of the baseline value. This difference was even more pronounced in 2014-2015, despite the fact that the baseline value was reduced on 1st January 2015 by 30.9 GWh daily as a result of capacity substitution procedure. Data for a selection of entry points is shown in Appendix 1.

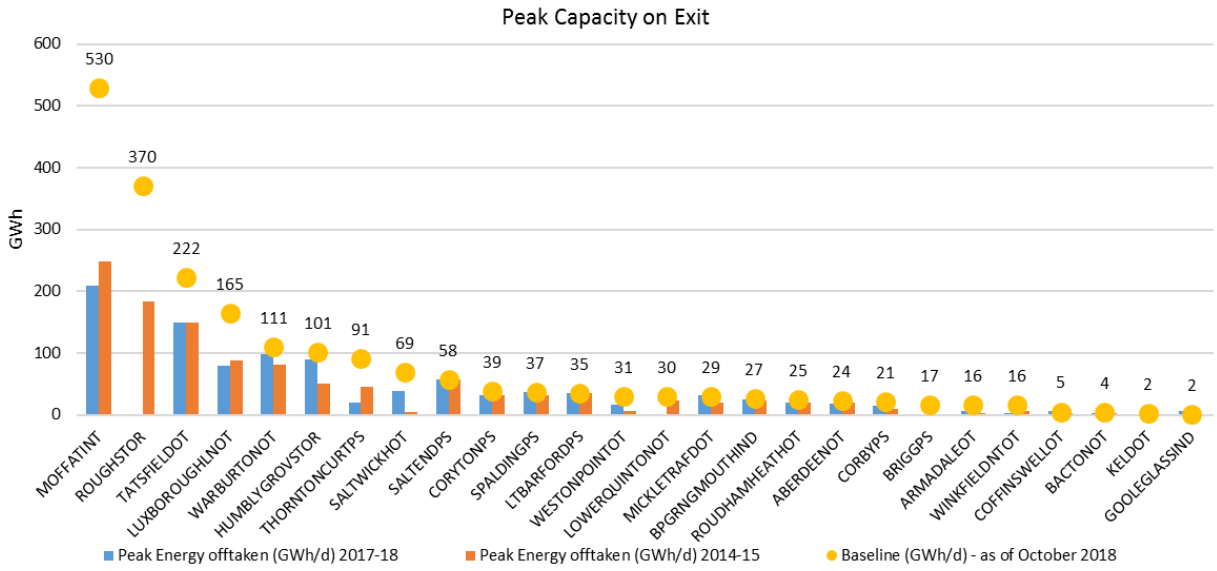
Figure 15: Daily physical flow and baseline values at Teesside, Winter months 2014-2015 and 2017-2018



Source: NGGT, on the basis of publicly available sources

5.26 In relation to exit points, NGGT's baseline capacity values exceed the peak physical flow, but to a lesser extent and not on all exit points. Figure 16 shows a selection of exit points in Winter 2014-2015 and 2017-2018 compared to the 2018 obligated capacity levels on exit. Appendix 1 shows maximum day exit flows in relation to the 1-in-20 exit forecasted peaks on a zonal basis and for a longer period of time.

Figure 16: Peak and baseline capacity for a selection of exit point, Winter months 2014-2015 and 2017-2018



Source: NGGT, on the basis of publicly available sources

Notes: The data has not been validated. A selection of exit points is shown. The obligated levels are as of October 2018. They take into account confirmed substitution and historic incremental signals. As such, they may differ from the values in the licence.

Current levels of obligated capacities may lead to inefficient network investment

5.27 As set out earlier, the current levels of obligated entry and exit capacities collectively describe the capability of the NTS that NGGT is required to maintain. These levels set out the theoretical maximum flows for which NGGT must plan its network. While some capacity is booked by NTS users through long term auctions, which in turn provides long term signals to NGGT, a significant amount of capacity is booked in short term auctions (eg day ahead). This means that NGGT is not able to rely on long term signals from NTS users to plan its network – instead it must plan for credible maximum flows up to the level of obligated capacities (unless this is constrained in some other way, eg the technical capacity of the gas terminal or interconnector).

5.28 To the extent that obligated entry or exit capacities are higher than credible maximum flows, NGGT has to choose the most efficient balance between building or maintaining physical network capability to cover the difference or carrying the risk and cost of commercial tools in the event of a shortfall in physical capacity.

5.29 The greater the difference between obligated capacities and the expected maximum flows, the higher the risk to NGGT and consumers, and higher the likelihood that NGGT decides to mitigate part of that risk by building new or maintaining existing physical network capacity. We think such investment could be inefficient – in the sense that it is driven by the levels of obligated capacity, rather than by actual or expected maximum flows.

5.30 Over the eight years of the current RIIO-1 price control, NGGT is expecting to invest approximately £1.5 billion on developing and maintaining the physical capacity of the network, which is an average of £188m each year. NGGT is currently working on its investment plans for the next price control (RIIO-2), but we expect that its plans would include significant amounts of expenditure on its

network. More specifically, NGGT is planning to undertake significant investments on its compressor fleet to comply with emissions legislation.

5.31 We want to ensure that NGGT's investment plans are targeted at meeting actual or expected maximum flows based on latest available information, rather than a set of obligated capacities that were set in 2008, which may not reflect the needs of NTS users. In the context of changing demand and supply patterns this problem is only likely to get more acute in the future.

Inefficient allocation of costs between end consumers and other NTS users

5.32 With significant headroom between obligated levels of capacity and the expected maximum flows into the network, under the current charging arrangements, most entry capacity is commonly bought on the day at zero or very low auction floor prices. Short-term (day-ahead and within-day) capacity 'reserve' prices are heavily discounted. Network users have been switching to these cheaper capacity products rather than buying long-term (quarterly for up to 16 years) entry capacity, as the risk of capacity scarcity is very low.

5.33 Capacity users currently benefit from these arrangements through the 'option value' that the capacity headroom offers. NTS users are able to rely on spare capacity being available at very low cost without having to make long term financial commitments to reserve capacity.

5.34 While some NTS users have benefitted from this option value, customers are exposed to the cost of maintenance or replacement of physical assets used to provide this capacity. With a significant proportion of NTS assets at or nearing the end of their technical asset lives, NGGT will have to make decisions on whether to replace these assets, and if so, whether to do this on a like-for-like basis.

5.35 The current arrangements for allocation of NTS capacity have substantively been in place since 2002, with one of its key principles being the fair allocation of costs been NTS users (i.e. shippers and end users). For incremental (or new) capacity, this means that shippers that require new capacity must make a long term financial commitment (the user commitment principle) that covers a substantial portion of the cost of any physical investment required to provide that capacity.

5.36 Falling demand and gas flows have meant that very little network investment has been undertaken in the past 10 years or so to cater to new capacity requests. Almost all of the investment on the network has been focused on asset health and replacement activities. While the 'user commitment' principle has not been explicitly applied to expenditure asset health or replacement expenditure, we think it is appropriate for such expenditure to be driven by clear signals of long term need, preferably expressed through long term capacity bookings which brings with it a degree of financial commitment.

5.37 The current charging arrangements are under review, and there may be significant changes to the way in which long term and short term capacity rights are charged for in the future. These changes could be in place by the start of the RIIO-2 price control period in 2021, and it is possible that these changes would address the issue of inefficient allocation of costs between end consumers and other users by ensuring a reasonable balance of charges between long term and short term capacity products.

Proposed approach

5.38 We propose that our approach on network capability for RIIO-2 should be based on three principles:

- Network investments should be driven by the actual and forecast need of NTS users, expressed in terms of expected maximum flows in and out of the NTS at different entry and exit points.
- To the extent that funding is provided through the price control for expenditure on the NTS, NGGT should be held accountable for the delivery of appropriate levels of actual physical capability.
- Investments on the NTS should be recovered through a fair allocation between NTS users, and should not place unreasonable costs on end consumers.

5.39 NGGT has a licence obligation (Special Condition 7B) to develop and maintain the Transmission Planning Code (TPC), which sets out the methodology that it would use to determine the physical capability of the NTS. In line with the TPC, NGGT carries out a "Network Capability Analysis" to identify the physical capability of the NTS under different scenarios.

5.40 We propose to require NGGT to review, as part of its Business Plan development for the RIIO-2 price control, the physical capability of the NTS under reasonable scenarios and assumptions about supply and demand at different entry and exit points, in line with the approach set out in the TPC. Our proposal is that this review should consider the physical capability of the NTS on 1 April 2021, making appropriate assumptions about likely developments on the NTS in the intervening period.

5.41 We also propose to require NGGT to consider, at the same time, whether the current levels of baseline obligated entry and exit capacities at each entry and exit point remain appropriate. In doing so, we would expect NGGT to take account of its assessment of the current physical capability of the NTS, the expected maximum (peak) flows into each entry point and out of each exit point, actual capacity bookings at those points, and a reasonable level of headroom on top of the physical capability of the NTS that takes account of the expected cost of constraint management. We would not normally consider the level of headroom to be reasonable if it means that the obligated capacity materially exceeds the forecast maximum (peak) flows or actual capacity bookings. We would expect NGGT to justify its proposed headroom by reference to risks to security of supply, risk of constraint management action, and the associated cost to consumers through the constraint management incentive targets.

5.42 Where current baseline obligated entry or exit capacities at particular points were found to be at an inappropriate level, that is in excess of the forecast peak flows plus reasonable headroom, we would expect NGGT to propose revised and lower levels for baseline obligated capacities that are more in line with its assessment of actual and forecast physical capability. Under the current proposals, we would also not expect NGGT to propose reductions to baseline obligated capacities to a level that is lower than the physical capacity of the NTS, unless such reductions are demonstrably in the interests of consumers taking account of current and future need for that capacity. For the avoidance of doubt, we would not expect NGGT to propose any increases to the current levels of baseline obligated capacities, as there are alternative mechanisms to release additional capacity, including the

incremental capacity release and capacity substitution mechanisms that are available to users who require additional capacity above the current baselines.

5.43 In developing its investment plans for the RIIO-2 period (ie 2021-2026), we would expect NGGT to consider the level of physical capacity that it would need to maintain on the NTS over the period. In doing this, NGGT should take account of the levels of obligated capacity (incorporating any changes proposed by NGGT) and forecast changes in the levels and patterns of demand and supply over the RIIO-2 period and beyond. We would expect NGGT's investment plans to be closely linked to its assessment of the required level of physical capacity, and how this would need to evolve over the duration of the RIIO-2 period.

5.44 We propose to require NGGT to submit as part of its final Business Plan the following:

- An Initial Network Capability Report setting out the results of its assessment of the physical capability of the NTS on 1 April 2021. Our proposal is that this should be expressed in the form of maximum flow capacities that can be physically accommodated on NTS at each entry and exit point. The report should include a description of the assumptions made.
- A Baseline Obligated Capacities Report setting out the results of its assessment of the appropriateness of the current levels of baseline obligated entry and exit capacities, including any proposals for reductions to baseline obligated entry and exit capacities.
- A Network Capability Target Report setting out its forecast of the physical capability of the NTS that it would plan to deliver by the end of the RIIO-2 price control period (i.e. the "network capability target"). Our proposal is that this should be expressed in the form of maximum flow capacities that would be physically accommodated on NTS at each entry and exit point. All assumptions and scenarios considered should be clearly explained.

5.45 We would expect NGGT to submit draft versions of these reports in its draft Business Plan submissions in July 2019, and the final versions in its final Business Plan submission in December 2019.

5.46 We would expect NGGT to consult extensively with stakeholders in developing these reports, particularly with a view to understanding the future needs of different NTS users. We would also expect NGGT to carry out a comprehensive assessment of the impact of its proposed changes to baseline obligated capacities on different stakeholders, and include a report setting out the results of its impact assessment as part of its Business Plan submissions.

5.47 As part of our assessment of NGGT's Business Plan submissions, we would assess these reports and any supporting analysis provided by NGGT. Following our assessment, we may decide to revise the baseline obligated capacity levels at one or more entry or exit points. If we were to do so, we would consult on these proposed revisions as part of our broader consultation on our Draft Determinations for the RIIO-2 price control in 2020. Following our consultation, and taking account of stakeholder feedback, we would make a final decision on changes to baseline obligated capacities (if any), and make any necessary modifications to NGGT's licence that would take effect from 1 April 2021 (or such later period as we may specify).

5.48 We propose to create a new Network Capability output as a licence condition for NGGT to deliver a target level of physical network capability by the end of the RIIO-2 price control period, which would be based on NGGT's network capability target report.

5.49 We also propose to create a new Annual Network Capability Assessment output as a new proposed licence condition for NGGT to deliver annual reports setting out the physical capability of the network at a specific point in each year of the price control period. We would use these reports to assess the progress made by NGGT in meeting its network capability output.

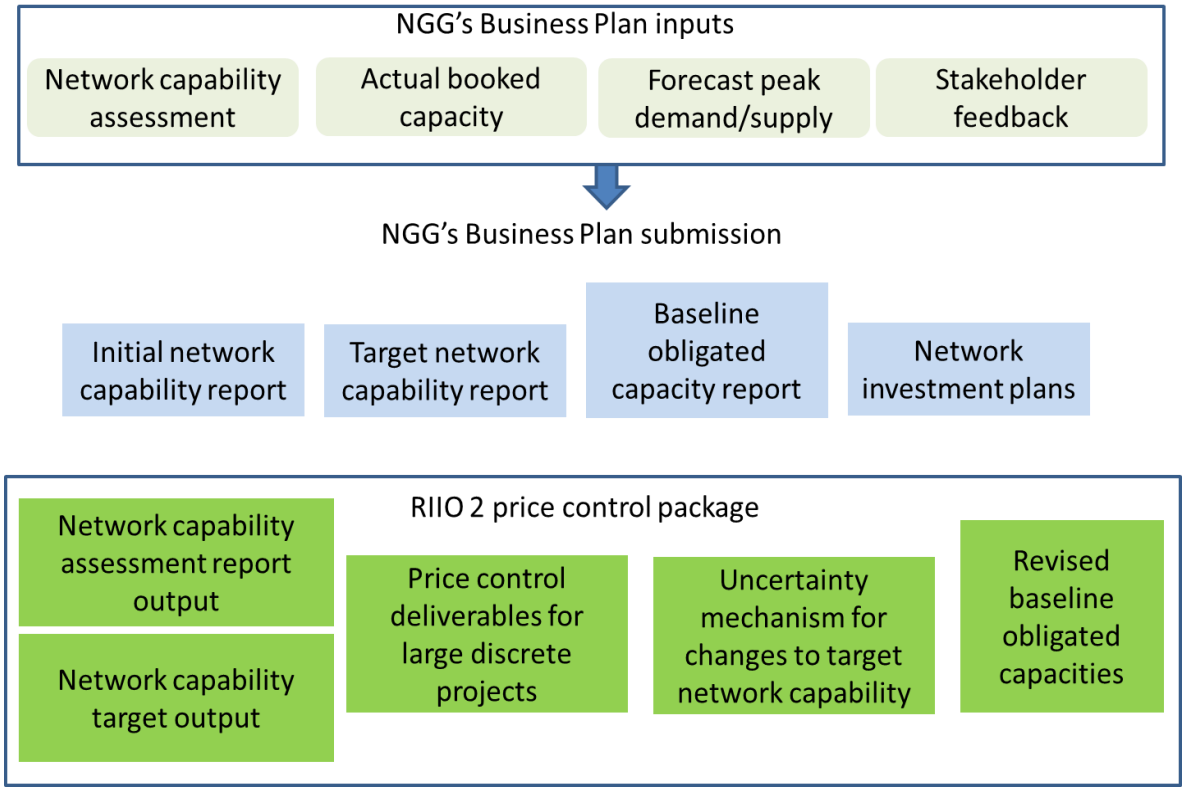
5.50 We propose to create an uncertainty mechanism in the form of a price control re-opener, by which either NGGT or Ofgem would be able to propose changes to the network capability output to reflect changes to the network capability target that may be necessary or appropriate in light of unforeseen changes to demand, supply or network conditions. Our current proposal is that there would be a single re-opener window (in year 2) within which either NGGT or Ofgem would be able to propose changes to the target, with any changes to take effect from year 3.

5.51 We would expect NGGT's network expenditure plans as set out in its Business Plan submissions to be consistent with the delivery of the network capability output. In particular, we would expect NGGT's Business Plan to demonstrate that its proposed expenditure on network assets would be necessary to meet its outputs (i.e. the Needs Case) and would be an efficient and proportionate way of meeting them.

5.52 At the end of the RIIO-2 price control, we intend to hold NGGT to account for the delivery of the network capability output. If the output is not delivered, we may make appropriate reductions to NGGT's allowance to account for this non-delivery.

5.53 Where NGGT expenditure plans involve large discrete investment projects, we would expect to create new Price Control Deliverables to hold NGGT accountable for the successful delivery of those projects. In line with wider policy in this area, we would claw back any allowances for Price Control Deliverables if they were not delivered in full.

Figure 17: Overview of our proposed approach to network capability



GTQ25. Do you agree with our assessment of the problems with the current arrangements, and how these problems can lead to consumer detriment?

GTQ26. Do you agree with our proposal to require NGGT to carry out an initial network capability assessment and submit the results as part of its Business Plan?

GTQ27. Do you agree that if baseline obligated entry or exit capacities are found to be at inappropriately high levels, we should consider revising them downwards in line with NGGT's proposals?

Arrangements for accessing unsold capacity

Background

5.54 Entry and exit capacity depends on the capability of the wider network. It is therefore possible to 'substitute' network capacity between entry points and between exit points. The arrangements for accessing unsold capacity govern how NGGT can re-allocate ('substitute') unsold network capacity to where it is needed. These arrangements ensure that, wherever possible, demand for new capacity is met by moving existing unsold capacity to meet demand. This makes possible significant savings for consumers and producers who would otherwise have to fund investment in the network to provide new capacity.

5.55 Capacity substitution was introduced as part of the 2007-2012 price control. The principles of entry and exit substitution and entry capacity transfer and entry

capacity trade are defined in the Special Conditions 9A of the NGGT's gas transporter licence.

5.56 Since its introduction, capacity substitution has been used to satisfy all new incremental capacity requests (two on entry and 15 on exit[13]) without additional investment in the network. As NGGT receives no additional funding for substituting capacity, substitution delivers real benefits and lower costs for consumers. The evidence of the capacity substitution requests to date suggests that this has become a well-established 'business as usual' means of re-allocating unsold capacity rights.

5.57 However, we think there is room for improvement in the current arrangements. We think that is particularly the case for the rules around capacity substitution. We think the procedures could be improved to make the process simpler, faster and more predictable.

5.58 We also note that the network capability review proposed in Chapter 5 could affect both the levels of capacity which NGGT is obliged to offer for sale and the levels of unsold capacity. We believe that reviewing the arrangements for allocating unsold capacity using substitution is complementary to the review of baseline capacities.

Proposed approach

5.59 We propose that NGGT should review the current arrangements for accessing unsold capacity and develop new arrangements where appropriate to ensure simpler, faster and more predictable access to unsold capacities. The proposal is that the review of the arrangements for accessing unsold capacities should, at least, include an assessment of:

- The need for an economic test for capacity demands that can be met wholly from substitution[14].
- The current lead times for substitution and whether these could be reduced.
- The appropriateness of the user-commitment requirements.
- The degree of Ofgem's intervention in the process. Specifically, and as a minimum, the review should consider, whether Ofgem's approval of capacity substitution requests would be needed.
- Whether the current nodal arrangements for capacity substitution are fit for purpose. It may be that arrangements for access to unsold capacity should pool the unsold capacities of entry and/or exit points within 'zones'. This would allow the pooled unsold capacity to be sold as a different product and would provide greater flexibility in the capabilities of the network to better meet future consumer needs.

5.60 We propose to require NGGT to submit as part of its Business Plans a 'report on revised arrangements for accessing unsold capacities on entry and exit'. The proposal is that the report should include a description of the assumptions made and an estimate of the impact the proposed changes would have on different users of the network. It should also include an implementation plan to introduce the new arrangements so they are operating from April 2021 at the latest. We

[13] In addition to these 15 substitution requests approved on exit, there were eight more expressions of interest which did not materialise.
[14] NGGT has indicated that it intends to review the need for an economic test for capacity needs that can be met wholly from substitution as part of the 2018-2019 regular review of the Capacity Release Methodology Statements.

would welcome views if some or all of the new arrangements could be in place sooner.

5.61 Under our proposals, we would expect NGGT to submit draft versions of the report in its draft Business Plan submission in July 2019, and the final version in its final Business Plan submission in December 2019. We would expect NGGT to consult extensively with stakeholders in developing these reports, particularly with a view to understanding the future needs of different NTS users. As part of our assessment of NGGT's Business Plan submissions, we would assess the report on revised arrangements for accessing unsold capacities on entry and exit. Following our assessment, we may decide to make changes to the proposed arrangements in the report before making our final decision. Implementation of changes to the access arrangements may involve changes to some or all of the NGGT licence, capacity release and substitution methodologies and the Uniform Network Code.

GTQ28. Do you agree with our proposal to require NGGT to review the arrangements for accessing unsold capacity?

GTQ29. Do you agree with our proposed scope for the review? Are there other aspects of access that should be reviewed at the same time?

Meeting 1-in-20 demand

Purpose	Ensure NGGT manages the network to be able to meet a 1-in-20 peak demand severe weather event.
Proposed Approach	Retain licence obligation for NGGT to meet 1-in-20 peak day gas demand.

Background

5.62 NGGT is obliged under its licence to ensure that the transmission system is capable of meeting a level of gas demand which is likely to be exceeded (whether on one or more days) only in 1 year out of 20 years.

5.63 This requirement represents the primary security of supply standard that NGGT must meet as the operator of the NTS. We supported this requirement by including it as a formal price control output in the RIIO-1 price control.

Proposed approach

5.64 We propose to retain the output for NGGT to maintain sufficient capability on the NTS to meet 1-in-20 demand conditions.

Cyber Resilience

Background

5.65 As part of the RIIO-2 price control we want to ensure NGGT takes adequate steps to increase overall cyber security and cyber resilience of its network and information systems.

Proposed Approach

5.66 Our proposed common approach to the outputs and funding for cyber resilience across the GT, ET, GD and ESO sectors is set out in Chapter 6 of the Core Document.

Physical Security

Background

5.67 As owners of gas transmission assets in Great Britain, NGGT is responsible for a number of assets that are deemed by Government as Critical National Infrastructure (CNI).

5.68 Working with the responsible government department, ie the Department for Business, Energy and Industrial Strategy (BEIS), NGGT agrees and implements the Physical Security Upgrade Programme (PSUP), which involves measures required to enhance physical security at CNI sites.

5.69 At the time of setting the RIIO-GT1 price controls in 2013, there was some uncertainty about the list of sites that required security upgrades and the scope of works required at each site. As a result, we created an uncertainty mechanism, ie a re-opener, to provide an opportunity for NGGT to make applications for additional funding when there was greater certainty about the work required and the costs.

Proposed Approach

5.70 We think the Government requirements for PSUP are now clear and the majority of the required investment is expected to be completed by the end of RIIO-1. However, there may be some additional works required in RIIO-2 and therefore, we will consider allowing ex ante funding for investment.

5.71 Further details of our proposed approach to funding PSUP costs are set out in Chapter 6 of the Core Document.

6. RIIO-GT1 Cost Assessment

We provide context to and initial thinking on our proposed cost assessment approach for RIIO-GT2. The aim is to update stakeholders and invite their early views. We outline the approach we used in RIIO-GT1 and some of the methodology options currently under consideration for RIIO-GT2. We conclude by setting proposed expectations for RIIO-GT2 Business Plans and outlining next steps.

Chapter 6 questions

GTQ30. Do you agree with our intention to evolve the RIIO-GT1 approach for RIIO-GT2?

GTQ31. Do you have any comments on appropriate cost categories or approaches to cost assessment?

All questions are set out in Appendix 3.

Introduction

6.1 As in RIIO-GT1, one of the core elements of setting the RIIO-GT2 price control is to assess the efficient level of costs that would enable NGGT to carry out its activities and deliver an appropriate level of service. This chapter provides some context to, and initial thinking on, our proposed approach to assessing the efficient level of costs and invites views from stakeholders. Once developed, we will use this approach to assess RIIO-GT2 Business Plan in terms of cost efficiency and robustness of the supporting cost justifications.

6.2 We established a number of working groups with NGGT and other stakeholders. The Cost Assessment Working Group (CAWG) has been the main forum at which we have discussed our potential approach to cost assessment. We will continue to hold these groups in the coming months to facilitate ongoing dialogue, transparency and development of our approach. Full details of all RIIO-GT2 workings groups, including minutes and slide packs can be found on our website.[15]

6.3 In the remainder of this chapter we:

- briefly summarise our approach to assessing costs in RIIO-GT1
- discuss some of our thinking on the proposed cost assessment approach for RIIO-GT2
- outline some of our proposals regarding GT specific Business Plans
- set out our next steps.

RIIO-GT1 cost assessment

6.4 In RIIO-GT1, we used a toolkit of methodologies to assess NGGT's cost efficiency and to set baseline cost allowances.

6.5 NGGT submitted in its Business Plan, historical and forecast cost data along with supporting information and justification. We used this to form a view of the expected efficient costs of delivering outputs and long term value for money. We

[15] https://www.ofgem.gov.uk/publications-and-updates/riio-gt2-working-groups

set baselines for individual activities based on this. We used a range of techniques across cost categories and individual activities to assess the most efficient costs, including unit cost assessment, expert review and benchmarking where this was appropriate.

6.6 For each of the techniques we focussed on cost category reviews as well as reviews of specific projects named in the Business Plan. Unit cost assessment was undertaken where we had sufficient historical information to do so, and these historical costs were likely to be reflected in forecasts for RIIO-GT1. Expert review was undertaken across cost categories to supplement our overall approach and specifically, where we were unable to independently assess costs.

6.7 Some benchmarking was also applied, both cross-sectorally and internationally where there were suitable comparators. Where there was significant uncertainty in either the cost or volumes of work across the price control we dealt with these through a project specific approach using uncertainty mechanisms.

6.8 We based our final cost allowances on a combination of the outcomes of these methods for each applicable cost category and project.

Options for the methodology

Overview

6.9 We propose to evolve the RIIO-GT1 cost assessment approach for RIIO-GT2, rather than establish a whole new methodology. We would welcome views on whether you agree with this approach.

6.10 Informed by the working groups held with stakeholders we set out some of our current thinking on areas of the RIIO-GT1 approach that we may evolve for RIIO-GT2. These include:

- levels at which we choose to assess costs, ie cost categories, either by expenditure areas (ie totex, capex, opex) or activity (eg maintenance, business support costs etc.)
- appropriate cost drivers
- our assessment toolkit, for example unit cost assessment and expert reviews, and the time series of data we use
- the method by which we combine our analysis to determine a final cost allowance.

6.11 There are a number of other policies under development that are likely to impact our views of efficient costs once they have been decided upon, for example network capability review, whole system approaches, competition and compressor emissions compliance. We will keep developments in these areas under review during the course of our Business Plan assessment process.

Cost categories

6.12 In RIIO-GT1, costs were grouped at the level of load related capex, non-load related capex, direct and indirect operating expenditure.

6.13 In RIIO-GT2 we are considering moving to a simplified structure to align our cost categorisation with the Totex approach. We expect this approach to improve our ability to reconcile outputs and allowances, improve ongoing performance

monitoring and avoid cost re-categorisation. We propose the following three main cost categories:

- Load related expenditure
- Non load related expenditure
- Indirect and non-operational expenditure.

6.14 We propose to request additional granularity on some cost categories to improve our cost assessment capability, one example is project expenditure and we will progress this through our BPDT development.

6.15 For RIIO-GT2, we propose to ensure there is transparency and a clear separation between costs incurred by the GSO and GTO.

6.16 For RIIO-GT2, we are considering the most appropriate definitions of cost categories and unit costs and are doing so alongside our evaluation of appropriate cost drivers.

GTQ32. Do you agree with our proposed approach to cost categorisation? Please provide an explanation to your answer.

GTQ33. Do you support our view of the need for greater granularity and transparency in cost reporting to further develop our cost assessment capability?

Real Price Effects (RPEs)

6.17 In our RIIO-GT1 price control, we indexed expenditure allowances to RPI, which was our preferred index of general price inflation. In addition, we provided an up-front allowance to account for differences between our forecasts of RPI growth and growth in certain input price indices that reflect the external pressure on NGGT's costs. We refer to these differences as Real Price Effects (RPEs).

6.18 In our Framework Decision document, we confirmed that, were we to provide allowances for RPEs in RIIO-2, we would index the RPEs to actual changes in input price indices to protect consumers from forecasting risk. The core document sets out our proposed approach to the indexation of assessed costs for RPEs, where they are needed. Although it is for us to decide on the appropriate input price indices, we expect NGGT to provide evidence justifying the need for allowances for RPEs, as well as proposing and justifying input price indices as part of its Business Plans.

Cost assessment toolkit

6.19 Our cost assessment toolkit for RIIO-GT1 comprised both unit cost assessment and expert review supported by historical cost assessment as well as benchmarking where this technique was appropriate. Major investment projects were also subject to individual cost assessment. We intend to use a similar toolkit for RIIO-GT2 as outlined below.

GTQ34. We invite views on whether the proposed toolkit is appropriate or there are there other assessment techniques we should consider for our cost assessment toolkit in RIIO-GT2.

Unit cost assessment

6.20 Where it is appropriate for the cost category and we have sufficient information to do so we propose to undertake unit cost assessment to determine levels of efficient costs. We recognise that there are often multiple activities that need to be undertaken to deliver projects and it may be appropriate to consider multiple cost drivers.

6.21 In developing the unit cost models we would expect NGGT to provide information on appropriate cost drivers. For instance, if we were to use unit cost assessments to consider efficient costs of new compressor units, we would expect NGGT to provide evidence on the most appropriate cost driver to use. For the RIIO-1 price control, we used rated thermal power (in MW) as the cost driver, but it is possible that additional cost drivers may be needed to explain the variations observed in actual historical costs.

6.22 In deriving unit costs, we would seek to cross-check these models using historical data and expert view where this is available, but may use international comparators, or other justifiable means where it is not.

Historical trend analysis

6.23 We expect to use historically incurred costs as an important part of our evidential base for RIIO-GT2 for our cost assessment where they are a good indicator of future trends. Where we use volumes to drive our assessment we would ensure the items are comparable and we will, where possible, supplement this with robust data from outside the RIIO-GT1 regulatory returns[16].

Expert review

6.24 We would use expert review to supplement our overall approach, using multiple assessment techniques would ensure our assessment is robust. Using industry subject matter experts with access to additional knowledge and data with which to compare costs would improve our ability to assess efficient costs. In situations where activities are unique to the network and we have insufficient historical performance data to assess efficient costs or we require further external input to adequately assess costs we may also request bespoke engineering assessment by subject matter experts.

Project Assessment

6.25 Where specific investment projects are outlined in the Business Plan we may carry out individual cost assessment using techniques appropriate for project type and at a proportionate level of scrutiny. For such projects we may require additional levels of granularity in reporting to fully assess efficient costs. This may include, for example, labour, plant, materials, risk and project management costs.

6.26 Some projects may contain uncertainty around the needs case or timing but have reasonably firm cost information. Subject to the circumstances, we will consider the merits of their leaving cost assessment until the needs case is more certain during RIIO-GT2, or proceeding to conduct an assessment of the efficient costs and incorporate the result in a relevant uncertainty mechanism.

[16] For example, European Gas Transmission Benchmarking may provide further comparative information for consideration

Benchmarking

6.27 Where an activity is applicable across multiple companies, sectors or industries, we would seek to leverage this extended base of data to enable us to perform a more robust technical assessment of costs. For example, the greater base for comparison available for those business support costs that are common across both gas transmission and gas distribution enables a cost assessment of those services at a cross-sectoral level.

Other Techniques

6.28 When assessing the cost efficiency of activities with a relatively high degree of uncertainty, qualitative techniques may supplement technical measures to enable sensible determination of costs with a higher degree of confidence. This may involve increased industry stakeholder collaboration, bilateral discussions with policy-makers or any other means of revealing insightful actionable information.

6.29 Employing a wide range of techniques has the potential to strengthen our view on efficient costs; however, we are aware that:

- each technique has advantages and disadvantages that need to be taken into account
- testing alternative methodologies might lead to different, potentially contrasting results
- the application of different techniques requires decisions on corresponding underlying assumptions (eg choice of inputs and outputs, functional form of the production or cost function, etc.)
- we still face the constraint of limited data, with only one company.

6.30 We note the links between the specific nature of GT investment and the current policy proposals regarding totex sharing factors being reduced for instances where costs are less predictable, as discussed in the core document. We will work with NGGT to clarify how these factors interact and the implications for overall incentive rates during the RIIO-GT2 control period.

Combining our analysis

6.31 We propose to use a variety of tools to assess NGGT's cost efficiency in RIIO-GT2 as outlined above, but given the lack of comparators in the sector, we would expect both bottom-up analysis and expert judgement to be prominent in coming to our final decision. We will ensure the techniques adopted are suitable for the costs being assessed and available data, and in considering the outcome will seek to ensure the results are robust. We will only be in a position to decide how best to combine these analyses once they are complete, as in RIIO-1. In combining the analyses, we will be mindful of the need to set allowances at a level that will enable an efficient company to deliver its outputs.

6.32 We will continue to consult with stakeholders in working groups on our approach to cost assessment and the types of analyses to be used.

6.33 We also expect NGGT to provide its own assessment of costs as part of its submission to justify efficient costs and we will consider the evidence provided when undertaking our own cost assessment.

Proposals for GT Business Plans

Overview

6.34 We will be shortly publishing an updated Business Plan guidance.[17] In this section, we set out some of our Business Plan proposals specific to NGGT. This includes our proposed approach to the RIIO-GT2 Business Plan data templates (BPDTs), and associated instructions. Business Plan data could include forecasts and actuals. Please note that our proposals for a new Business Plan incentive is discussed in the core document.

6.35 Changes in the efficient levels of unit costs over time caused by improvements in project delivery, technological innovation, procurement efficiencies and input cost changes should also be taken into account in the Business Plan.

6.36 We propose that major investment decisions in RIIO-GT2 should have a needs case which demonstrates the company's decision making process. It should highlight the rationale for the proposed investment, functionally equivalent alternatives that have been considered and the determining factors that led to the final choice. It must be underpinned by a cost benefit analysis (CBA) to demonstrate the value to consumers of making the investment(s). We have outlined the key principles for CBA in the our RIIO-2 Business Plans Updated Guidance and we propose to develop this on a sector specific basis in discussion with NGGT through our cost assessment working groups.

Approach

6.37 We think both the RIIO-GT1 BPDTs and the Regulatory Instructions and Guidance (RIGs) form a basis on which to build on for RIIO-GT2 and there should be a clear link between the BPDTs and the Regulatory Return Packs (RRP) submitted for annual monitoring. We will also consider the level of standardisation between sectors, particularly GT and ET in terms of both general language and structure of information.

6.38 From this baseline, we propose to work with NGGT over the next few months to develop RIIO-GT2 BPDTs and associated guidance.

6.39 We intend to issue a draft RIIO-GT2 BPDT in March 2019. We expect NGGT to use this draft BPDT when submitting draft Business Plans on 1 July 2019. We will use this draft to test whether the BPDTs (and associated Business Plans) cover all the information we require for our cost assessment and to enable us to further develop our approach to assessing efficient costs.

6.40 We will develop the RIIO-GT2 BPDT following the sector specific methodology decision in May 2019 and issue a final BPDT in autumn 2019.

BPDT Content

6.41 In large part, we would expect to ask for similar data in the RIIO-GT2 BPDTs as we collect annually in RIIO-GT1 RRPs and as we collected in RIIO-GT1 BPDTs. Some areas that we currently think will change or develop from RIIO-GT1 are set out below:

[17] https://www.ofgem.gov.uk/system/files/docs/2018/09/riio-2_business_plans_-_initial_guidance.pdf

- We propose to ensure greater transparency and separation between GTO and GSO "internal" costs. Any shared costs of the GTO and GSO should be allocated between the two using robust cost allocation methodologies.
- Where we think the level of uncertainty has changed from RIIO-GT1 to RIIO-GT2 meaning we may be able to amend our cost assessment approach: for example, Physical Security or compressor emissions compliance.
- To inform policy, for example to enable us to assess costs associated with proposed PCDs, to determine output targets and to implement indexation for RPEs if this is what we decide.
- To adapt to the Network Asset Risk Metric (NARM) reporting requirements. This will be driven by the development of our approach to assessing the NARM in GT2 at both cross-sector and sector-specific levels.
- To inform how we develop our cost assessment methodology, for example to link outputs to costs and ensure transparency between SO / TO costs.
- Where we require a greater level of granularity, for example for specific investment projects.
- To reflect a multi period approach to provide greater transparency on investment cycles beyond RIIO-2 in recognition of the fact that price controls are artificial boundaries, for example with emissions compliance where NGGT will need to consider its investment plan out to 2030.

Next steps

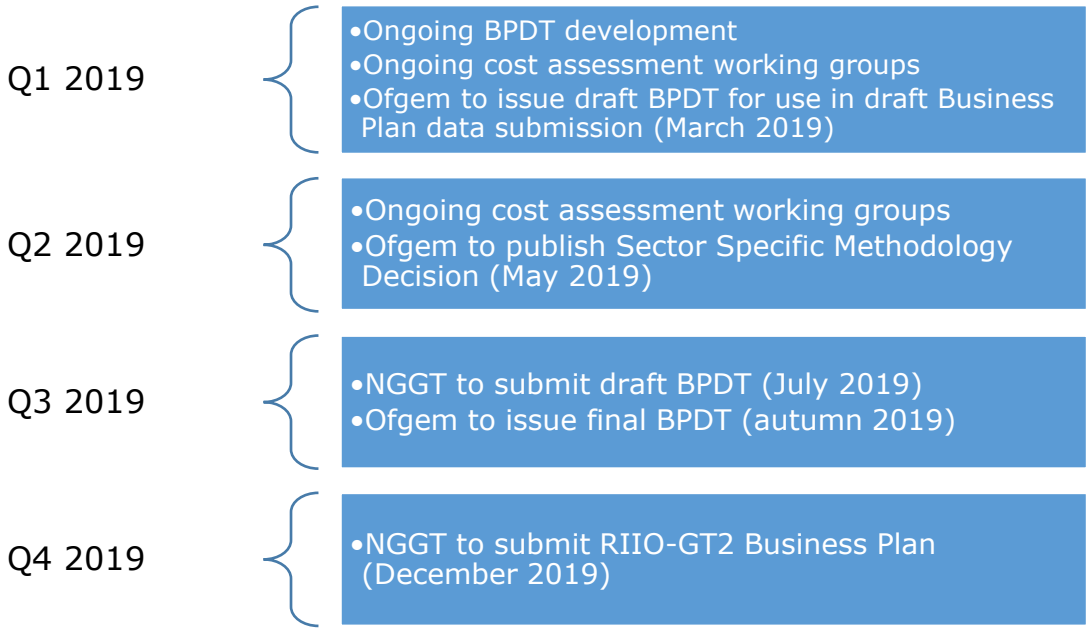
6.42 We intend to continue the costs assessment working groups in 2019. Details of these meetings and how to engage are available online.[18] We will use these to develop GT specific Business Plan data templates and develop our approach and methodology to cost assessment. We invite stakeholders to propose alternative approaches to the assessment of efficient costs to us in this time.

6.43 We will not decide on our final approach to RIIO-GT2 assessment of efficient costs until we have received final Business Plan submissions in December 2019, as Business Plan evidence may warrant a different approach.

6.44 The figure below summarises these next steps.

[18] https://www.ofgem.gov.uk/publications-and-updates/riio-gt2-working-groups/

Figure 18: Summarised next steps



7. Uncertainty Mechanisms

For RIIO-GD2, we will use uncertainty mechanisms within the price control framework. We have set out our proposals for the specific areas where we intend to use them. NGGT may also suggest additional uncertainty mechanisms as part of its Business Plans. There are some RIIO-GT1 uncertainty mechanisms that we propose to remove for RIIO-GT2.

Chapter 7 questions

GTQ35. What are your views on the proposed uncertainty mechanisms and their design?

GTQ36. Are there any additional mechanisms that we should be considering across the sector? If so, how should these be designed

GTQ37. What are your views on the RIIO-GT1 uncertainty mechanisms we propose to remove?

Introduction

7.1 Forecasting all costs and outputs with confidence for the duration of a price control is challenging. Uncertainty mechanisms allow changes to a network company's allowed revenues to be made in light of what happens during the price control period. We use the term uncertainty mechanisms to cover a range of regulatory approaches.[19] The use of uncertainty mechanisms, and their design, is important to ensure we don't damage incentives on companies to be efficient and don't expose companies to risks outside of their control.[20]

7.2 At the time of setting RIIO-GT1, some of the uncertainties included the required expenditure on incremental capacity and flexibility. During the course of RIIO-GT1, some uncertainty has fallen away and we propose to remove several uncertainty mechanisms as a result. But, additional uncertainties for the RIIO-GT2 period have arisen and uncertainty mechanisms will help ensure the price control can adapt to these.

7.3 Chapter 7 of the Core Document sets out our overall proposed approach to managing uncertainty under RIIO-2. It also includes:

- The principles guiding the use of uncertainty mechanisms and provides details on what stakeholders need to provide in order to suggest additional mechanisms.
- Information on the uncertainty mechanisms that we propose to apply in the same way across all of the RIIO-2 price controls is described as 'Cross-sector' in the table below.

7.4 The table below sets out all of the uncertainty mechanisms currently proposed for RIIO-GT2. Many are retained from RIIO-GT1, since we consider that the particular uncertainty still exists and the mechanisms are still appropriate.

[19] Mechanisms include: indexation, volume drivers, specific re-openers, and pass-through costs.
[20] In chapter 6 we asked for stakeholders' views, on our early proposals for how we could assess NGGT's cost efficiency and their upfront (ex ante) baseline allowances. It also outlines our proposals for when, and how, we could assess costs after the price control has been set (ex post). Some types of uncertainty mechanism will involve an ex post assessment by us.

7.5 NGGT will have an opportunity, as part of its Business Plan, to propose additional uncertainty mechanisms that they would find valuable in managing risk. We expect companies to justify why any additional mechanisms are required.

7.6 Information on the uncertainty mechanisms that we propose to apply in the same way across RIIO-GT2, ET2 and GD2 controls are described as 'Cross-sector' Table 8 below. Further information on our proposals for these 'Cross-sector' uncertainty mechanism can be found in Chapter 7 of the Core Document.

Table 9: Summary of the uncertainty mechanisms proposed for RIIO-GT2

Name	Type of mechanism	Comparison to RIIO-1
Cross-sector		
Ofgem licence fee	Pass-through	No change proposed
Business rates	Pass-through	No change proposed
Inflation indexation of RAV and allowed return	Indexation	Revised for RIIO-GT2
Cost of debt indexation	Indexation	Options for change proposed
Tax (trigger and clawback)	Re-opener	Options for change proposed
Pensions (pension scheme established deficits)	Re-opener[21]	Revised for RIIO-GT2
Physical security	Baseline allowance and/or re-opener	Revised for RIIO-GT2
Cost of equity indexation	Indexation	New for RIIO-GT2
Tax	Re-opener	New for RIIO-GT2
Cashflow floor	Re-opener	New for RIIO-GD 2
Real Price Effects	Indexation	New for RIIO-GT2
Cyber resilience	Baseline allowance and/or re-opener	New for RIIO-GT2
Whole systems (options under development)	Re-opener	New for RIIO-GT2
GT2 specific		
Incremental capacity	Re-opener	Revised for RIIO-2
Compressor Emissions Costs	Re-opener	Revision from RIIO-1
Pipeline diversions	Re-opener	Revision from RIIO-1
Network Capability	Re-opener	New for RIIO-GT2
Policing cost associated with Counter-Terrorism Act 2008	Pass-through	Revision from RIIO-1
Independent Systems	Pass-through	Revisions from RIIO-1

Uncertainty mechanisms to align allowances with delivery costs

Funding for incremental entry and exit capacity

Background

7.7 NGGT's licence sets out the amount of entry and exit capacity that it is required to offer to NTS users, known as baseline obligated entry and exit capacities. The licence also requires NGGT to respond to signals received from NTS users for new entry or exit capacity that is in excess of the obligated levels of capacity as set out in NGGT's licence.

7.8 If NGGT releases additional entry or exit capacity in response to these signals, it may be necessary to carry out work on the NTS to accommodate this additional

[21] Triennial review

capacity. There is considerable uncertainty about this work and the associated costs as these are only required if new capacity is released, and the amount of work needed depends on site-specific factors such as the location of the new capacity, the amount of capacity needed and the existing capability of the network. This means that we do not have sufficient certainty to provide allowances in advance to cover NGGT's costs. The current RIIO-1 price control includes a revenue driver mechanism that determines the amount of additional allowances that NGGT would receive if new capacity is released.

7.9 This revenue driver is based on the Generic Revenue Driver Methodology developed by NGGT, and approved by us. The methodology draws on a RIIO unit cost library developed in 2012 as part of the RIIO-1 price control.

7.10 This revenue driver has not been called upon during the current RIIO-1 price control as NGGT has accommodated all requests for new capacity without the need for additional investment on the NTS.

Proposed approach

7.11 We think that the current process used by NGGT for the release of new entry and exit capacity remains broadly appropriate, subject to the access issues we have referred to in Chapter 5.

7.12 We believe that there is continuing uncertainty about the need for any expenditure during the RIIO-2 price control period in order to accommodate the release of new capacity. There is still the potential for changes in the gas transmission network (eg associated with Shale Gas, Liquefied Natural Gas (LNG), intermittency of electricity generation and continued fall in overall demand for gas). Such developments may require the release of new entry or exit capacity, and we intend to retain a mechanism by which NGGT can be funded for reasonable and efficient costs associated with the release of new capacity.

7.13 For the RIIO-2 price control, we considered whether to retain the current revenue driver approach to funding these costs. If we were to do so, we would need to consider whether the RIIO-1 unit cost library remains fit for purpose, and that would require a fresh assessment of the unit costs for various asset categories.

7.14 The revenue driver mechanism allows the allowance adjustments to be determined automatically with little or no need for Ofgem to assess costs on a case-by-case basis. This provides NGGT with certainty about allowances, and minimises the scope for delays to the release of new capacity that may be caused by the need for a case-specific assessment of costs. However, this has to be weighed against the need to review the unit cost library as part of the RIIO-2 price control. Moreover, the unit cost library is generic in nature, and cannot capture any variations in the cost of carrying similar work across different projects. This exposes NGGT and customers to the risk of under- or over-funding.

7.15 In light of the fact that the revenue driver mechanism has not been used since 2007, we are not convinced of the benefits of an updated unit cost library over a case-specific approach to determining allowances.

7.16 Our current view is that a more proportionate approach for the RIIO-2 price control would be to determine any changes to NGGT's allowances in the event of release of new entry or exit capacity on a case-by-case basis, through a specific price control re-opener, the Incremental Capacity Re-opener. The re-opener would be triggered upon our approval NGGT's proposals for the release of new

incremental capacity. We would expect NGGT to submit an application for an appropriate adjustment to its allowances, supported by evidence to demonstrate that its proposed costs are reasonable and efficient. We would determine an appropriate adjustment to NGGT's allowances following our assessment of NGGT's submission. We welcome stakeholders' views on whether a materiality threshold should be applied to this re-opener, and if so what this threshold should be.

7.17 We recognise that a case-by-case assessment of allowances introduces an additional layer of regulatory scrutiny in the capacity release process, which could introduce the scope for delays. However, our initial view is that this is a reasonable approach given that the revenue driver mechanism has not been called upon since 2008.

7.18 We welcome the views of stakeholders on our proposed case-by-case approach to determining NGGT's allowances for incremental capacity. In particular, we are keen to understand whether this approach could introduce delays in the process for the release of new capacity, and potential mitigation measures.

7.19 If we were to move to a case-by-case approach to assessing funding for incremental capacity, we may not need to maintain the current obligation on NGGT to maintain the Generic Revenue Driver Methodology. We are considering whether this requirement should be removed, and we seek stakeholders' views on this. For the avoidance of doubt, we are not proposing to change the way in which the NPV test would be applied as part of the Planning and Advanced Reservation of Capacity Agreements (PARCA)[22] process.

Compressor Emissions Costs (IED and MCP)

Background

7.20 In RIIO-GT1 price control for NGGT, we included a baseline allowance for work on compressor sites to comply with the Integrated Pollution Prevention and Control Directive (IPPCD) and the Industrial Emission Directive (IED). This was based on information provided by NGGT in its Business Plan at the time. We recognised that there was uncertainty about these costs, and created an output for NGGT to develop an integrated plan for compliance with emissions legislation, which should consider all feasible options and select the most efficient option for each site. We said that if, following the development of the integrated plan, NGGT's planned expenditure is different to the baseline allowance, we would adjust this allowance up or down as part of a re-opener mechanism.

Proposed Approach

7.21 For the RIIO-2 price control, we are proposing to retain a re-opener mechanism for costs relating to compliance with the IED and MCP Directives, as transposed into UK law.

7.22 As outlined in the 'Deliver a Sustainable Network' section, we have proposed that NGGT produce a Compressor Emissions Compliance Strategy (CECS) document setting out its plans to comply with relevant emissions legislation, covering both RIIO-2 and the subsequent price control. We have proposed that NGGT sets out specific solutions for each compressor site in the CECS. We would then set Price Control Deliverables based on the solutions proposed by NGGT in the CECS. We propose to include baseline allowances for the PCDs based on our assessment of

[22] https://www.ofgem.gov.uk/sites/default/files/docs/2014/08/parca_licence_change_initial_consultation_letter.pdf

efficient costs associated with delivery of those solutions. We would hold NGGT to account for the delivery of these PCDs.

7.23 However, we recognise that there is likely to be some uncertainty about the precise solution at each site. We would expect NGGT to keep its plans under review, and it may be that a solution that we accepted as a PCD at the start of RIIO-2 may not be the most efficient way of complying with emissions legislation.

7.24 We propose to include a re-opener mechanism by which NGGT or Ofgem can put forward changes to PCDs and associated allowances. A single window for this mechanism which would be in year 2 of the price control period, with any changes to take effect from year 3. We propose to put in place a materiality threshold of 1% of annual revenues, in line with the threshold for the IED re-opener in the current RIIO-1 price control.

7.25 We also propose allow a further opportunity by which NGGT or Ofgem can propose changes to PCDs and allowances as part of the close out process for the RIIO-2 price control.

7.26 Further details about our approach to compressor emissions and our proposed timelines are set out in the 'Deliver a Sustainable Network' section.

Pipeline diversion costs

Background

7.27 Our Final Proposals for the RIIO-1 price control included a re-opener provision for NGGT to recover those costs incurred, or expected to be incurred, in relation to diverting existing pipelines. Costs recoverable through this mechanism were:

- those arising as a result of existing obligations/liabilities taken on by the Gas Council/ British Gas for which the NGGT is now responsible; and
- where NGGT can demonstrate it has done everything in its powers to recover costs from the relevant party requesting the pipeline diversion.

Proposed Approach

7.28 For RIIO-2 we propose to maintain a re-opener provision for pipeline diversion costs to the extent that these cannot be reasonably recovered from parties requesting the diversion.

Network capability

Background

7.29 As set out in Chapter 5 on Network Capability, we said that we propose an uncertainty mechanism that would allow either NGGT or Ofgem to propose changes to the network capability target to respond to material changes in the needs of current or future network users. Any subsequent changes to the target may impact allowances which would need to be adjusted up or down.

Proposed approach

7.30 For RIIO-2 we propose to put in place a re-opener mechanism that would allow either NGGT or Ofgem to propose changes to the network capability target and allowances in year 2 of the RIIO-2 price control.

7.31 Any changes to baseline allowances would be determined by Ofgem based upon analysis of the proposed changes to the network capability targets, taking account of allowances provided elsewhere in the price control.

Uncertainty mechanisms for areas fully outside of network companies' control

7.32 Where network companies have costs that are both difficult to predict and outside of their control we use pass-through mechanisms to allow companies to recover those costs. For these specific items, network companies' actual costs are recovered fully from customers.

Policing at Gas Facilities

Background

7.33 The Counter-Terrorism Act 2008, sections 85 to 90, governs the arrangements for policing at gas facilities. The security requirements, and associated costs, are set by Government and are outside of NGGT's control.

7.34 The arrangements are required to reduce the risk of potential loss and/or disruption to the supply of gas from external physical threats. In the RIIO-1 price control, we allowed NGGT to recover costs associated with policing through a pass-through mechanism.

Proposed Approach

7.35 Our proposal for RIIO-2 is to retain the current pass-through mechanism. These costs are outside of NGGT's control and are difficult to predict in advance.

Conveyance of gas for Independent Systems

Background

7.36 NGGT’s licence (Special Condition 11F) allows NGGT to recover the costs associated with the supply of gas to independent undertakings that are not connected to the national gas network and supplied either by liquefied natural gas (LNG) or liquefied petroleum gas (LPG).

7.37 For RIIO-1 we provided NGGT a pass-through mechanism for the recovery of these costs.

Proposed Approach

7.38 Our proposal for RIIO-2 is to maintain the current mechanism. These costs relate to the implementation of government policy and are outside NGGT’s control.

RIIO-GT1 Uncertainty Mechanisms Proposed for Removal

7.39 This section sets out the RIIO-GD1 uncertainty mechanisms that we are proposing to remove for RIIO-GT2 and how we propose to treat the relevant cost items in the RIIO-GT2 price control.

Table 10: Uncertainty mechanisms we propose to remove for RIIO-GT2

Name	Type of mechanism	Proposed treatment of costs for GT2	RIIO-1 licence condition
One-off Asset Health Costs (Feeder 9)	Re-opener	NA	Special Condition 5E
Network flexibility	Re-opener	NA	Special Condition 5E
Quarry and Loss Development	Re-opener	Baseline allowances	Special Condition 5E
Agency (Xoserve) costs	Re-opener	Baseline allowances or pass-through	Special Condition 5E
Innovation Rollout Mechanism	Re-opener	NA	Special Condition 3D

One-off Asset Health Costs (Feeder 9)

7.40 The One-off Asset Health Costs re-opener mechanism was designed as a means to recover costs incurred, or expected to be incurred, by NGGT in relation to any single low probability high impact event (or a series of low probability high impact events with a common trigger) not explicitly included within the allowances provided for under the Special Conditions.

7.41 Under this mechanism, during RIIO-1, NGGT applied for additional allowances to cover the cost of replacing a specific pipeline that would pass-through a tunnel under the Humber estuary.

Proposed Approach

7.42 We propose removing this Uncertainty Mechanism for RIIO-GT2 as we are not aware of any similar circumstances requiring such a mechanism - that is a high value project with uncertain solution/cost and subject to planning uncertainty.

Network flexibility

7.43 For RIIO-1 we put in place an annual re-opener to allow NGGT to propose changes to allowed expenditure required to meet changing peak day requirements (1 in 20 obligations), supported by stakeholder engagement. Proposals had to pass a materiality threshold of two per cent of average annual forecast revenue after the application of the Totex efficiency incentive rate in order to for the process to be triggered.

Proposed Approach

7.44 For RIIO-2 we propose to remove this provision. This provision has to date not been triggered. 1 in 20 annual peak demand has also declined over the past decade and the trend is unlikely to change. Therefore, we do not see the need to retain a similar mechanism for RIIO-2.

Quarry and Loss Development

7.45 In RIIO-1 we included a provision for additional allowances to be applied for relating to costs incurred, or expected to be incurred, by NGGT in relation to settling any claims which have been demonstrably challenged by NGGT as far as is reasonable regarding both the basis of the claim and the quantum of the compensation sought. The following claims under the terms of the Deed of Easement or Deed of Servitude were included:

- loss of crop and drainage
- loss of land development (including in relation to housing and quarrying)

- sterilised minerals
- landfill and tipping
- power generation

Proposed Approach

7.46 We propose to remove this provision for RIIO-2 as we believe it is simpler to include expected costs associated with such claims within NGGT's baseline allowances. Our current view is that there is a greater level of predictability about these costs, given information about settled claims during the RIIO-1 price control.

Agency (Xoserve) costs

7.47 Xoserve is a data services company which provides a range of essential services to support the GB gas industry. At the start of RIIO-GD1 and T1, we provided upfront funding to cover Xoserve's costs through the Gas Transporters' baseline allowances. However, we also committed to reviewing Xoserve's funding, governance and ownership (FGO) arrangements to ensure they were fit for purpose. We included an uncertainty mechanism in RIIO-GD1 and T1 to adjust the GTs' allowances if Xoserve's costs were to change materially following the conclusion of our review.

7.48 In October 2013, we decided that a full co-operative governance model should be established to allow all of Xoserve's users to participate in its decision making process, and to directly fund the delivery of services. Xoserve's new FGO arrangements were implemented from 1 April 2017. Under the new arrangements, Xoserve's cost are funded by GTs, shippers and Independent Gas Transporters (IGTs).

7.49 The implementation phase of FGO is complete and we do not expect further changes to the Xoserve funding model during RIIO-2. Therefore, we propose to remove this uncertainty mechanism for RIIO-GD2 and GT2.

Proposed treatment of Xoserve costs in RIIO-GT2

7.50 In our decision on the new Xoserve funding arrangements in September 2016, we decided to provide an allowance for the Gas Transporters' share of Xoserve costs as an allowance for the remainder of RIIO-GD1 and T1. We did not opt for a pass-through arrangement for these costs because delays to the FGO and Project Nexus programmes reduced our confidence in the industry to create an effective co-operative governance model for Xoserve's costs. We committed to reconsidering our approach for RIIO-2.

7.51 FGO was successfully implemented on 1 April 2017 and we are pleased with the positive impacts that the new governance arrangements have had on Xoserve and the wider industry. In light of this, we are now considering the most appropriate model for funding the Gas Transporters' share of Xoserve's costs. We are proposing two options for our treatment of Xoserve costs in RIIO-GD2 and GT2:

- **Option 1:** This would involve retaining the current approach, which is to provide up-front allowances for Gas Transporters to cover their share of Xoserve's costs. Under this approach, Gas Transporters would have an incentive to control Xoserve's costs through the Totex sharing mechanism. This approach would also allow Ofgem to have a degree of scrutiny over Xoserve's costs to ensure that it offers value for money for consumers. While

the Gas Transporters do not have full control of Xoserve's costs under the new governance arrangements,[23] we consider that they have significant influence through their positions on Xoserve's board. However, we recognise that the Gas Transporters' incentive to control costs may have an impact on Xoserve's ability to propose and implement new services that could have the potential to deliver significant benefits for the energy market.

- **Option 2:** Another option would be to treat the Gas Transporters' share of Xoserve's costs as a pass-through item in RIIO-GD2 and T2. This approach could give the Xoserve greater flexibility to propose and implement new services. However, the pass-through arrangements could mean that Gas Transporters have weaker incentives to exert control over Xoserve's costs. We acknowledge that shippers and IGTs may apply some pressure to control costs through their own positions on Xoserve's board. However, such cost pressures are likely to be less than they would be under option 1.

7.52 We understand that Xoserve may consider taking on some additional services beyond its role as the Central Data Service Provider. If this happens, we are interested in stakeholder views on the appropriate regulatory treatment for the costs, revenues and risks associated with these ancillary services. For example, should these costs and risks be part of the Gas Transporters' allowances which are subject to the Totex Incentive Mechanism, treated as a pass-through, or be outside of the price control.

GTQ38. What do you think is the most appropriate approach for funding the Gas Transporters' expenditure for Xoserve in RIIO-2? In particular, which approach do you think is in the best interest of consumers?

GTQ39. If Xoserve takes on any services beyond its core Central Data Service Provider role, how should we treat the costs and risks associated with these additional services through the price control?

Innovation Rollout Mechanism

7.53 We propose to remove the Innovation Rollout Mechanism, which was included as part of the RIIO-GT1 price control.

7.54 Our reasoning for its removal is set out in Chapter 8 of the Core Document.

[23] Under the new governance arrangements, the Xoserve board has 4 shipper nominated Directors and four Gas Transporter nominated Directors, including one IGT nominated Director.

Appendices

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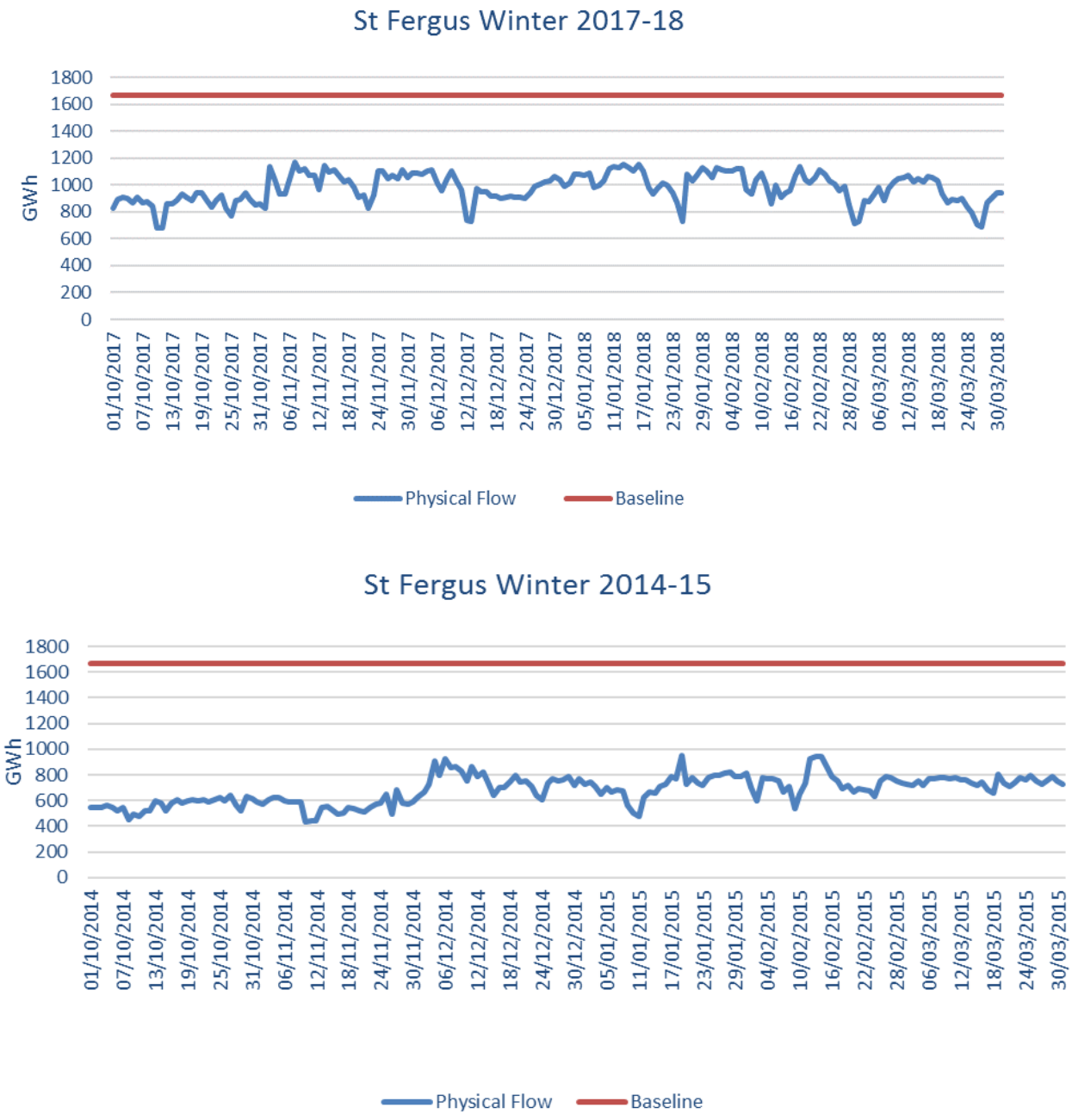
Appendix 1 - Daily physical flow and baseline values for a selection of entry points

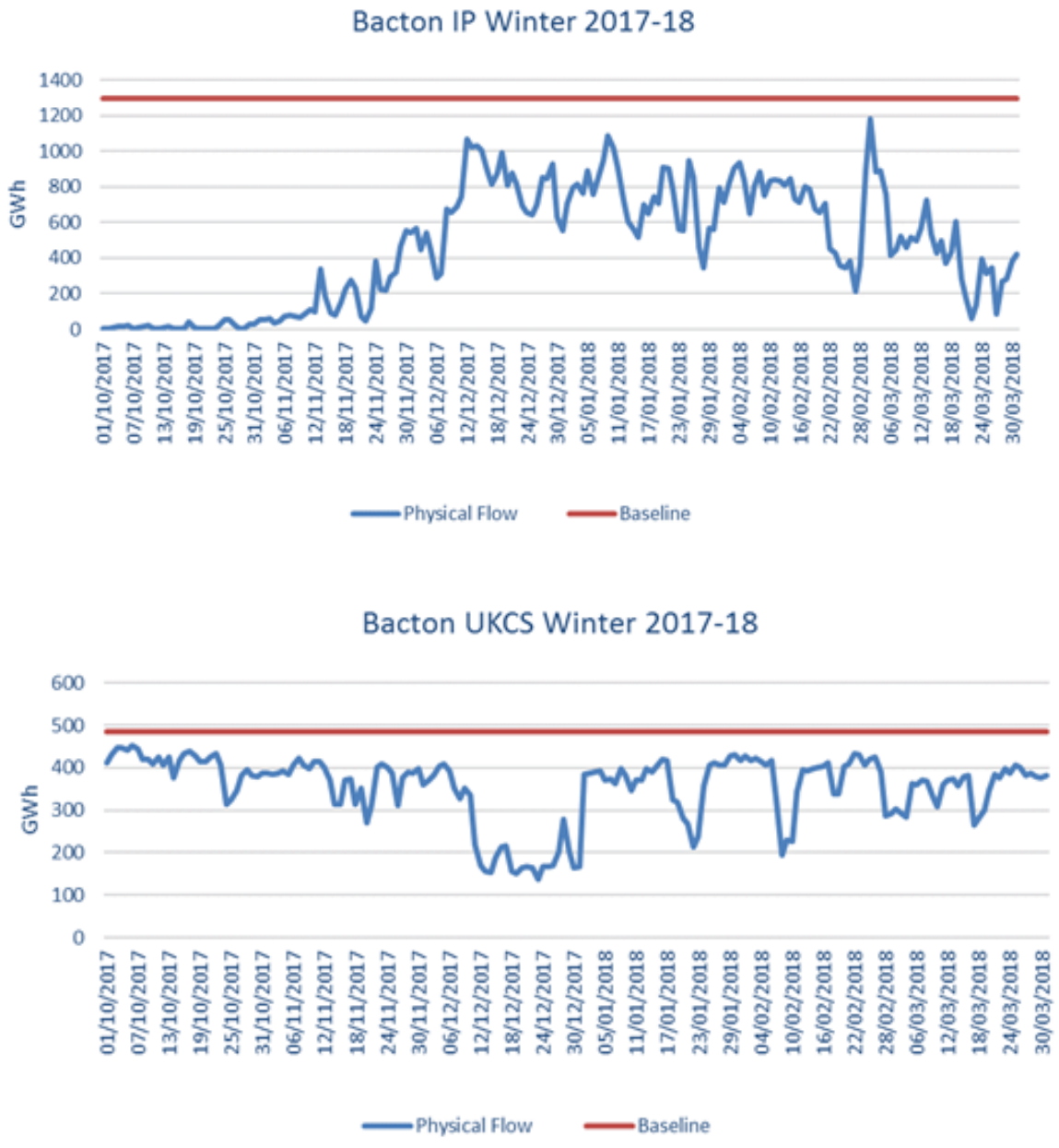
Daily data illustrates that although for a majority of entry points, baseline capacity values significantly exceed daily entry physical flow, on 1st March 2018, physical flow peaked at some entry point (eg Milford Haven, Bacton IP).

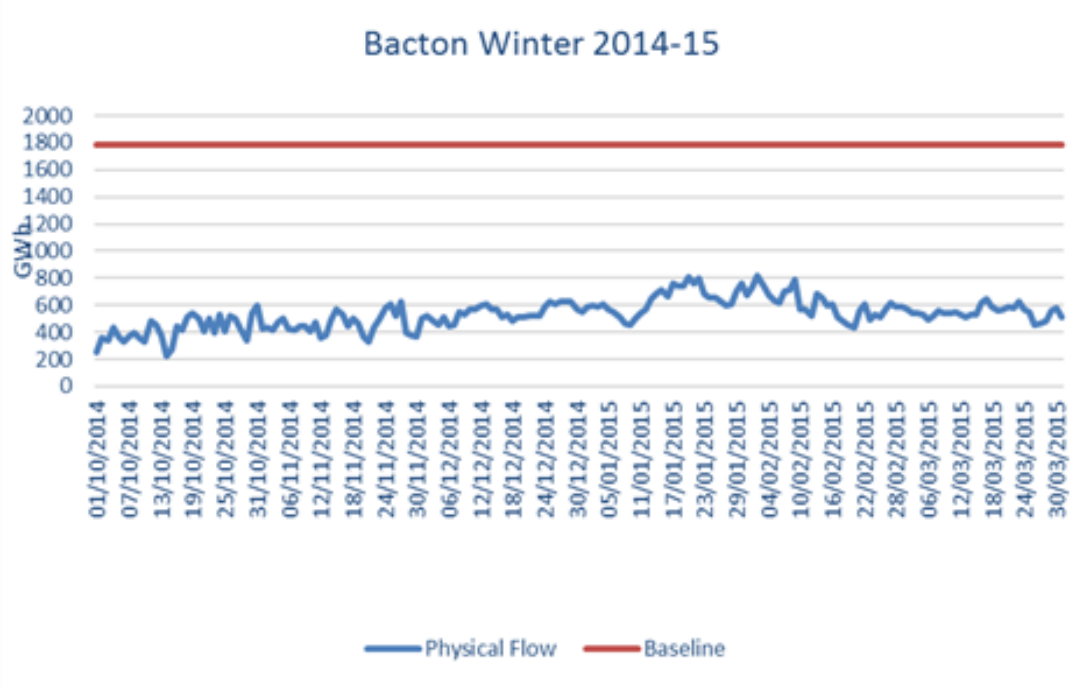
Figure 19: Daily physical flow and baseline values at St Fergus, Winter months 2014-2015 and 2017-2018



Source: NGGT, on the basis of publicly available sources

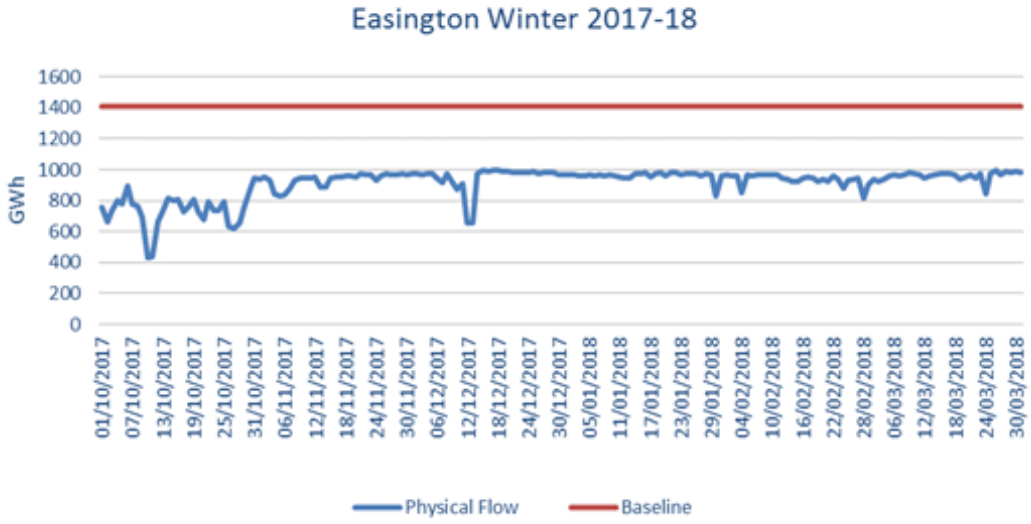
Figure 20: Daily physical flow and baseline values at Bacton IP and Bacton UKCS, Winter months 2017-2018, and at Bacton, Winter months 2014-2015



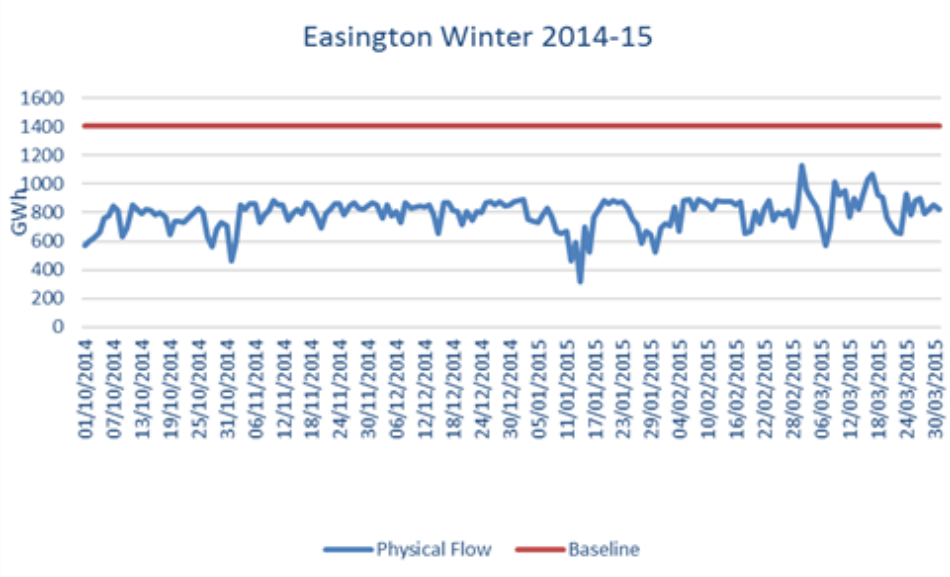


Source: NGGT, on the basis of publicly available sources

Figure 21: Daily physical flow and baseline values at Easington, Winter months 2014-2015 and 2017-2018

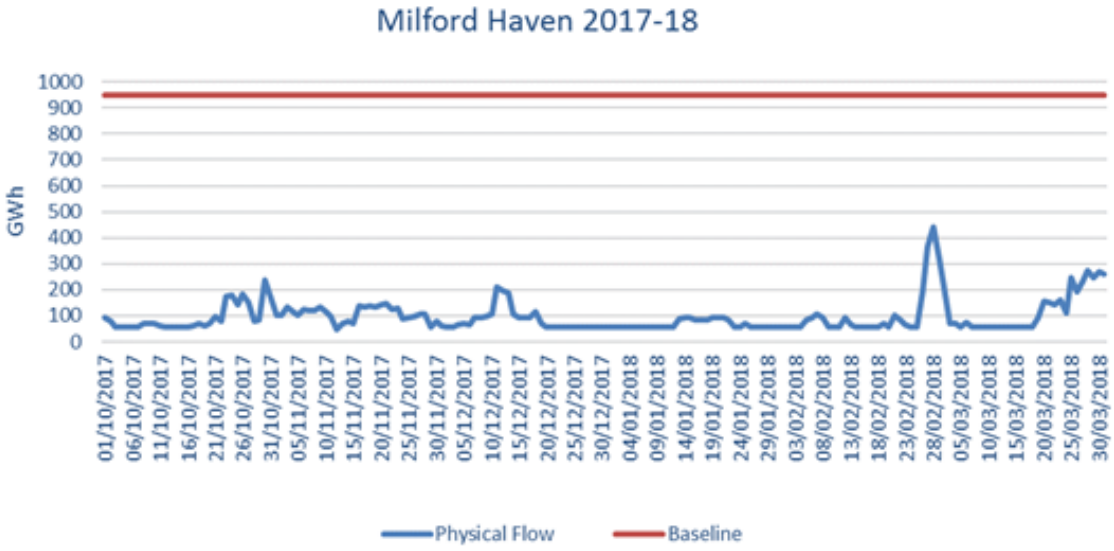


Source: NGGT, on the basis of publicly available sources

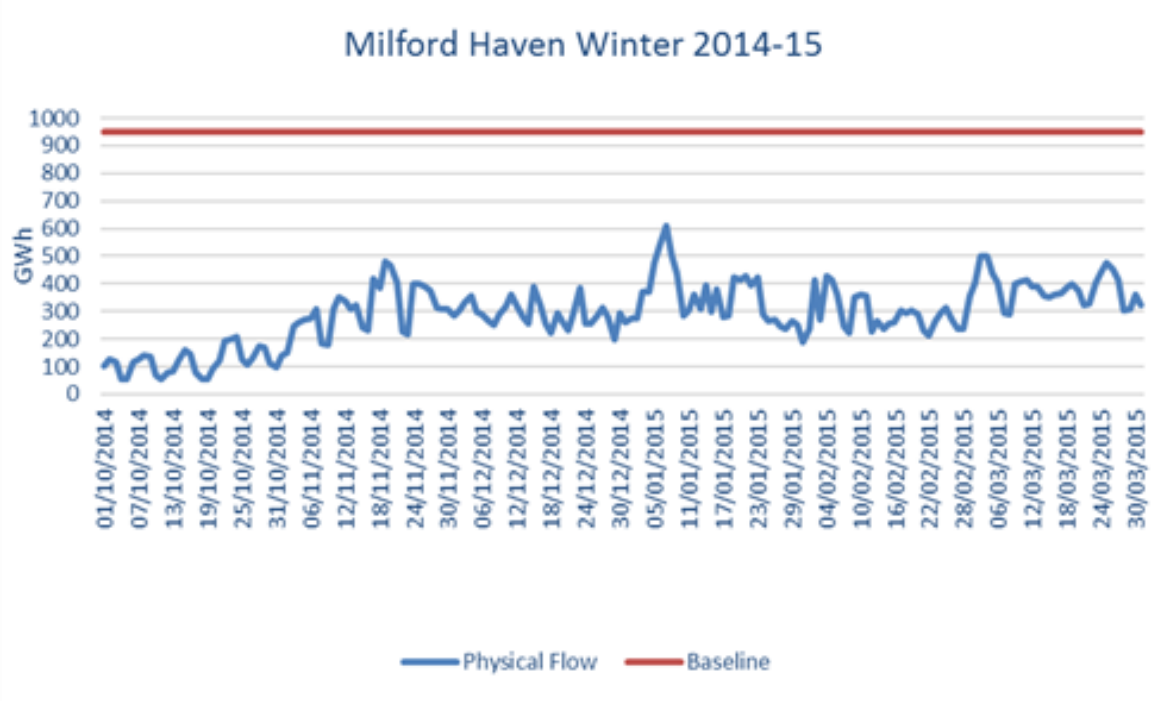


Source: NGGT, on the basis of publicly available sources

Figure 22: Daily physical flow and baseline values at Milford Haven, Winter months 2014-2015 and 2017-2018



Source: NGGT, on the basis of publicly available sources

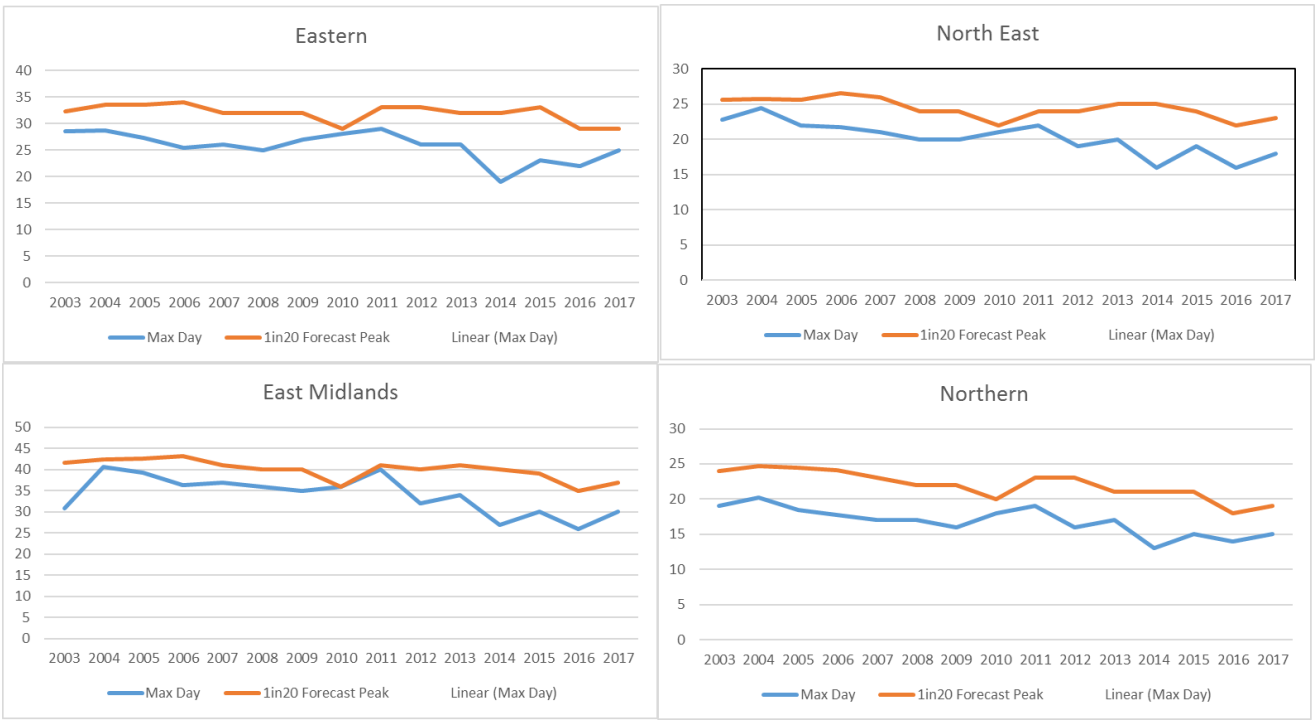


Source: NGGT, on the basis of publicly available sources

Appendix 2 - Maximum day exit flows in relation to peak flows on a zonal basis, 2003-2017

Maximum day exit flows in 2009, 2010 and 2011 almost reached peak flows forecasted for these years in all four exit zones shown.

Figure 23: Examples of maximum day exit flows compared to forecasted peak flows on a zonal basis, 2003-2017



Source: NGGT, on the basis of publicly available sources

Appendix 3 - Sector specific consultation questions

Chapter 2 - Context

GTQ1. Do you have any feedback on our proposals for simplifying the RIIO-2 gas transmission price control package, or suggestions for further simplification?

GTQ2. Do you have any views on the extent to which the potential outputs discussed in this document:

a) achieve the appropriate balance and focus on the areas that are of value to consumers and should be included as part of a RIIO-GT2 outputs package;

b) align with our overarching outputs framework as described in the Core Document;

c) we also welcome views on whether there are any alternative outputs and/ or mechanisms not identified here which we should be considering.

Chapter 3 questions – Meet the needs of consumers and network users

General output questions

GTQ3. What are your views on the overall outputs package considered for this output category?

GTQ4. For each potential output considered (where relevant):

a) Is it of benefit to consumers, and why?

b) How, and at what level should we set targets? (eg should these be relative/absolute).

c) What are your views on the design of the incentive? (eg reward/penalty/size of allowance).

GTQ5. What other outputs should we be considering, if any?

GTQ6. What are your views on the RIIO-1 outputs that we propose to remove?

In addition to the above questions, where relevant, please the see the supplementary output specific questions below.

Supplementary output specific questions

Stakeholder Engagement Incentive

GTQ7. We welcome views from stakeholders on the above options.

GTQ8. Do you think it would be possible to establish clear and appropriate KPIs and deliverables in this area?

Satisfaction Surveys

GTQ9. We welcome views from stakeholders on the above options.

Quality of demand forecasts

GTQ10. Does NGGT's forecasts of demand provide a service that is valued by consumers and network users? Please explain why.

GTQ11. Should gas consumers pay for NGGT to produce accurate demand forecasts? What is the value for consumers from increased accuracy?

Chapter 4 questions – Deliver an environmentally sustainable network

General output questions

GTQ12. What are your views on the overall outputs package considered for this output category?

a. For each potential output considered (where relevant):
b. Is it of benefit to consumers, and why?
c. How, and at what level should we set targets? (eg should these be relative/absolute).
d. What are your views on the design of the incentive? (eg reward/penalty/size of allowance).

GTQ13. Where we set out options, what are your views on them and please explain whether there are further options we should consider.

GTQ14. What other outputs should we be considering, if any?

GTQ15. What are your views on the RIIO-1 outputs that we propose to remove?

GTQ16. We welcome views on whether further regulatory mechanisms are needed to drive NGGT to be more proactive in reducing its impact on the environment and contributing to the transition to the low carbon energy system.

In addition to the above questions, where relevant, please the see the supplementary output specific questions below.

Supplementary output specific questions

NTS Shrinkage

GTQ17. Do you think that the 'compressor fuel use' element of the shrinkage incentive should be included within NGGT's baseline Totex allowance? To what extent do you think elements of shrinkage are within the control of National Grid Gas

Low carbon energy systems and decarbonisation of heat

GTQ18. Do you have any views on how NGGT's can make a contribution to the transition to a low carbon energy system and support the decarbonisation of heat?

Opportunity to propose bespoke outputs

GTQ19. Do you think we should consider proposals from NGGT for additional outputs and incentives to support our environmental objectives?

Chapter 5 questions – Maintain a safe and resilient network

General output questions

GTQ20. What are your views on the overall outputs package considered for this output category?

GTQ21. For each potential output considered (where relevant):

a. Is it of benefit to consumers, and why?
b. How, and at what level should we set targets? (eg should these be relative/absolute).

c. What are your views on the design of the incentive? (eg reward/penalty/size of allowance).

d. Where we set out options, what are your views on them and please explain whether there are further options we should consider.

GTQ22. What other outputs should we be considering, if any?

GTQ23. What are your views on the RIIO-1 outputs that we propose to remove?

In addition to the above questions, where relevant, please the see the supplementary output specific questions below.

Supplementary output specific questions

Safety

GTQ24. Do you have views on whether the proposed approach on safety is appropriate for RIIO-GT2?

Network capability

GTQ25. Do you agree with our assessment of the problems with the current arrangements, and how these problems can lead to consumer detriment?

GTQ26. Do you agree with our proposal to require NGGT to carry out an initial network capability assessment and submit the results as part of its Business Plan?

GTQ27. Do you agree that if baseline obligated entry or exit capacities are found to be at inappropriately high levels, we should consider revising them downwards in line with NGGT's proposals?

Arrangements for accessing unsold capacity

GTQ28. Do you agree with our proposal to require NGGT to review the arrangements for accessing unsold capacity?

GTQ29. Do you agree with our proposed scope for the review? Are there other aspects of access that should be reviewed at the same time?

Chapter 6 questions – Cost assessment

GTQ30. Do you agree with our intention to evolve the RIIO-GT1 approach for RIIO-GT2?

GTQ31. Do you have any comments on appropriate cost categories or approaches to cost assessment?

GTQ32. Do you agree with our proposed approach to cost categorisation? Please provide an explanation to your answer.

GTQ33. Do you support our view of the need for greater granularity and transparency in cost reporting to further develop our cost assessment capability?

GTQ34. We invite views on whether the proposed toolkit is appropriate or there are there other assessment techniques we should consider for our cost assessment toolkit in RIIO-GT2.

Chapter 7 questions – Uncertainty mechanisms

General uncertainty mechanism questions

GTQ35. What are your views on the proposed uncertainty mechanisms and their design?

GTQ36. Are there any additional mechanisms that we should be considering across the sector? If so, how should these be designed

GTQ37. What are your views on the RIIO-GT1 uncertainty mechanisms we propose to remove?

In addition to the above questions, where relevant, please the see the supplementary uncertainty mechanisms questions below.

Supplementary uncertainty mechanism specific questions

Review of Agency (Xoserve) costs

GTQ38. What do you think is the most appropriate approach for funding the Gas Transporters' expenditure for Xoserve in RIIO-2? In particular, which approach do you think is in the best interest of consumers?

GTQ39. If Xoserve takes on any services beyond its core Central Data Service Provider role, how should we treat the costs and risks associated with these additional services through the price control?